



Surge Protection

Main Catalogue 2012/2013



New Products



DEHNvenCI 1 255 (FM)

- Spark-gap-based combined lightning current and surge arrester with integrated arrester backup fuse
- Maximum system availability due to RADAX Flow follow current limitation
- Capable of protecting terminal equipment

See page 38



DEHNshield ... 255

- Application-optimised prewired combined lightning current and surge arrester based on spark gap technology
- Space-saving arrester for compact and simply equipped electrical installations with reduced technical requirements
- Capable of protecting terminal equipment

See page 40



DEHNlimit PV 1000 V2 (FM)

- Prewired combined lightning current and surge arrester for use in photovoltaic generator circuits
- Maximum system availability due to spark gap technology with direct current extinction circuit
- Double or triple terminal provides additional installation benefits

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DEHNsecure M ... (FM)

- Coordinated spark-gap-based lightning current arrester consisting of a base part and plug-in protection module
- Spark gap technology particularly suited for use in d.c. circuits

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DEHnbloc H M 1 255

- Modular single-pole lightning current arrester
- Encapsulated non-exhausting creepage discharge spark gap
- RADAX Flow spark gap technology with high follow current limitation

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DEHNgap H M 255

- Discharge capacity up to 100 kA (10/350 µs)
- Total current arrester specifically designed for installation in "3+1" and "1+1" circuits of TT systems according to IEC 60364-5-53 between neutral conductor N and protective conductor PE

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DEHNguard M TT 150 (FM)

- Prewired complete unit consisting of a base part and plug-in protection modules
- High discharge capacity due to powerful zinc oxide varistors/spark gaps
- High reliability due to "Thermo Dynamic Control" SPD monitoring device

See page 89 (90)



DEHNguard S PV SCI 150/600 (FM)

- Prewired modular surge arrester for use in photovoltaic systems
- Patented SCI principle prevents fire damage caused by d.c. switching arcs
- Special version for photovoltaic systems solidly earthed on the d.c. side

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SFL PRO 6X (Multiple Socket Outlet)

- Surge protection with monitoring device and disconnect
- Interference suppressor filter
- SFL PRO 6X 19" ideally suited for use in data cabinets

See page 143



DEHNpanel

- Visual remote indicator for surge protective devices (SPDs)
- For installation into switchgear cabinet doors
- Low energy consumption due to current-saving LEDs

See page 147



STAK 25 Pin-shaped Terminal

- Allows an EMC-optimised feed-through wiring according to IEC 60364-5-53
- Suitable for DEHNguard S, DEHNguard M, DEHNshield and DK 25 feed-through terminals

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BXT ML4(2) MY (E) 110 (250)

- Surge arrester with LifeCheck monitoring device
- Protection of two or four lines of stranded signal interfaces
- Distinctive Y circuit

See page 196 / 204 / 205



BXT ML2 BE S 36

- Combined lightning current and surge arrester module with LifeCheck monitoring device
- Protection of two single lines with common reference potential
- Terminals for direct or indirect shield earthing
- UL and VdS-certified

See page 199



BVT ALD 60

- Energy-coordinated combined lightning current and surge arrester
- For protecting unearthed d.c. power supply systems up to a nominal current of 4 A
- Low voltage protection level, thus ideally suited for sensitive terminal equipment

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DEHNbox

- Universal lightning current/surge arrester with actiVsense technology
- Automatically detects the signal voltage from 0 to 180 V
- Suitable for wall mounting, degree of protection IP 65

See page 263



DEHNgate DGA G SMA

- Coaxial surge arrester with SMA connection
- Extremely wide transmission range up to 5.8 GHz
- Ideally suited for wireless applications

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DEHNpipe DPI EXI+D 2X24 / 2X48 M(N)

- Dual surge protection for two signal circuits with a nominal voltage of 24/48 kV
- Easy installation on field devices with a spare cable gland
- Approval for hazardous areas Ex(d) and Ex(i)

See page 316



BXT ML2 BD S EX 24

- Surge arrester with LifeCheck monitoring device for use in hazardous areas
- Protection of one pair in intrinsically safe measuring circuits
- Terminals for direct and indirect shield earthing
- ATEX and IECEx-certified

See page 324

Surge Protection Main Catalogue 2012/2013

Valid as of 1st April 2012

This catalogue replaces the Surge Protection main catalogue published in 2010/2011.

We reserve the right to introduce changes in configuration and technology, dimensions, weights and materials in the course of technical progress. Illustrations are not binding. Misprints and errors cannot be ruled out and the right to make changes is reserved.

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Our promise

DEHN protects

Our family-owned company has been specialising in surge protection, lightning protection and safety equipment for many decades. With the key objective of protecting workers and material assets, we have made a name for ourselves in the market.

It was our pioneering spirit and innovative ideas that have defined our company for more than 100 years and made us a market leader with more than 1,400 employees. Our products and developments reflect our market feasibility, commitment and ideas.

As early as in 1923 our founder Hans Dehn started production of external lightning protection and earthing components to optimise the protection of buildings and installations. In 1954, we launched the first series of surge protective devices. Constant further development of these devices ensures safe operation and permanent availability of electrical and electronic installations. Also in the 1950s, our third sector, safety equipment, was added to our portfolio.

The Bavarian town of Neumarkt is the heart of our activities where product managers and developers advance our protection technologies. Here we manufacture our high-quality safety products.

We offer the best solution

Our concern is to be a reliable and fair partner for our industrial, commercial and technical customers all over the world. To this end, we always focus on the best solution to protection problems. Our sales teams in Germany and our global network of 11 subsidiaries as well as more than 70 international sales partners are committed to competent and customer-oriented distribution of our products. Proximity and close contact with our customers is of utmost importance to us, be it on-site support by our experienced field staff team, our telephone hotline or personal contact at trade fairs.

In hundreds of seminar, workshops and conferences held every year throughout the world we impart practical knowledge on products and solutions.

Our specialised book "Lightning Protection Guide" and our brochures will broaden your practical knowledge. Or visit us at www.dehn.de for information around the clock.

DEHN stands for innovation, highest quality and consistent customer and market orientation – also in the future.



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Lightning protection zones concept

Failures of technical systems and installations are very unpleasant for operators. Faultless operation of the equipment is required both during “normal” operation and in case of thunderstorms. Loss reports of insurance companies clearly show that there are deficits both in the private (Fig. 1) and commercial sector (Fig. 2). A comprehensive protection concept would help to achieve this aim.

The lightning protection zones concept enables designers, constructors and operators to plan, implement and control protection measures. All relevant devices, installations and systems are thus reliably protected with economically acceptable efforts.

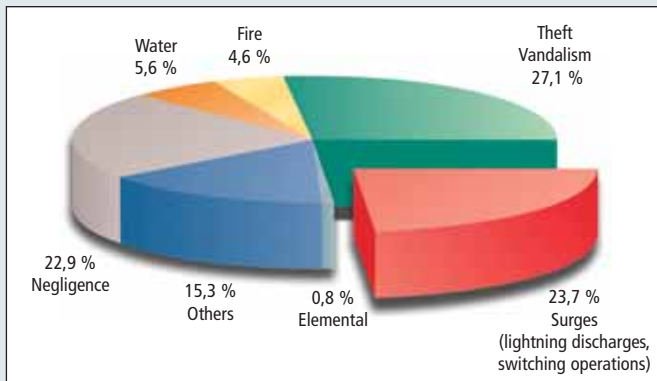


Fig. 1: Causes of damage to electronic equipment, Analysis of 7370 damage claims (Ref.: Württembergsche Versicherung AG)

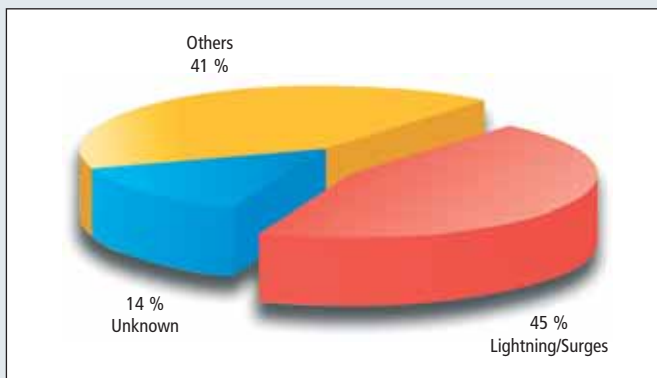


Fig. 2: Average damage causes during the last years (Ref.: Gesamtverband der Deutschen Versicherungswirtschaft e.V.)

Sources of interference

Surges arising due to thunderstorms are caused by direct / close lightning strikes or distant lightning strikes (Fig. 3).

Direct or close lightning strikes are strikes into the lightning protection system of a structure, into its immediate vicinity or into the conductive systems entering the structure (e.g. low-voltage power supply, telecommunications lines and control lines...). Due to their amplitudes and energy contents, the arising impulse currents and impulse voltages as well as the corresponding electromagnetic field (LEMP) represent a special risk for the system to be protected.

In case of a close or direct lightning strike, the surges (Fig. 3: Case 1a) are caused by a voltage drop at the impulse earthing resistance and the resulting potential rise of the structure towards the distant surroundings. This is the maximum load on electrical installations in structures.

The characteristic parameters of impulse currents (peak value, rate of current rise, load, charge, specific energy) can be described by means of the 10/350 μ s impulse current wave form (Fig. 4) and are defined in international, European and national standards as test currents for components and devices for protection against direct lightning strikes.

In addition to the voltage drop at the impulse earthing resistance, surges arise in the electrical building installation and the systems and equipment connected to it due to the induction effect of the electromagnetic lightning field (Fig. 3: Case 1b).

The energy of these induced surges and the resulting impulse currents is considerably lower than the energy of a direct lightning impulse current and is therefore only described with a 8/20 μ s impulse current wave (Fig. 4). Components and equipment, which do not have to conduct currents caused by direct lightning strikes, are therefore tested with 8/20 μ s impulse currents.

Protection philosophy

Distant strikes are lightning strikes from a distance into the object to be protected, lightning strikes into the medium-voltage overhead line network or into its immediate vicinity or cloud-to-cloud lightning discharges (Fig. 3: Cases 2a, 2b and 2c).

As with induced surges, the effects of distant lightning strikes on the electrical system of a structure are controlled by devices and components designed for 8/20 μ s impulse current waves.

Surges due to switching operations (SEMP) are caused by e.g.

- switching off inductive loads (e.g. transformers, coils, motors),
- ignition and interruption of electric arcs (e.g. arc welding device),
- tripping of fuses.

The effects of switching operations in the electrical installation of a structure can also be simulated for testing purposes with impulse currents of wave form 8/20 μ s.

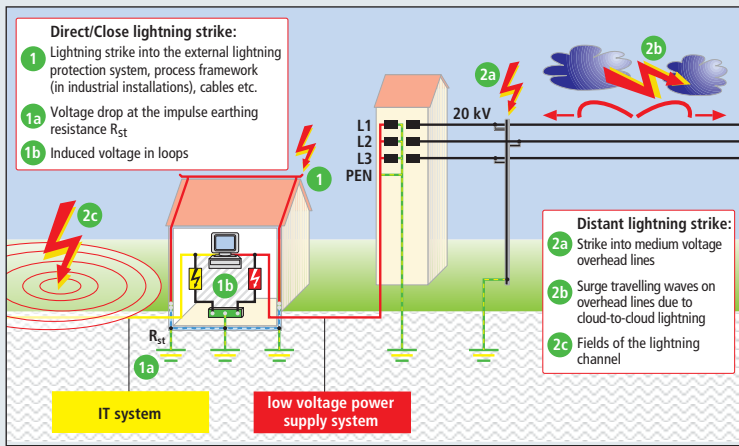


Fig. 3: Causes of surges in case of lightning discharges

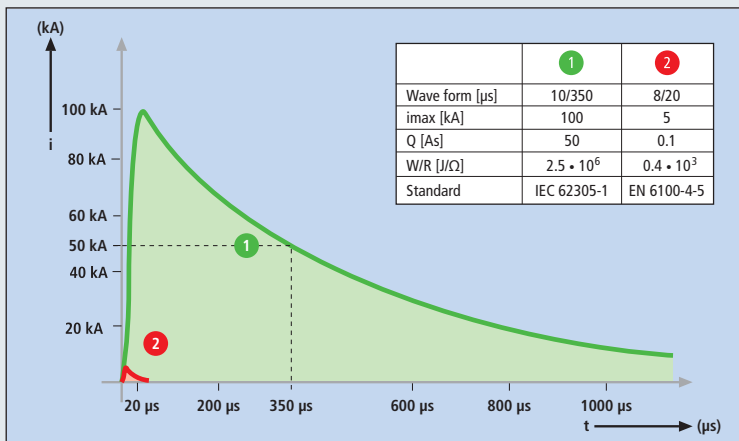


Fig. 4: 1 Test impulse current for lightning current arresters, 2 Test impulse current for surge arresters

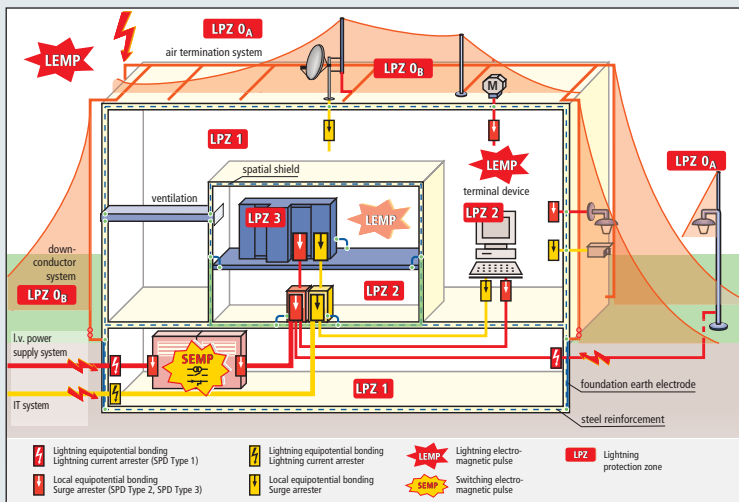


Fig. 5: EMC-based lightning protection zones concept

LEMP protection of structures with electrical and electronic systems according to IEC 62305-4

Lightning Protection Zone	Description
LPZ 0 _A	Threat by direct lightning strokes, impulse currents up to complete lightning currents and the entire lightning field.
LPZ 0 _B	Protected against direct lightning strokes. Threat by impulse currents up to partial lightning currents and the entire lightning field.
LPZ 1	Impulse currents are further limited by current distribution and SPDs situated at the zone boundaries. The lightning field is mostly attenuated by spatial shielding.
LPZ 2	Impulse currents are further limited by current distribution and SPDs situated at the zone boundaries. The lightning field is mostly attenuated by spatial shielding.

Table 1: Definition of lightning protection zones (LPZ)

To ensure permanent availability of complex power supply and IT systems even in case of a direct lightning effect, further surge protection measures for electrical and electronic installations are necessary in addition to the lightning protection system of a structure. Taking all causes of surges into consideration is very important. For this purpose, the lightning protection zones concept described in IEC 62305-4 is applied (Fig. 5). A structure is subdivided into different risk zones. These zones help to define the necessary protection measures, in particular the lightning and surge protection devices and components. Part of an EMC-conform lightning protection zones concept is an external lightning protection system (including air-termination system, down-conductor system, earthing), equipotential bonding, spatial shielding and surge protection for the power supply systems and IT systems. The lightning protection zones have to be defined according to Table 1.

According to the requirements and loads at the place of installation of surge protective devices, they are classified into lightning current arresters, surge arresters and combined lightning current and surge arresters. The highest discharge capacity requirements are placed on lightning current arresters and combined lightning current and surge arresters used at the transition from lightning protection zone 0_A to 1 or 0_A to 2.

These SPDs must be able to conduct partial lightning currents (wave form 10/350 µs) several times without destruction in order to prevent penetration of destructive partial lightning currents into the electrical installation of a building. At the transition from LPZ 0_B to 1 or downstream of the lightning current arrester at the transition from LPZ 1 to 2 and higher, surge arresters are used for protection against surges. Their function is to further reduce both the residual loads of the upstream protection stages and to limit the induced surges or surges produced in the installation.

The lightning and surge protective measures at the lightning protection zone boundaries described above apply to both power supply systems and IT systems to the same extent. All measures described in the EMC-conform lightning protection zones concept help to achieve permanent system availability of a modern infrastructure.

For more detailed technical information, we will be pleased to send you our "Lightning Protection Guide".

Surge Protective Devices (SPDs)

Surge protective devices are devices consisting mainly of voltage-controlled resistors (varistors, suppressor diodes) and/or spark gaps (discharge paths). Surge protective devices are used to protect other electrical equipment and installations against impermissibly high surges and/or to establish equipotential bonding. Surge protective devices are classified

a) according to their use into

- **Surge protective devices for power supply systems and equipment (Red/Line product family)**
for nominal voltage ranges up to 1000 V
– according to EN 61643-11:2007
+ A11:2007 in type 1/2/3 SPDs
– according to IEC 61643-1:2005/-11:2011 in class I/II/III SPDs
- **Surge protective devices for IT systems and equipment (Yellow/Line product family)**
for protecting modern electronic systems in telecommunications and signal-processing networks with nominal voltages up to 1000 V a.c. [root-mean-square value (rms)] and 1500 V d.c. against the indirect and direct effects of lightning strikes and other transients.
– according to IEC 61643-21:2009, EN 61643-21: 2010 and DIN VDE 0845 Part 3-1.
- **Isolating spark gaps for earth-termination systems or equipotential bonding (Red/Line product family)**
- **Surge protective devices for use in photovoltaic installations (Red/Line product family)**
for nominal voltage ranges up to 1500 V
– according to prEN 50539-11:2011 as type 1/2 SPDs

b) according to their **impulse current discharge capacity** and protective effect into:

- **Lightning current arresters / Coordinated lightning current arresters** for interference resulting from direct or close lightning strikes for protecting installations and equipment [for use at the boundaries between lightning protection zones (LPZ) 0_A and 1].
- **Surge arresters** for distant lightning strikes, switching over-voltages as well as electrostatic discharges for protecting installations, equipment and terminal devices (for use at the boundaries downstream of LPZ 0_B).
- **Combined lightning current and surge arresters** for interference resulting from direct or close lightning strikes for protecting of installations, equipment and terminal devices (for use at the boundaries between LPZ 0_A and 1 as well as 0_A and 2).

Technical data of surge protective devices

The technical data of surge protective devices comprise information defining their conditions of use according to

- use (e.g. installation, mains conditions, temperature)
- performance in case of interference (e.g. impulse current discharge capacity, follow current extinguishing capability, voltage protection level, response time)
- performance during operation (e.g. nominal current, attenuation, insulation resistance)
- performance in case of failure (e.g. backup fuse, disconnection device, fail-safe, remote signalling option).

Breaking capacity, follow current extinguishing capability I_{fi}

The breaking capacity is the uninfluenced (prospective) rms value of the mains follow current which can automatically be extinguished by the surge protective device when connecting U_c . It can be proven in an operating duty test according to EN 61643-11.

Categories according to IEC 61643-21:2009 (DIN VDE 0845 Part 3-1)

For testing the current carrying capability and voltage limitation of impulse influences, a variety of impulse voltages and impulse currents is described in IEC 61643-21:2009 (DIN VDE 0845 Part 3-1). Table 3 of this standard lists these categories and provides preferred values. In table 2 of IEC 61643-22 (DIN VDE 0845-3-2) the source of transients is assigned to the different impulse categories according to the decoupling mechanism. Category C2 includes inductive interference (surges), category D1 galvanic interference (lightning currents). The relevant category is specified in the technical data.

DEHN + SÖHNE surge protective devices exceed the values indicated in the categories. The exact value of the impulse current carrying capability is therefore specified by means of the nominal discharge current (8/20 μ s) and the lightning impulse current (10/350 μ s).

Cut-off frequency f_G

defines the frequency-dependent behaviour of an SPD. Cut-off frequencies are equivalent to the frequency which induces an insertion loss (a_E) of 3 dB under certain test conditions (see EN 61643-21:2010). Unless otherwise indicated, this value refers to a 50 Ω system.

Combined impulse U_{oc}

is generated by a hybrid generator (1.2/50 μ s, 8/20 μ s) with a fictitious impedance of 2 Ω . The open-circuit voltage of this generator is defined as U_{oc} . U_{oc} is a preferred indicator for type 3 SPDs since only these arresters may be tested with a combined pulse (according to EN 61643-11).

Degree of protection

The degree of protection (IP) corresponds to the protection categories in accordance with DIN EN 60529 (VDE 0470 Part 1).

Disconnecting time t_a

is the time passing until the automatic disconnection from power supply in case of a failure of the circuit or equipment to be protected. The disconnecting time is an application-specific value resulting from the intensity of the fault current and the characteristics of the protective device.

Energy coordination of SPDs

is the selective and coordinated effect of the protection elements (= SPDs) of an overall lightning and surge protection concept that are connected one after the other, meaning that the total load of the lightning impulse current is divided between the SPDs according to their energy carrying capability. If energy coordination is not possible, downstream SPDs are insufficiently relieved from an energetic point of view by the upstream SPDs since the upstream SPDs operate too late, insufficiently or not at all. Consequently, downstream SPDs as well as terminal equipment to be protected may be destroyed. DIN CLC/TS 61643-12:2010 describes how to verify energy coordination. Spark-gap-based type 1 SPDs offer considerable advantages due to their voltage-switching characteristic (see "WAVE BREAKER FUNCTION").

Frequency range

represents the transmission range or let-through frequency of an SPD depending on the described attenuation characteristics.

Insertion loss

With a given frequency, the insertion loss of a surge protective device is defined by the relation of the voltage value at the installation site before and after installing the SPD. Unless otherwise indicated, the value refers to a 50 Ω system.

Integrated backup fuse

According to the product standard for SPDs, overcurrent protective devices / backup fuses are to be used. This, however, requires additional space in the distribution board, additional cable lengths, which should be as short as possible according to DIN VDE 0100-534, additional installation time (and costs) and dimensioning of the backup fuse. An arrester backup fuse integrated in the SPD ideally suited for the impulse current load eliminates these disadvantages. The space gain, lower wiring effort, integrated fuse monitoring and the increased protective effect due to shorter connecting cables are considerable advantages of this concept which is implemented in the DEHNvenCI, DEHNbloc Maxi S, DEHNguard ... CI and V(A) NH product families.

LifeCheck®

Repeated discharges processes with values beyond the specification of the device may overload SPDs used in IT systems. In order to ensure a high system availability, SPDs should therefore be subject to systematic tests. LifeCheck allows quick and easy SPD testing (refer also to page 179).



Lightning impulse current I_{imp}

is a standardised impulse current curve with a wave form of 10/350 μ s. Its parameters (peak value, charge, specific energy) simulate the load caused by natural lightning currents. Lightning current and combined lightning current and surge arresters must be capable of discharging such lightning impulse currents several times without destruction.

Mains-side overcurrent protection / Arrester backup fuse

is an overcurrent protective device (e.g. fuse or circuit breaker), installed outside of the SPD on the infeed side to interrupt the power-frequency follow current, if the breaking capacity of the surge protective device is exceeded. No additional backup fuse is required since the backup fuse is already integrated in the SPD (see relevant section).

Max. continuous operating voltage U_C

is the root mean square (rms) value of the maximum voltage, which may be connected to the corresponding terminals of the surge protective device during operation. This is the maximum voltage on the SPD in the defined non-conducting state, which reverts the arrester back to this state after operation and discharge. The value of U_C depends on the nominal voltage of the system to be protected and the installer's specifications (IEC 60364-5-534).

Max. continuous operating voltage U_{CPV} of a photovoltaic (PV) system

value of the max. d.c. voltage that may be permanently applied to the terminals of the SPD. To ensure that U_{CPV} is higher than the max. open-circuit voltage of a PV system under any external influences (ambient temperature, intensity of solar radiation, ...), U_{CPV} must be higher than this max. open-circuit voltage by a factor of 1.2 (according to CLC/TS 50539-12). This factor of 1.2 ensures that the SPDs are not rated incorrectly.

Max. discharge current I_{max}

is the maximum peak value of the 8/20 μ s impulse current which can be safely discharged by the device.

Max. transmission capacity

defines the maximum RF capacity which can be transmitted via a coaxial surge protective device without interfering with the protection component.

Nominal discharge current I_n

is the peak value of a 8/20 μ s impulse current for which the surge protective device is rated in a certain test programme and which the surge protective device can discharge several times.

Nominal load current (nominal current) I_L

is the max. permissible operating current, which may be permanently carried through the corresponding terminals.

Nominal voltage U_N

stands for the nominal voltage of the system to be protected. The value of the nominal voltage often serves as the type designation for surge protective devices used in IT systems. It is indicated as an rms value for a.c. systems.

N-PE surge arresters

are surge protective devices exclusively designed for installation between the N and PE conductor.

Operating temperature range T_U

indicates the range in which the devices can be used. For non-self-heating devices, it is equal to the ambient temperature range. The temperature rise for self-heating devices must not exceed the maximum value indicated.

Protective circuit

Protective circuits are multi-stage, cascaded protective devices. The individual protection stages may consist of discharge paths, varistors, semiconductor elements and gas discharge tubes (see "Energy coordination").

Protective conductor current I_{PE}

is the current flowing through the PE connection when the surge protective device is connected to the maximum continuous operating voltage U_C , according to the installation instructions and without load-side consumers.

Remote signalling contact

provides a convenient option for remotely monitoring and indicating the operation of the device. The remote signalling option features a three-terminal floating changeover contact that can be used as break and/or make contact and can thus be easily integrated in the building control system, switchgear cabinet control, etc.

Response time t_A

Response times mainly characterise the response performance of individual protection elements used in surge protective devices. Depending on the rate of rise du/dt of the impulse voltage or di/dt of the impulse current, the response times may vary within certain limits.

Return loss

in high-frequency applications, the return loss refers to how many parts of the "leading" wave are reflected at the protective device ("surge point"). This is a direct measure of how well a protective device is attuned to the surge impedance of the system.

Series impedance

is the impedance in the direction of the signal flow between the input and output of the SPD.

Shield attenuation

Relation of the power fed into a coaxial cable to the power radiated through the cable from the phase conductor.

Short-circuit withstand capability

is the value of the prospective power-frequency short-circuit current controlled by the surge protective device when the corresponding backup fuse is connected upstream.

Short-circuit withstand capability I_{SCWPV} of an SPDs in a photovoltaic (PV) system

max. uninfluenced short-circuit current which the SPD, alone or in conjunction with its disconnection devices, is able to withstand.

SPD class Yellow / Line

All DEHN surge arresters for use in IT systems are assigned a Yellow/Line SPD class and are marked with a symbol in the technical data sheet and on the rating plate (refer also to page 178).

Temporary overvoltage (TOV)

may be present at the surge protective device for a short period of time due to a fault in the high-voltage system. This must be clearly distinguished from a transient load caused by a lightning strike or a switching operation, which last no longer than about 1 ms. The amplitude U_T and the duration of this temporary overvoltage are specified in EN 61643-11 (200 ms or 5 s) and are individually tested for the relevant SPDs according to the system configuration (TN, TT, ...). The SPD can either a) reliably fail (TOV safety) or b) be TOV-resistant (TOV resistance), meaning that it is completely operational during and following temporary overvoltages.

Thermal disconnecter

Surge protective devices for use in power supply systems equipped with voltage-controlled resistors (varistors) mostly have an integrated disconnecter, which isolates the surge protective device from mains in case of overload and indicates this operating state. The disconnecter responds to the "current heat" generated by an overloaded varistor and disconnects the surge protective device from mains, if a certain temperature is exceeded.

The disconnecter is designed to disconnect the overloaded surge protective device in time to prevent a fire. It is not intended to provide "protection against indirect contact".

The function of these thermal disconnecters can be tested by simulated overloads/ageing of the SPD.

Total discharge current I_{total}

current flowing through the PE, PEN or earth connection of a multipole SPD during testing the total discharge current. This test is used to verify the total load if current is flowing through several protective circuits of a multipole SPD. This parameter is decisive for the total discharge capacity which reliably copes with the individual paths of the SPD.

Voltage protection level U_p

The voltage protection level of a surge protective device is the maximum instantaneous value of the voltage at the terminals of a surge protective device, determined from the standardised individual tests

- Lightning impulse sparkover voltage
1.2/50 μ s (100%)
- Sparkover voltage with a rate of rise of
1 kV/ μ s
- Measured limit voltage in case of nominal discharge current I_n

The voltage protection level characterises the capability of a surge protective device to limit surges to a residual level. If used in power supply systems, the voltage protection level defines the location of use with regard to the overvoltage category according to DIN VDE 0110-1:2003-11 (DIN EN 60664-1, IEC 60664-1). For surge protective devices designed for use in IT systems, the voltage protection level has to be adapted to the immunity of the equipment to be protected (IEC 61000-4-5: 2001-12).

Wave breaker function

Due to the technical design of type 1 SPDs, energy coordination of SPDs considerably varies. Experience has shown that even small amplitudes of the 10/350 μ s lightning impulse current overload downstream SPDs or even destroy them if varistor-based type 1 lightning current arresters are used. In case of spark-gap-based type 1 arresters, in contrast, virtually the total current is flowing through the type 1 arrester; the energy is reduced to an acceptable level. The benefit is that the time to half value of the 10/350 μ s impulse current is reduced due to the reduction of the pulse time and the switching behaviour of SPD 1. This considerably relieves downstream SPDs (according to EN 62305-4:2006, section C.3.3).

All devices of the DEHN + SÖHNE Red/Line and Yellow/Line product family are energy coordinated. Moreover, all type 1 arresters of the Red/Line family are based on spark gaps and thus feature this **WAVE BREAKER FUNCTION**.



Surge protection for POWER SUPPLY SYSTEMS

SPDs for low-voltage installations and equipment



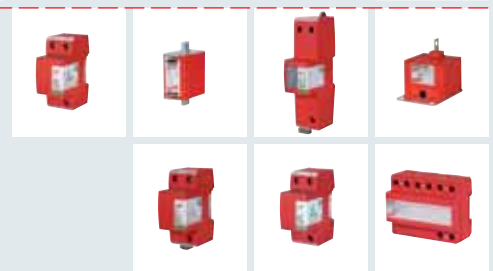
Red / Line

Easy Choice 15

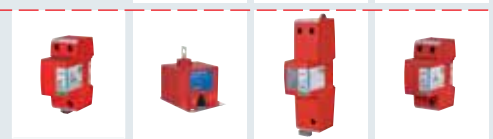
Combined SPDs – Type 1 27



Coordinated Lightning Current Arresters – Type 1 49



N-PE Lightning Current Arresters – Type 1 71



Surge Arresters – Type 2 77



Surge Arresters – Type 3 119



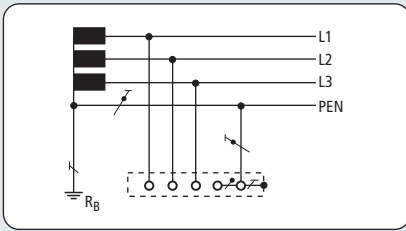
Accessories 147



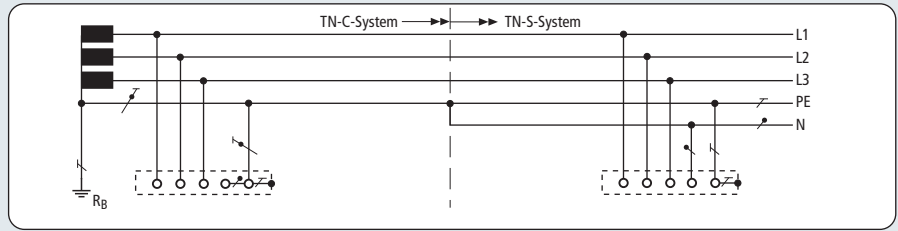
Measuring and Test Devices 373



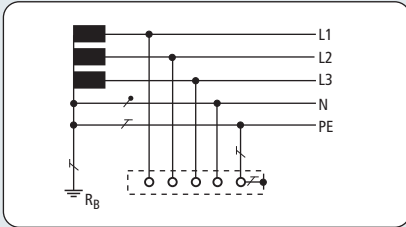
International system configurations* according to IEC 60364-1 (DIN VDE 0100-100)



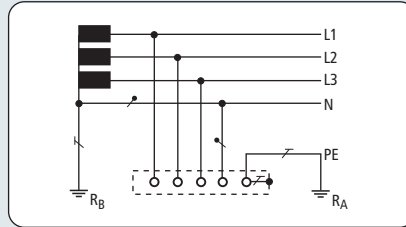
TN-C system 230 / 400 V



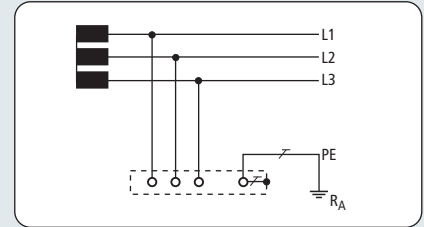
TN-C-S system 230 / 400 V



TN-S system 230 / 400 V

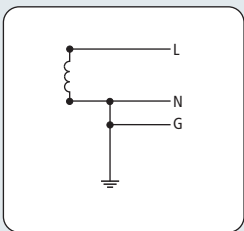


TT system 230 / 400 V



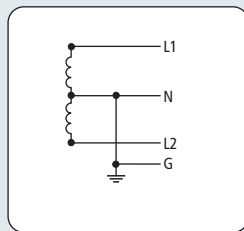
IT system 230 V, 400 V, 500 V, 690 V

Further system configurations* used worldwide



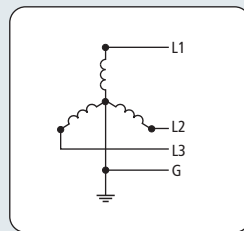
single-phase; 3 conductors

(1 Ph, 2 W + G)
110 V
120 V
220 V
240 V



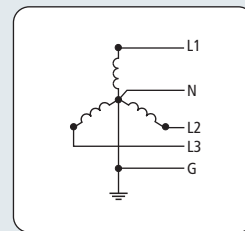
single-phase; 4 conductors
Split Phase or Edison

(1 Ph, 3 W + G)
120 V / 240 V



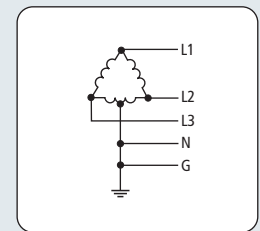
3-phase; 4 conductors

(3 Ph Y, 3 W + G)
480 V



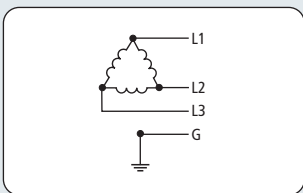
3-phase; 5 conductors

(3 Ph Y, 4 W + G)
120 V / 208 V
277 V / 480 V



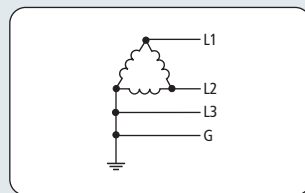
3-phase; 5 conductors
Delta "Highleg"

(3 Ph Δ, 4 W + G)
120 V / 240 V



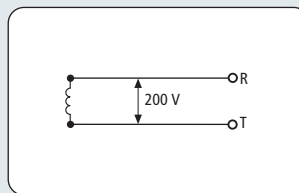
3-phase; 4 conductors
Delta "Ungrounded"

(3 Ph Δ, 3 W + G)
240 V
480 V



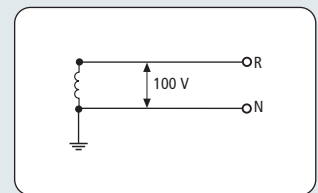
3-phase; 4 conductors
Delta "Grounded Corner"

(3 Ph Δ, 3 W + G)
240 V
480 V



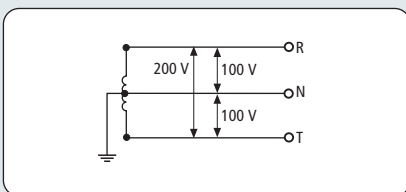
single-phase; 2 conductors

(1 Ph, 2 W)
200 V



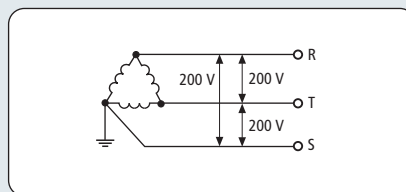
single-phase; 2 conductors

(1 Ph, 2 W)
100 V



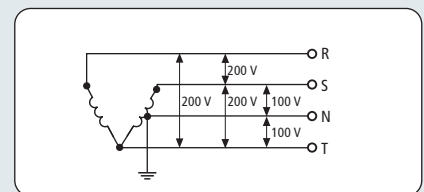
single-phase; 3 conductors

(1 Ph, 3 W)
100 V / 200 V



3-phase; 3 conductors

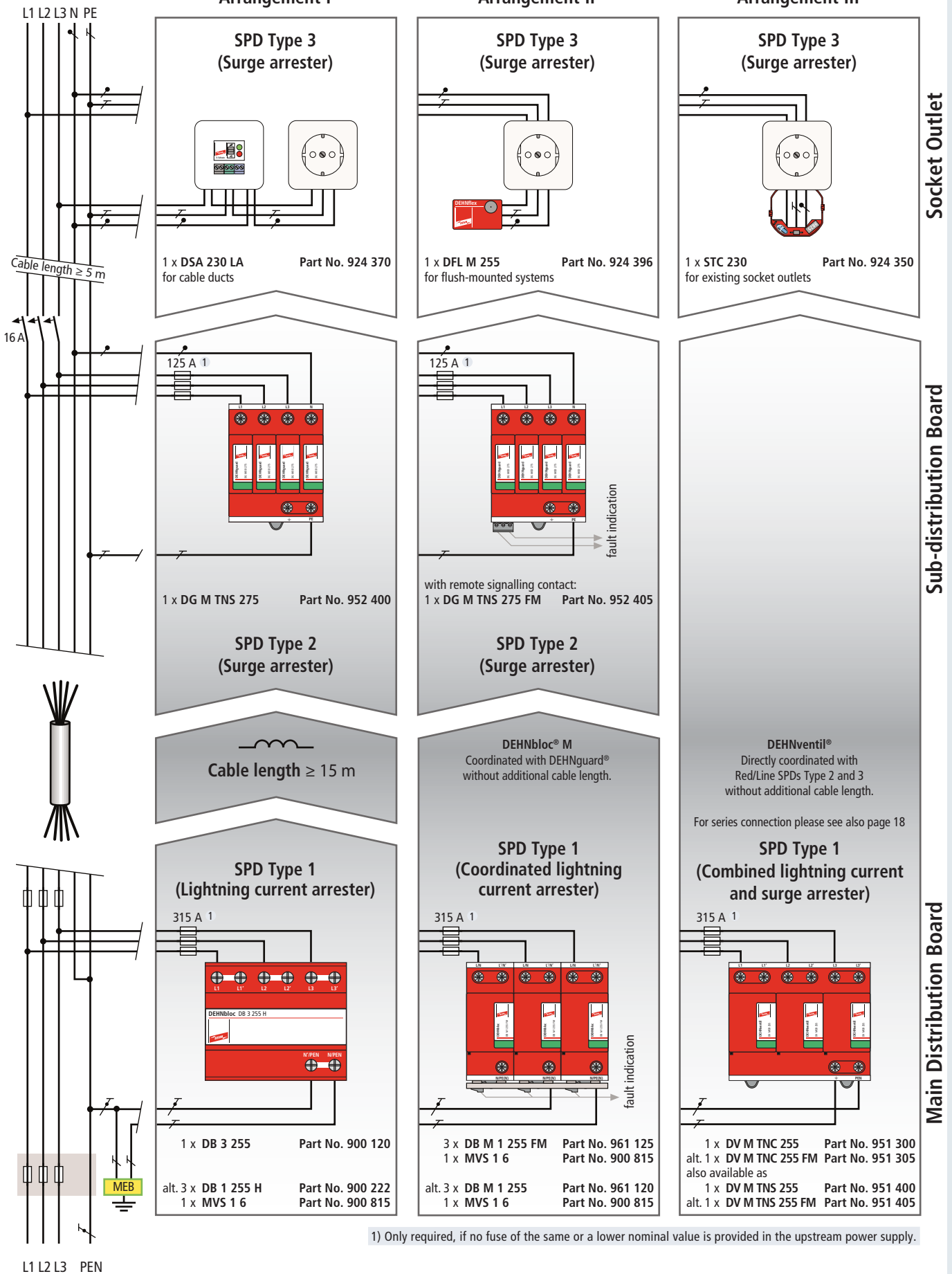
(3 Ph, 3 W)
200 V



3-phase; 3 conductors + single-phase; 3 conductors

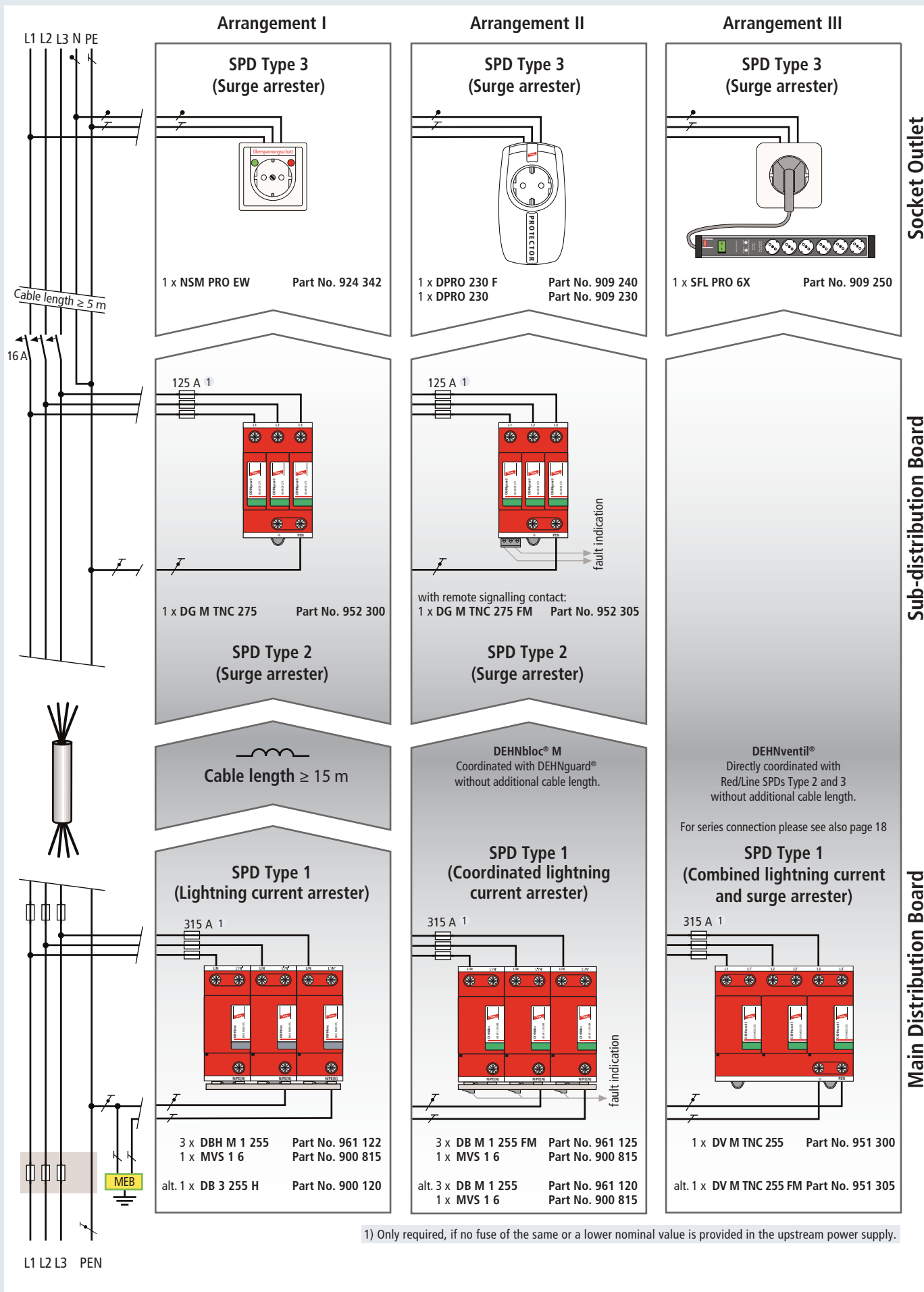
100 V / 200 V; 200 V

* System according to earth connection (according to DIN VDE 0100-100)

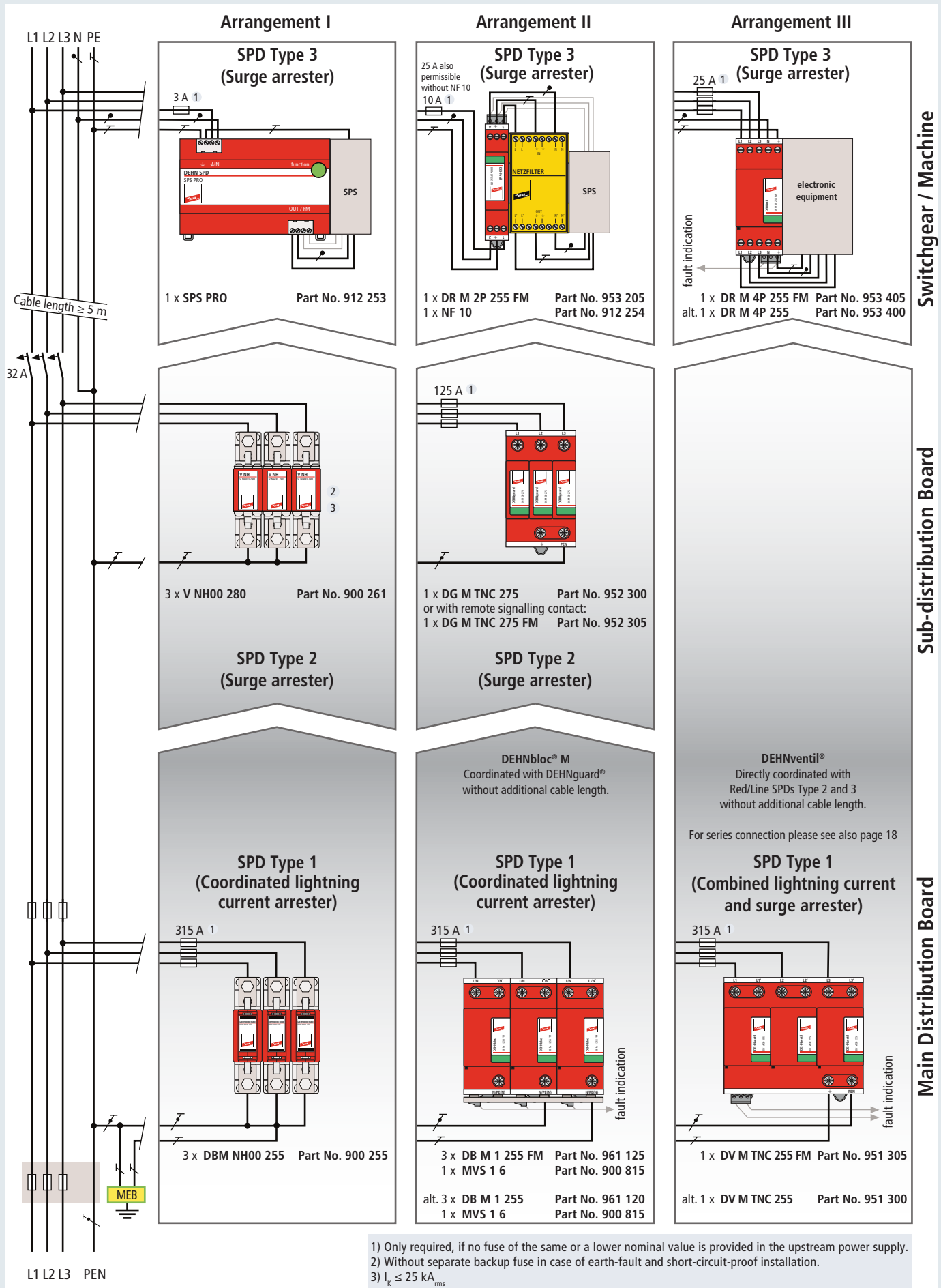


1) Only required, if no fuse of the same or a lower nominal value is provided in the upstream power supply.

TN system: Office building – Separation of the PEN conductor in the main distribution board

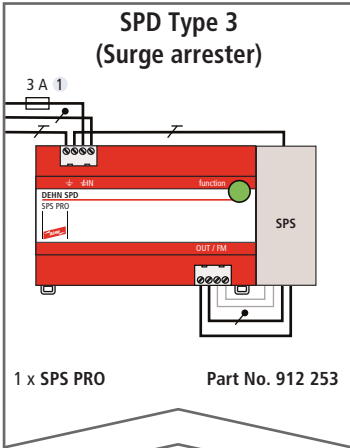


TN system: Example: Office building – Separation of the PEN conductor in the sub-distribution board



Arrangement I

SPD Type 3
(Surge arrester)

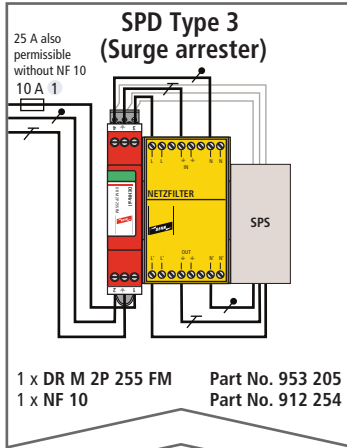


1 x SPS PRO

Part No. 912 253

Arrangement II

SPD Type 3
(Surge arrester)

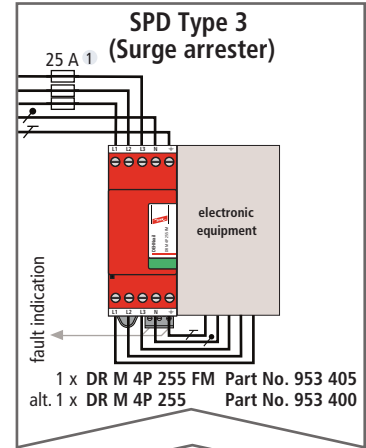


1 x DR M 2P 255 FM

Part No. 953 205
Part No. 912 254

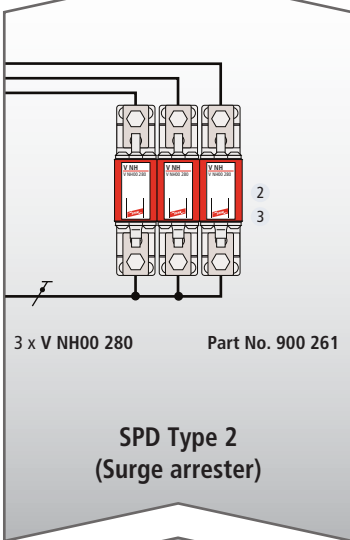
Arrangement III

SPD Type 3
(Surge arrester)



1 x DR M 4P 255 FM Part No. 953 405
alt. 1 x DR M 4P 255 Part No. 953 400

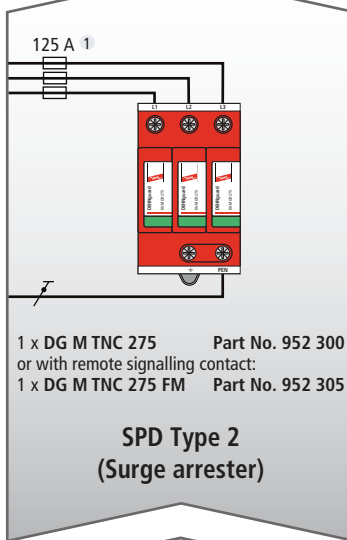
SPD Type 2
(Surge arrester)



3 x V NH00 280

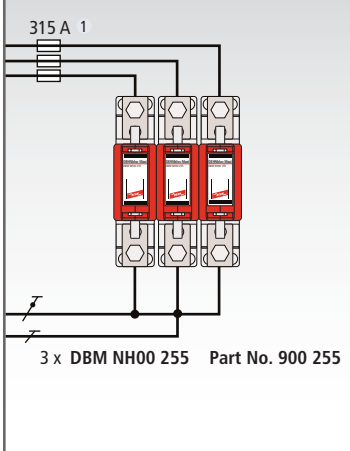
Part No. 900 261

SPD Type 2
(Surge arrester)



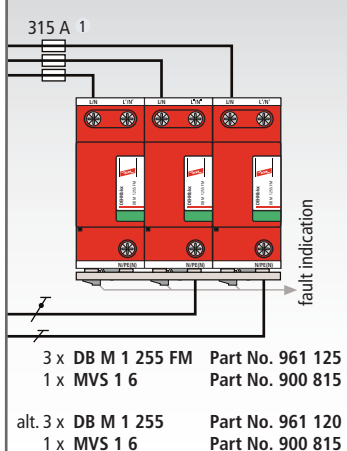
1 x DG M TNC 275 Part No. 952 300
or with remote signalling contact:
1 x DG M TNC 275 FM Part No. 952 305

SPD Type 1
(Coordinated lightning
current arrester)



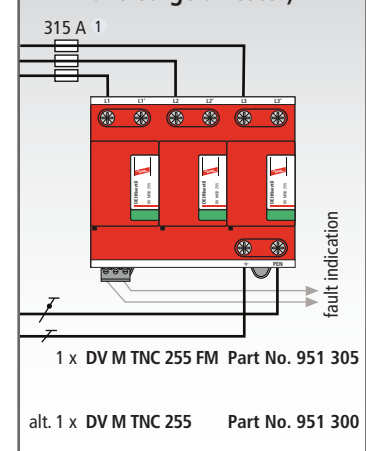
3 x DBM NH00 255 Part No. 900 255

SPD Type 1
(Coordinated lightning
current arrester)



3 x DB M 1 255 FM Part No. 961 125
1 x MVS 1 6 Part No. 900 815
alt. 3 x DB M 1 255 Part No. 961 120
1 x MVS 1 6 Part No. 900 815

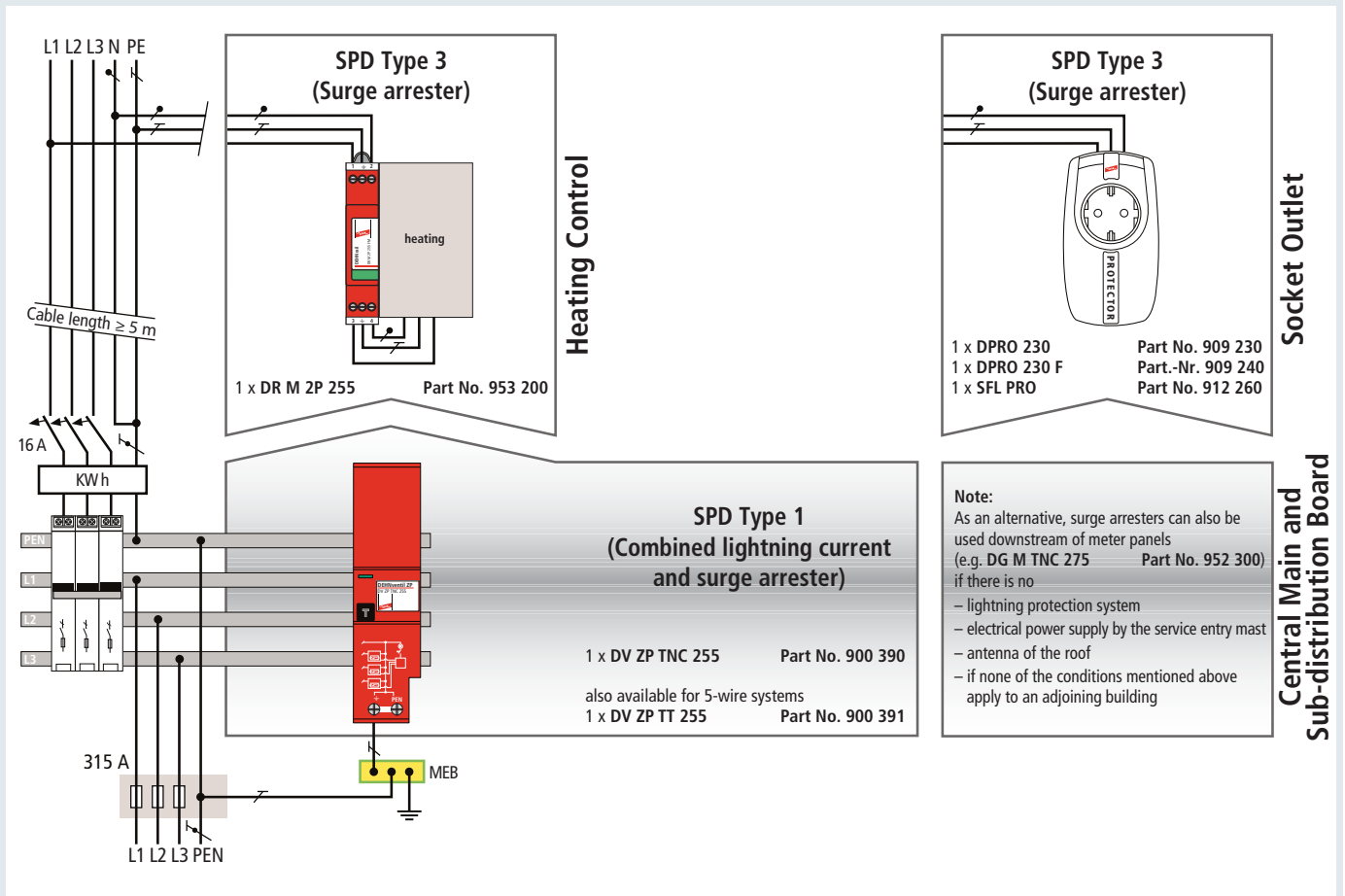
SPD Type 1
(Combined lightning current
and surge arrester)



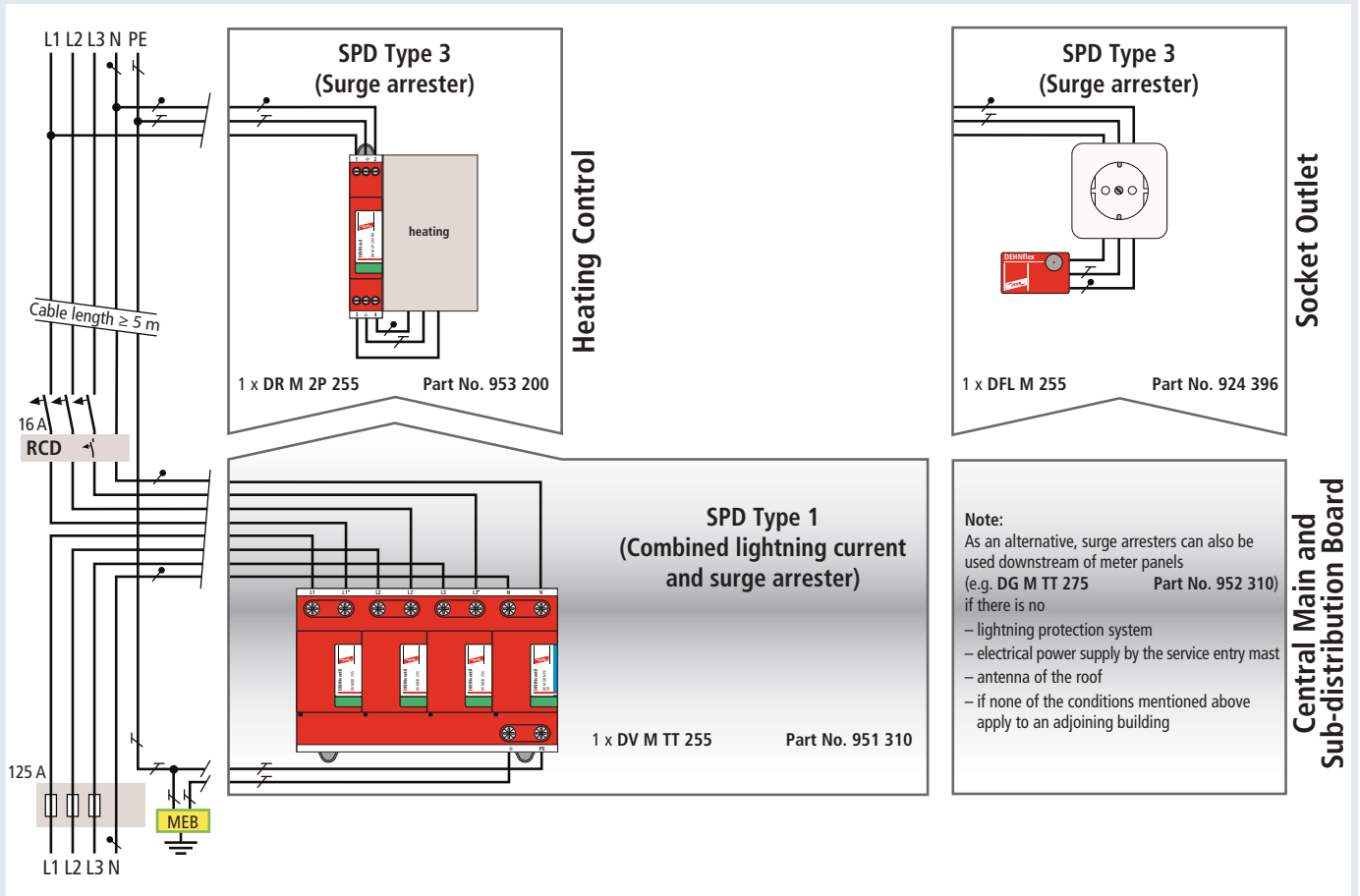
1 x DV M TNC 255 FM Part No. 951 305
alt. 1 x DV M TNC 255 Part No. 951 300

- 1) Only required, if no fuse of the same or a lower nominal value is provided in the upstream power supply.
- 2) Without separate backup fuse in case of earth-fault and short-circuit-proof installation.
- 3) $I_k \leq 25 \text{ kA}_{\text{rms}}$

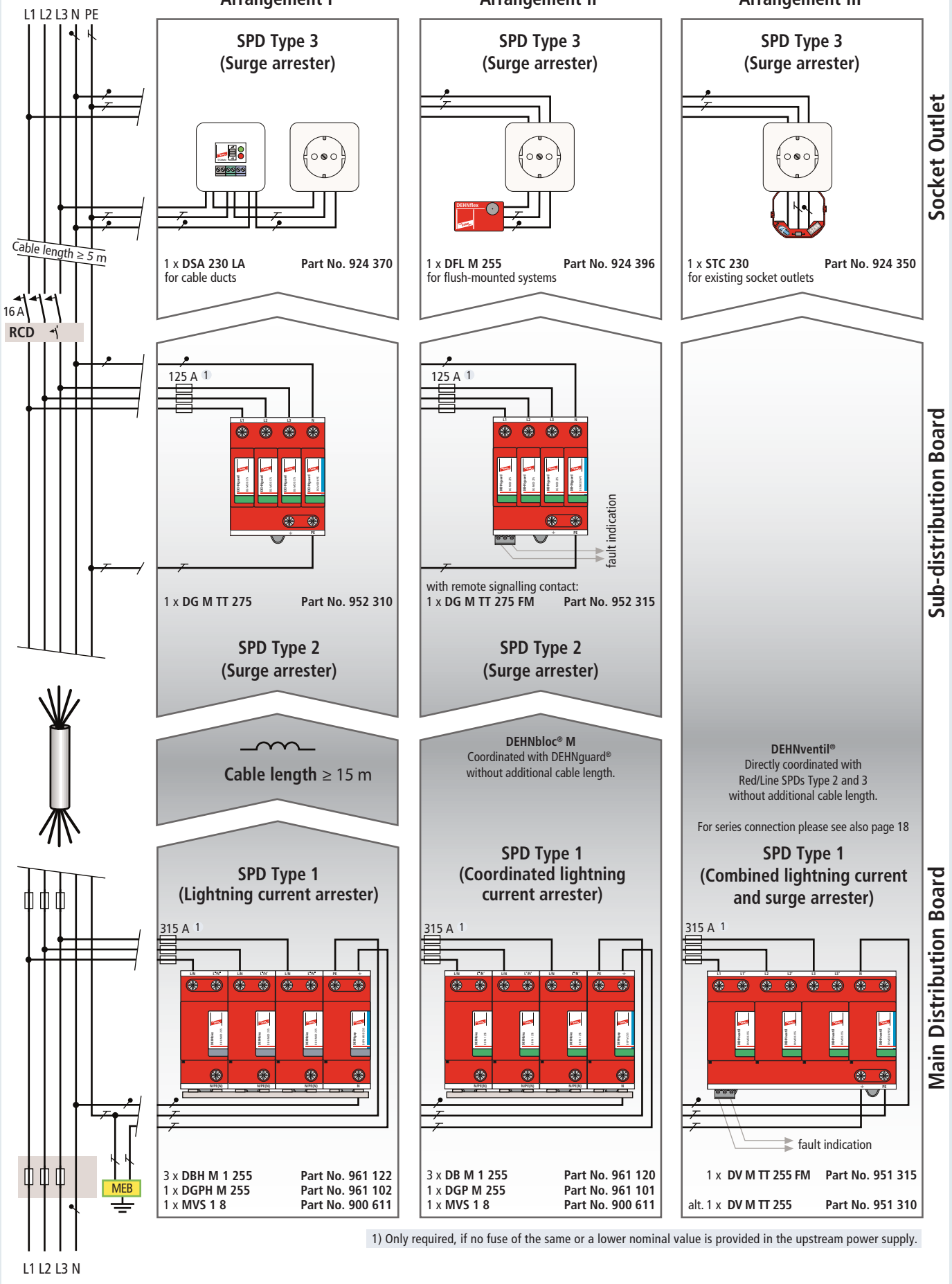
TN system: Example: Industrial building – Separation of the PEN conductor in the sub-distribution board



TN system: Example: Single-family house



TT system: Example: Single-family house



Arrangement I

Arrangement II

Arrangement III

SPD Type 3
(Surge arrester)

SPD Type 3
(Surge arrester)

SPD Type 3
(Surge arrester)

1 x DSA 230 LA for cable ducts Part No. 924 370

1 x DFL M 255 for flush-mounted systems Part No. 924 396

1 x STC 230 for existing socket outlets Part No. 924 350

1 x DG M TT 275 Part No. 952 310

with remote signalling contact:
1 x DG M TT 275 FM Part No. 952 315

SPD Type 2
(Surge arrester)

SPD Type 2
(Surge arrester)

Cable length ≥ 15 m

DEHNbloc® M
Coordinated with DEHNguard®
without additional cable length.

DEHNventil®
Directly coordinated with
Red/Line SPDs Type 2 and 3
without additional cable length.

For series connection please see also page 18

SPD Type 1
(Lightning current arrester)

SPD Type 1
(Coordinated lightning
current arrester)

SPD Type 1
(Combined lightning current
and surge arrester)

3 x DBH M 1 255 Part No. 961 122
1 x DGPH M 255 Part No. 961 102
1 x MVS 1 8 Part No. 900 611

3 x DB M 1 255 Part No. 961 120
1 x DGP M 255 Part No. 961 101
1 x MVS 1 8 Part No. 900 611

1 x DV M TT 255 FM Part No. 951 315
alt. 1 x DV M TT 255 Part No. 951 310

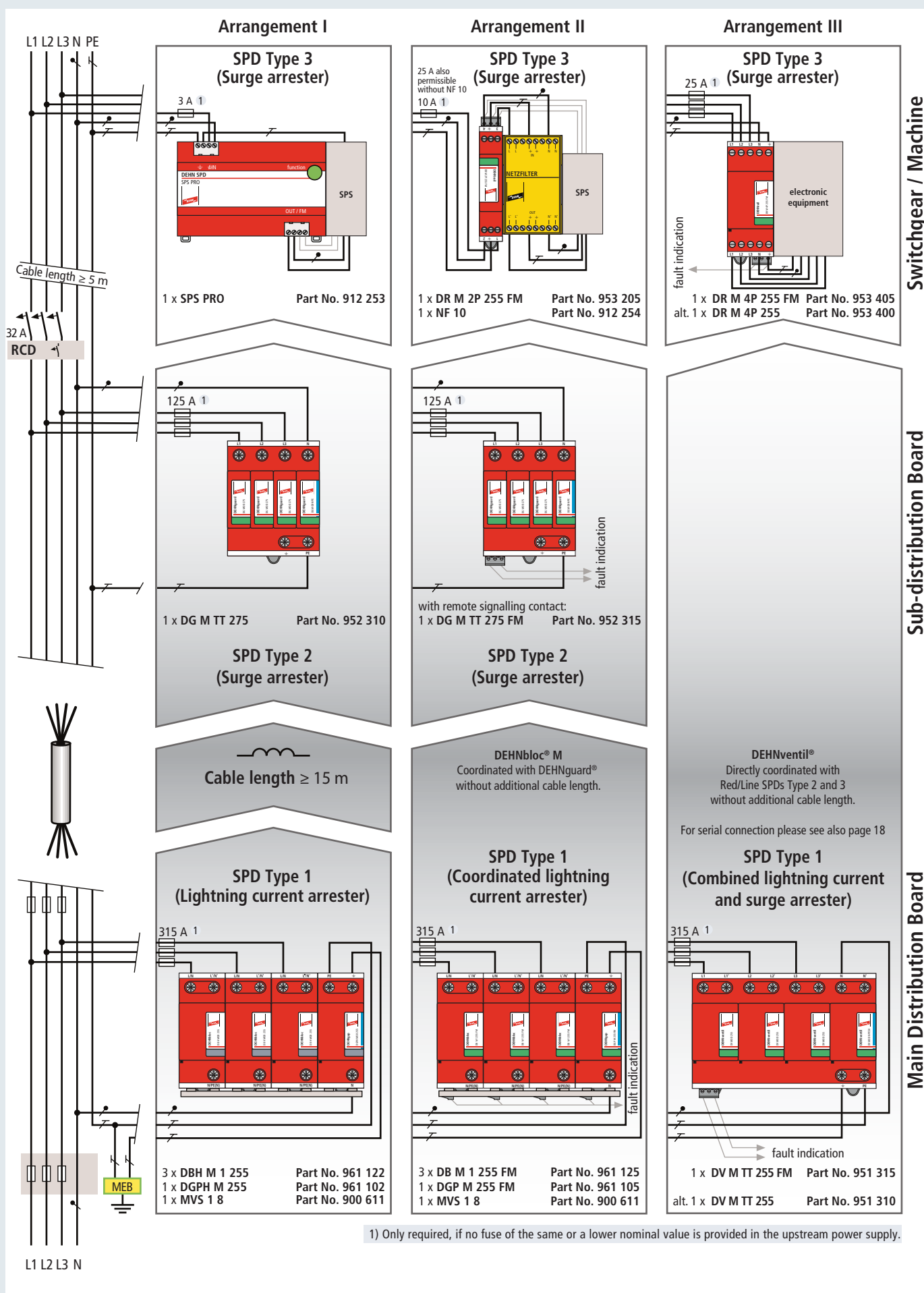
1) Only required, if no fuse of the same or a lower nominal value is provided in the upstream power supply.

Socket Outlet

Sub-distribution Board

Main Distribution Board

TT system: Example: Office building

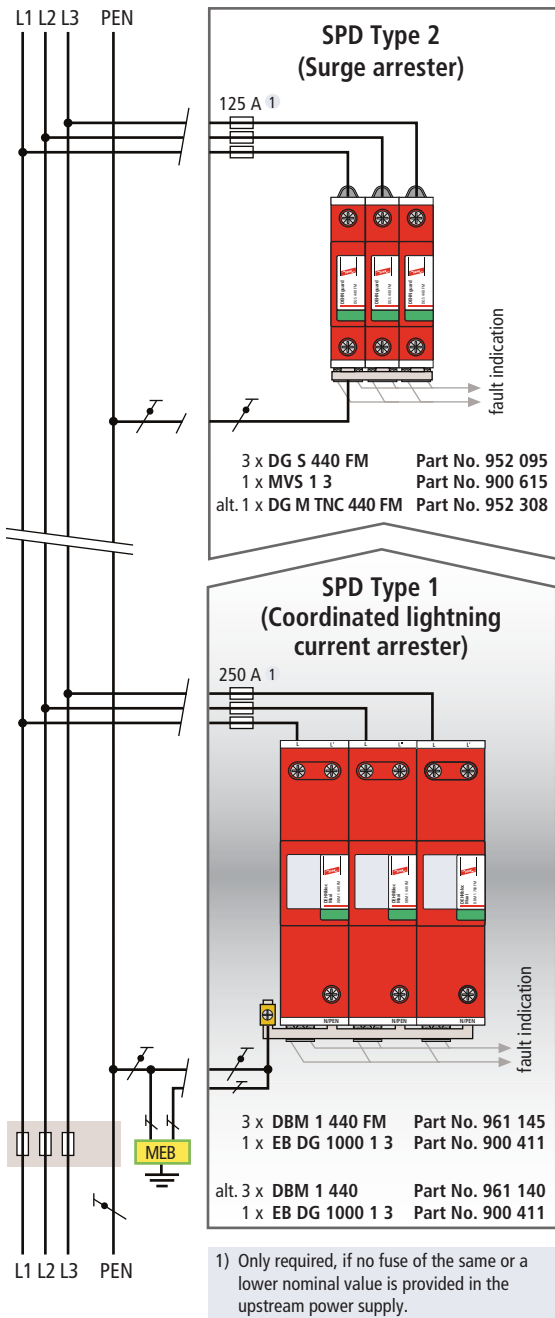


Switchgear / Machine

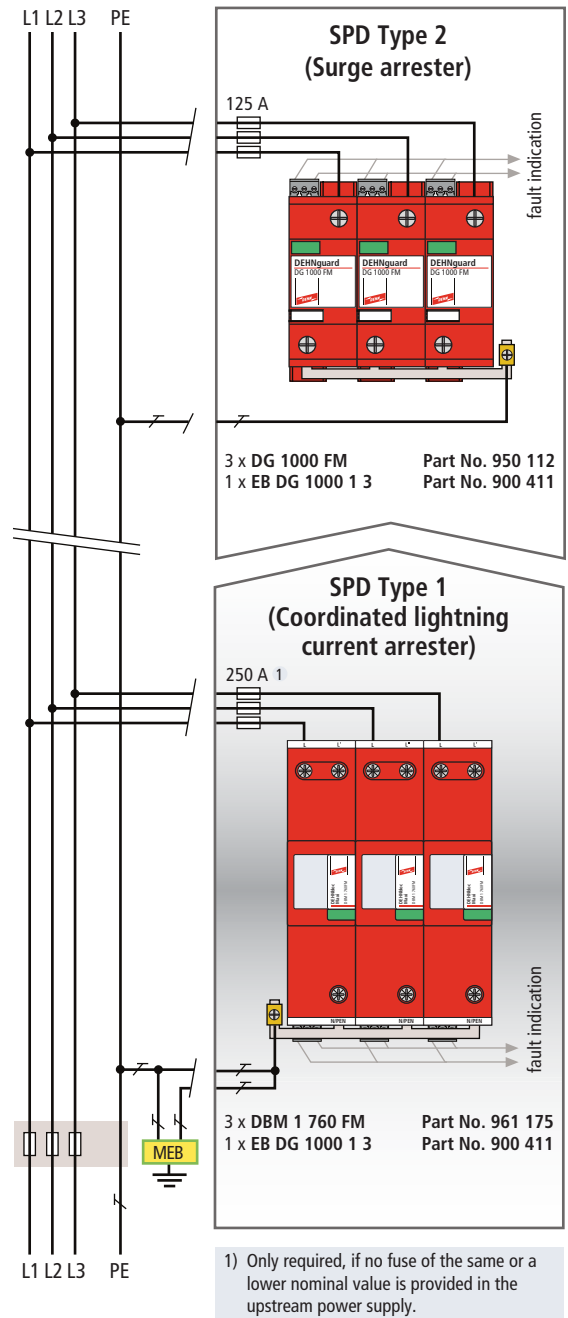
Sub-distribution Board

Main Distribution Board

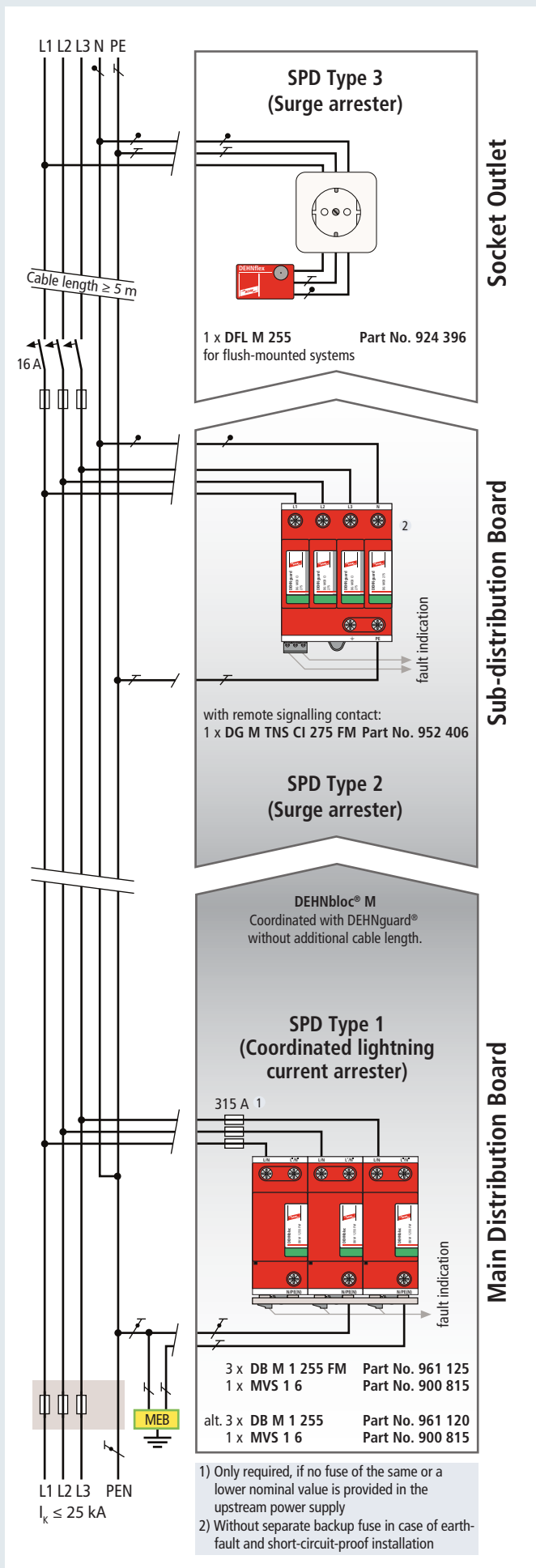
TT system: Example: Industrial building



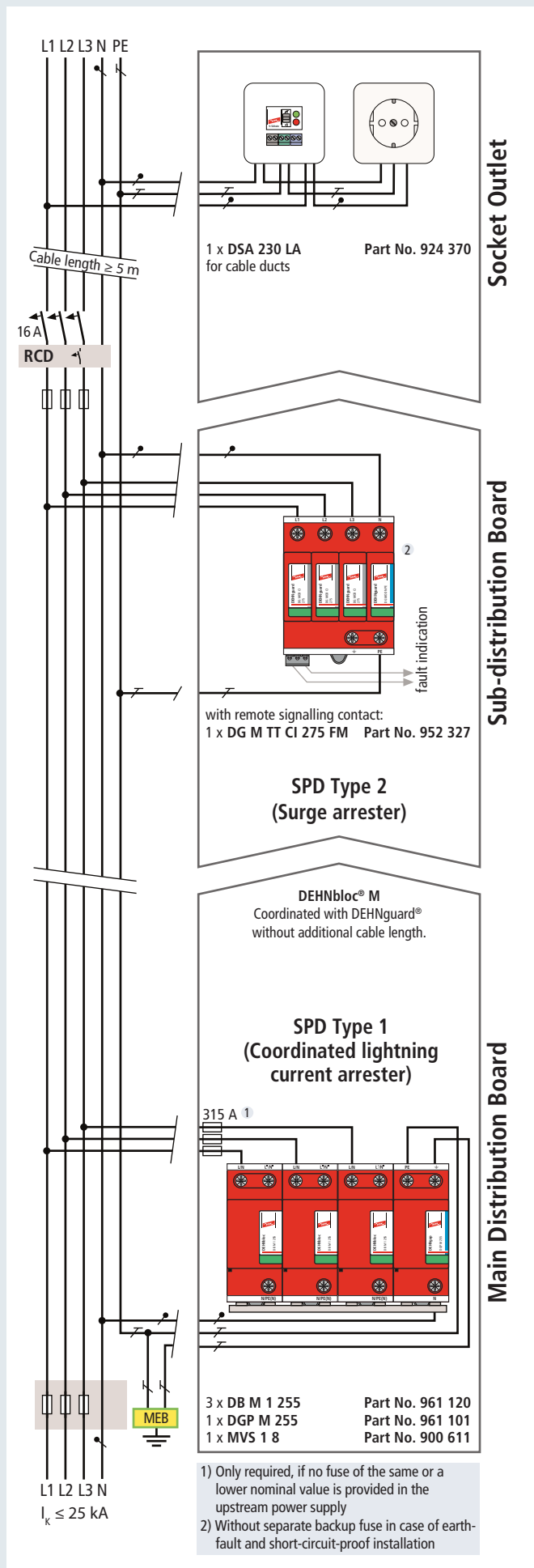
TN system: Industrial building TN-C 400/690 V



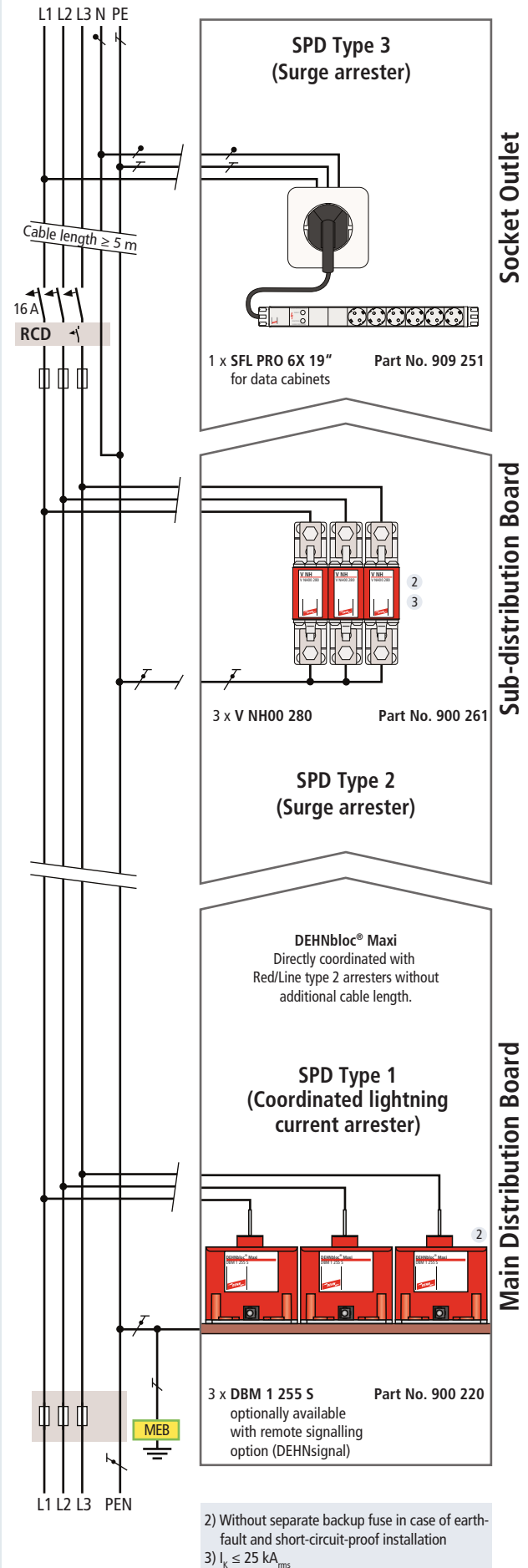
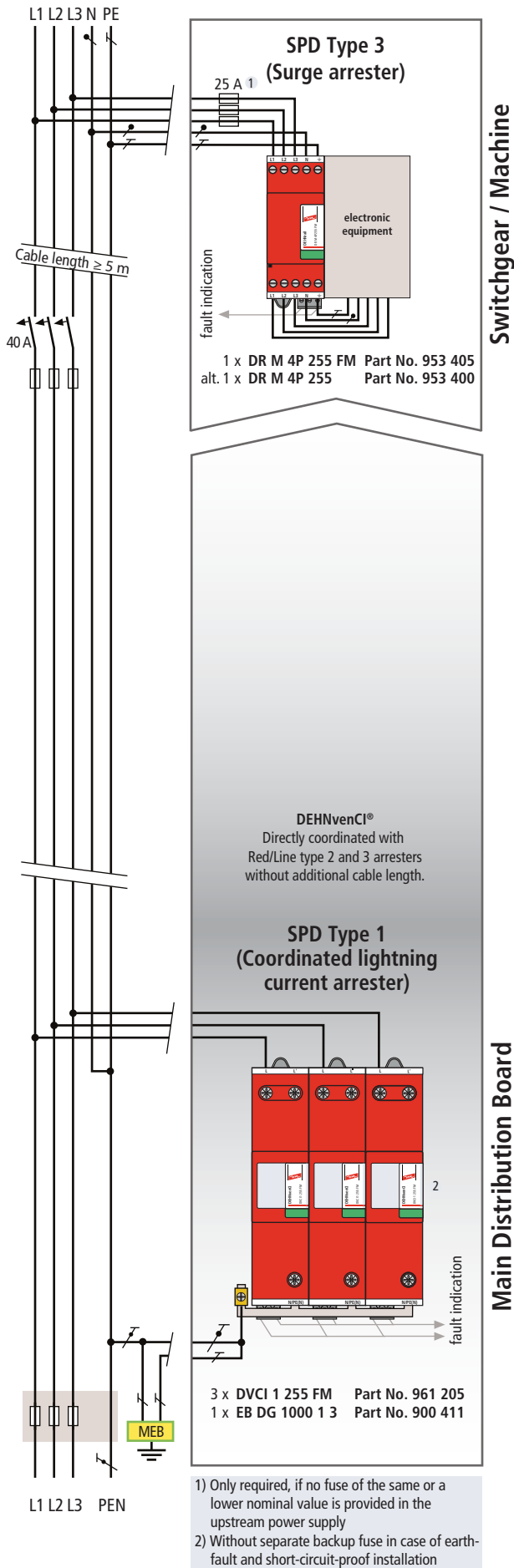
IT system: Industrial building IT 690 V, without integrated neutral conductor



TN system



TT system

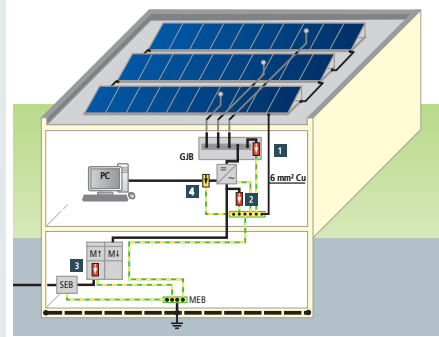


TN system: Use of type 1 and 2 arresters with integrated backup fuse in an industrial building

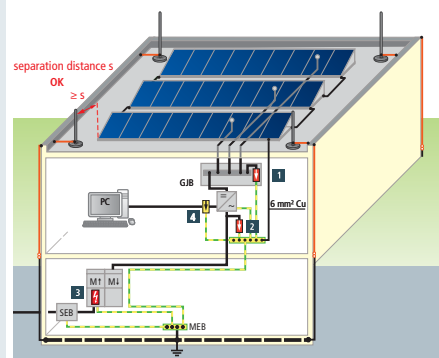
Place of installation of the surge protective devices



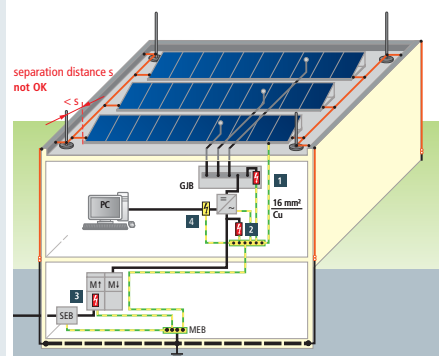
a) Building without external lightning protection



b) Building with external lightning protection and sufficient separation distance



c) Building with external lightning protection and insufficient separation distance



Equipotential bonding

For lightning and surge protection reasons, it is strongly recommended to connect the PV frame as follows to the equipotential bonding system:

- Defined connection with at least 6 mm² copper at the PV frame (a + b).
- Defined connection with at least 16 mm² copper at the PV frame (c).
- Electrically conductive connection of the PV frames has to be ensured.
- The earth conductor is connected to the main earthing busbar of the building on ground level.
- The earth conductor has to be installed in parallel and in close proximity to the d.c. and a.c. cables / lines and accessory.

Note:

For more detailed information on lightning and surge protection measures for photovoltaic systems, please refer to our brochure DS109 and application proposal No. 11 at www.dehn.de.

1 d.c. side

Type 2 arrester DEHNgard M YPV SCI ... FM

Multipole, modular surge arrester for PV systems: The patented SCI technology prevents fire damage caused by d.c. switching arcs

Type	Part No.	U _{CPV}
DG M YPV SCI 150 FM	952 518	150 V
DG M YPV SCI 600 FM	952 516	600 V
DG M YPV SCI 1000 FM	952 515	1000 V
DG M YPV SCI 1200 FM	952 517	1200 V

a)



b)

2 a.c. side (inverter)

Type 2 arrester DEHNgard M ... 275 FM

Multipole, modular surge arrester: High reliability due to "Thermo Dynamic Control" monitoring device

Type	Part No.	U _N
DG M TNC 275 FM	952 305	230/400 V
DG M TNS 275 FM	952 405	230/400 V
DG M TT 275 FM	952 315	230/400 V

a)



b)

3 a.c. side (power supply)

Type 2 arrester DEHNgard M ... CI 275 FM

Multipole, modular surge arrester with integrated backup fuse: High reliability due to "Thermo Dynamic Control" monitoring device

Type	Part No.	U _N
DG M TNC CI 275 FM	952 309	230/400 V
DG M TNS CI 275 FM	952 406	230/400 V
DG M TT CI 275 FM	952 327	230/400 V

a)



Type 1 combined lightning current and surge arrester DEHNlimit PV 1000 V2 FM

Multipole spark-gap-based combined lightning current and surge arrester for PV generator circuits with wave breaker function

Type	Part No.	U _{CPV}
DLM PV 1000 V2 FM	900 345	1000 V

c)



Type 1 application-optimised combined lightning current and surge arrester DEHNshield ... 255

Multipole spark-gap-based combined lightning current and surge arrester with impulse current parameters which are sufficient for this place of installation

Type	Part No.	U _N
DSH TNC 255	941 300	230/400 V
DSH TNS 255	941 400	230/400 V
DSH TT 255	941 310	230/400 V

c)



Type 1 combined lightning current and surge arrester DEHNventil M ... 255 FM

Multipole spark-gap-based combined lightning current and surge arrester capable of carrying lightning currents with wave breaker function

Type	Part No.	U _N
DV M TNC 255 FM	951 305	230/400 V
DV M TNS 255 FM	951 405	230/400 V
DV M TT 255 FM	951 315	230/400 V

b)

c)



4 Data interface



BLITZDUCTOR XTU combined lightning current and surge arrester

DIN rail mounted combined lightning current and surge arrester with actiVsense and LifeCheck technology for protecting two pairs of balanced interfaces (for example RS485) (BXT BAS base part required, Part No. 920 300)

Type	Part No.	U _C
BXTU ML4 BD 0-180	920 349	180 V

Old / discontinued products		Alternatives	
Part No.	Type	Part No.	Type
Combined SPDs – Type 1			
900 370	DV 2P TT 255	951 110 951 115	DV M TT 2P 255 DV M TT 2P 255 FM
900 371	DV 2P TN 255	951 200 951 205	DV M TN 255 DV M TN 255 FM
900 373	DV TNC 255	951 300 951 305	DV M TNC 255 DV M TNC 255 FM
900 374	DV TNS 255	951 400 951 405	DV M TNS 255 DV M TNS 255 FM
900 375	DV TT 255	951 310 951 315	DV M TT 255 DV M TT 255 FM

Coordinated Lightning Current Arresters – Type 1			
900 015	DBM 1 135	961 110 961 115	DB M 1 150 DB M 1 150 FM
900 016	DBM 1 320	961 130 961 135	DB M 1 320 DB M 1 320 FM
900 025	DBM 1 255	961 120	DB M 1 255
900 026	DBM 1 255 L	961 125	DB M 1 255 FM
900 044	DBM 440	961 140 961 145	DBM 1 440 DBM 1 440 FM
900 055	DGPM 255	961 101 961 105	DGP M 255 DGP M 255 FM

Lightning Current Arresters – Type 1			
900 110	DB 3 255	900 120	DB 3 255 H
900 111	DB 1 255	900 222	DB 1 255 H
900 132	DGP BN 255	961 102	DGPH M 255
900 159	DB 1 440	961 140 961 145	DBM 1 440 DBM 1 440 FM
900 269	DGP B NH00 N 255	—	—
900 273	DB NH00 255 H	900 255	DBM NH00 255

Surge Arresters – Type 2			
900 133	DGP C T 255	952 030 952 035	DGP C S DGP C S FM
900 506	DG TN 230	952 200	DG M TN 275
900 507	DG TN 230 FM	952 205	DG M TN 275 FM
900 508	DG TT 230	952 110	DG M TT 2P 275
900 509	DG TT 230 FM	952 115	DG M TT 2P 275 FM
900 510	DG TNC 230 400	952 300	DG M TNC 275
900 516	DG IT 500	952 302	DG M WE 600
900 517	DG Y PV 1000	952 510 952 511	DG M YPV SCI 1000 DG M YPV SCI 600
900 520	DG TT 230 400	952 310	DG M TT 275
900 530	DG TNS 230 400	952 400	DG M TNS 275
900 540	DG TNC 230 400 FM	952 305	DG M TNC 275 FM
900 546	DG IT 500 FM	952 307	DG M WE 600 FM
900 547	DG Y PV 1000 FM	952 515 952 516	DG M YPV SCI 1000 FM DG M YPV SCI 600 FM
900 550	DG TT 230 400 FM	952 315	DG M TT 275 FM
900 560	DG TNS 230 400 FM	952 405	DG M TNS 275 FM
900 600	DG 275	952 070	DG S 275
900 601	DG 600	952 076	DG S 600
900 602	DG 385	952 074	DG S 385
900 603	DG 150	952 072	DG S 150
900 604	DG 75	952 071	DG S 75
900 605	DG 320	952 073	DG S 320
900 607	DG 440	952 075	DG S 440
900 620	DG 275 FM	952 090	DG S 275 FM
900 621	DG 600 FM	952 096	DG S 600 FM
900 622	DG 385 FM	952 094	DG S 385 FM
900 623	DG 150 FM	952 092	DG S 150 FM
900 624	DG 75 FM	952 091	DG S 75 FM
900 625	DG 320 FM	952 093	DG S 320 FM
900 627	DG 440 FM	952 095	DG S 440 FM
900 641	DG T 385	952 074	DG S 385

Old / discontinued products		Alternatives	
Part No.	Type	Part No.	Type
900 650	DG T 275	952 070	DG S 275
900 651	DG T 600	952 076	DG S 600
900 652	DG T 320	952 073	DG S 320
900 653	DG T 150	952 072	DG S 150
900 654	DG T 75	952 071	DG S 75
900 655	DG T 440	952 075	DG S 440
900 659	DG T 275 VA	952 082	DG S 275 VA
900 667	DG T 75 VA	952 080	DG S 75 VA
900 680	DG T 275 FM	952 090	DG S 275 FM
900 681	DG T 600 FM	952 096	DG S 600 FM
900 682	DG T 320 FM	952 093	DG S 320 FM
900 683	DG T 150 FM	952 092	DG S 150 FM
900 684	DG T 75 FM	952 091	DG S 75 FM
900 685	DG T 440 FM	952 095	DG S 440 FM
900 689	DG T 275 VA FM	952 087	DG S 275 VA FM
900 691	DG T 385 FM	952 094	DG S 385 FM
900 692	DG T 75 VA FM	952 085	DG S 75 VA FM
901 000	VAV 1000	950 102 950 112	DG 1000 DG 1000 FM
950 120	DG T H 275 LI	—	—
950 121	DG T H 385 LI	—	—
950 150	DG TT H 230 400 LI	—	—
950 151	DG TT H230 400 LI385	—	—
950 160	DG TNC H230 400 LI	—	—
950 170	DG TNS H230 400 LI	—	—
950 220	DG T 48	952 078	DG S 48
950 225	DG T 48 FM	952 098	DG S 48 FM
950 500 (2x)	DG PV 500 SCP	952 510 952 511	DG M YPV SCI 1000 DG M YPV SCI 600 (Observe PV voltage)
950 501 (2x)	DG PV 700 SCP	952 510	DG M YPV SCI 1000
950 502 (2x)	DG PV 1200 SCP	952 512	DG M YPV SCI 1200
950 505 (2x)	DG PV 500 SCP FM	952 515 952 516	DG M YPV SCI 1000 FM DG M YPV SCI 600 FM (Observe PV voltage)
950 506 (2x)	DG PV 700 SCP FM	952 515	DG M YPV SCI 1000 FM
950 507 (2x)	DG PV 1200 SCP FM	952 517	DG M YPV SCI 1200 FM

Surge Arresters – Type 3			
901 100	DR 230 FML	953 205 953 200	DR M 2P 255 FM DR M 2P 255
901 101	DR 120 FML	953 209 953 204	DR M 2P 150 FM DR M 2P 150
901 102	DR 60 FML	953 208 953 203	DR M 2P 75 FM DR M 2P 75
901 103	DR 48 FML	953 207 953 202	DR M 2P 60 FM DR M 2P 60
901 104	DR 24 FML	953 206 953 201	DR M 2P 30 FM DR M 2P 30
901 130	DR 230 3N FML	953 405 953 400	DR M 4P 255 FM DR M 4P 255
909 820	SF PRO	909 240	DPRO 230 F
909 821	S PRO	909 230	DPRO 230
912 260	SFL PRO	909 250	SFL PRO 6X

Accessories			
900 309	IGA 10 IP54	902 315	IGA 10 V2 IP54
902 480	IGA 10 IP55	902 315	IGA 10 V2 IP54
900 121	DBR 35	—	—
900 122	DBR 63	—	—
900 699	DK 35	952 699	DK 25

Isolating Spark Gaps			
923 070	EXFS C1	923 100	EXFS 100
923 071	EXFS C1 KU	923 101	EXFS 100 KU

- Prewired spark-gap-based combined lightning current and surge arrester consisting of a base part and plug-in protection modules
- Maximum system availability due to RADAX Flow follow current limitation
- No tripping of 20 A gL/gG fuses up to short-circuit currents of 50 kA_{rms}
- Discharge capacity up to 100 kA (10/350 μs)
- Capable of protecting terminal equipment
- Operating state/fault indication by indicator flag in the inspection window
- Easy replacement of protection modules without tools due to module locking system with module release button
- Vibration and shock-tested acc. to EN 60068-2



- DEHNventil M TNC 255: Modular combined lightning current and surge arrester for use in TN-C systems
 DEHNventil M TNS 255: Modular combined lightning current and surge arrester for use in TN-S systems
 DEHNventil M TT 255: Modular combined lightning current and surge arrester for use in TT and TN-S systems ("3+1" circuit)
 DEHNventil M TN 255: Modular combined lightning current and surge arrester for use in single-phase TN systems
 DEHNventil M TT 2P 255: Modular combined lightning current and surge arrester for use in single-phase TT and TN systems ("1+1" circuit)
 DEHNventil M ... FM: With remote signalling contact for monitoring device (floating changeover contact)

With their functional Red/Line design, the devices of the modular DEHNventil family provide a combination of safety and innovation. Designed for "all-in-one installation", the arresters integrate lightning equipotential bonding and surge protection in a single device, making them ideal for use in compact electrical installations. The energy coordinated arresters even allow to protect terminal equipment if the distance between DEHNventil and the consumers is ≤ 5 m. With a lightning current discharge capacity up to 100,000 A, the arresters ensure a high degree of availability of the electrical installation to be protected. Even in large-scale electrical installations, the modular DEHNventil arresters provide various application benefits. The Red/Line surge arresters installed at the boundaries of the individual lightning protection zones, for example, are already energy-coordinated with the DEHNventil arresters. DEHNventil arresters can be easily integrated into switchgear installations or distribution boards due to their encapsulated creepage discharge spark gaps and compact dimensions. A special feature of the modular DEHNventil family is its functional design, in particular the module release button. It fixes the protection module firmly in place so that it is safely connected to the base part even

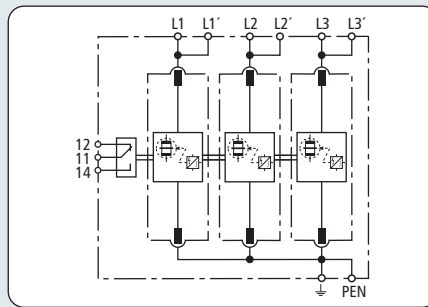


For protecting low-voltage consumer's installations against surges and even direct lightning strikes. For installation in conformity with the lightning protection zones concept at the boundaries from $O_A - 2$.

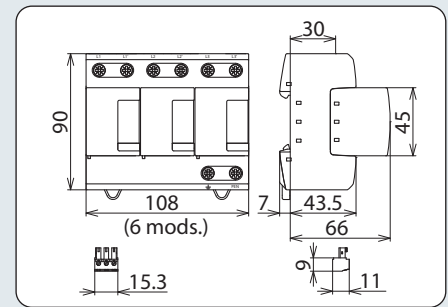
with maximum loads. Protection modules can be easily replaced without tools by pressing the module release button and removing the protection module. By using the double terminals suitable for all conductors, the arresters can be connected in series in a space-saving and cost-effective way according to IEC 60364-5-53 requirements for nominal currents up to 125 A. Busbars of type MVS 3 8 6 and MVS 4 11 8 can be used for connecting further DIN rail mounted devices. The type designation of DEHNventil arresters allows to easily choose the right arrester for the relevant system configuration of the low-voltage consumer's installation.

The patented RADAX Flow technology ensures follow current limitation and extinction as well as maximum system availability of the electrical installation to be protected. Even in case of short-circuit currents as high as 50 kA_{rms}, mains follow currents are reduced in such a way that selectivity is ensured for low-value fuses. This means that upstream fuses are not tripped by mains follow currents.

The operating state/fault indication of each protective circuit immediately indicates the operating state of the surge arrester even if no operating current is present. Apart from the standard visual indication with green and red flags, DEHNventil M ... FM devices feature a three-pole remote signalling terminal. With its floating changeover contact, the remote signal can be used as a break or make contact according to the particular circuit concept.



Basic circuit diagram DV M TNC 255 FM



Dimension drawing DV M TNC 255 (FM)

- Prewired spark-gap-based combined lightning current and surge arrester consisting of a base part and plug-in protection modules
- Maximum system availability due to RADAX Flow follow current limitation
- Capable of protecting terminal equipment

Modular combined lightning current and surge arrester for protecting TN-C systems against surges

Type	DV M TNC 255	DV M TNC 255 FM
Part No.	951 300	951 305
SPD according to EN 61643-11 / IEC 61643-1/-11	Type 1 / Class I	Type 1 / Class I
Energy coordination with terminal equipment	Type 1 + Type 2	Type 1 + Type 2
Energy coordination with terminal equipment (≤ 5m)	Type 1 + Type 2 + Type 3	Type 1 + Type 2 + Type 3
Nominal a.c. voltage (U _N)	230 / 400 V	230 / 400 V
Max. continuous operating a.c. voltage (U _C)	255 V	255 V
Lightning impulse current (10/350 μs) [L1+L2+L3-PEN] (I _{total})	75 kA	75 kA
Specific energy [L1+L2+L3-PEN] (W/R)	1.40 MJ/ohms	1.40 MJ/ohms
Lightning impulse current (10/350 μs) [L-PEN] (I _{imp})	25 kA	25 kA
Specific energy [L-PEN] (W/R)	156.25 kJ/ohms	156.25 kJ/ohms
Nominal discharge current (8/20 μs) (I _n)	25 / 75 kA	25 / 75 kA
Voltage protection level (U _p)	≤ 1.5 kV	≤ 1.5 kV
Follow current extinguishing capability a.c. (I _f)	50 kA _{rms}	50 kA _{rms}
Follow current limitation/Selectivity	no tripping of a 20 A gL/gG fuse up to 50 kA _{rms} (prosp.)	no tripping of a 20 A gL/gG fuse up to 50 kA _{rms} (prosp.)
Response time (t _a)	≤ 100 ns	≤ 100 ns
Max. backup fuse (L) up to I _k = 50 kA _{rms}	315 A gL/gG	315 A gL/gG
Max. backup fuse (L) for I _k > 50 kA _{rms}	200 A gL/gG	200 A gL/gG
Max. backup fuse (L-L')	125 A gL/gG	125 A gL/gG
Temporary overvoltage (TOV) (U _T)	440 V / 5 sec.	440 V / 5 sec.
TOV characteristics	withstand	withstand
Operating temperature range [parallel]/[series] (T _U)	-40°C...+80°C / -40°C...+60°C	-40°C...+80°C / -40°C...+60°C
Operating state/fault indication	green / red	green / red
Number of ports	1	1
Cross-sectional area (L1, L1', L2, L2', L3, L3', PEN, ≍) (min.)	10 mm ² solid/flexible	10 mm ² solid/flexible
Cross-sectional area (L1, L2, L3, PEN) (max.)	50 mm ² stranded/35 mm ² flexible	50 mm ² stranded/35 mm ² flexible
Cross-sectional area (L1', L2', L3', ≍) (max.)	35 mm ² stranded/25 mm ² flexible	35 mm ² stranded/25 mm ² flexible
For mounting on	35 mm DIN rail acc. to EN 60715	35 mm DIN rail acc. to EN 60715
Enclosure material	thermoplastic, red, UL 94 V-0	thermoplastic, red, UL 94 V-0
Place of installation	indoor installation	indoor installation
Degree of protection	IP 20	IP 20
Capacity	6 modules, DIN 43880	6 modules, DIN 43880
Approvals	KEMA, VDE, UL, VdS	KEMA, VDE, UL, VdS
Type of remote signalling contact	—	changeover contact
a.c. switching capacity	—	250 V/0.5 A
d.c. switching capacity	—	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A
Cross-sectional area for remote signalling terminals	—	max. 1.5 mm ² solid/flexible

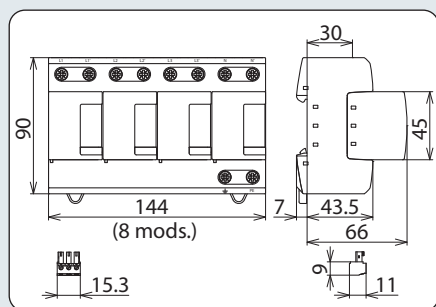
Accessory for DEHNventil® modular

Spark-Gap-Based Protection Module

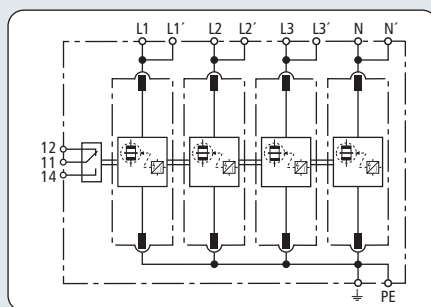
Spark-gap-based protection module



Type	DV MOD 255
Part No.	951 001
Max. continuous operating a.c. voltage (U _C)	255 V



Dimension drawing DV M TNS 255 (FM)



Basic circuit diagram DV M TNS 255 FM



- Prewired spark-gap-based combined lightning current and surge arrester consisting of a base part and plug-in protection modules
- Maximum system availability due to RADAX Flow follow current limitation
- Capable of protecting terminal equipment

Modular combined lightning current and surge arrester for protecting TN-S systems against surges

Type	DV M TNS 255	DV M TNS 255 FM
Part No.	951 400	951 405
SPD according to EN 61643-11 / IEC 61643-1/-11	Type 1 / Class I	Type 1 / Class I
Energy coordination with terminal equipment	Type 1 + Type 2	Type 1 + Type 2
Energy coordination with terminal equipment (≤ 5m)	Type 1 + Type 2 + Type 3	Type 1 + Type 2 + Type 3
Nominal a.c. voltage (U _N)	230 / 400 V	230 / 400 V
Max. continuous operating a.c. voltage (U _C)	255 V	255 V
Lightning impulse current (10/350 μs) [L1+L2+L3+N-PE] (I _{total})	100 kA	100 kA
Specific energy [L1+L2+L3+N-PE] (W/R)	2.50 MJ/ohms	2.50 MJ/ohms
Lightning impulse current (10/350 μs) [L, N-PE] (I _{imp})	25 kA	25 kA
Specific energy [L, N-PE] (W/R)	156.25 kJ/ohms	156.25 kJ/ohms
Nominal discharge current (8/20 μs) (I _n)	25 / 100 kA	25 / 100 kA
Voltage protection level [L-PE]/[N-PE] (U _p)	≤ 1.5 kV / ≤ 1.5 kV	≤ 1.5 kV / ≤ 1.5 kV
Follow current extinguishing capability a.c. (I _f)	50 kA _{rms}	50 kA _{rms}
Follow current limitation/Selectivity	no tripping of a 20 A gL/gG fuse up to 50 kA _{rms} (prosp.)	no tripping of a 20 A gL/gG fuse up to 50 kA _{rms} (prosp.)
Response time (t _A)	≤ 100 ns	≤ 100 ns
Max. backup fuse (L) up to I _k = 50 kA _{rms}	315 A gL/gG	315 A gL/gG
Max. backup fuse (L) for I _k > 50 kA _{rms}	200 A gL/gG	200 A gL/gG
Max. backup fuse (L-L')	125 A gL/gG	125 A gL/gG
Temporary overvoltage (TOV) [L-N] (U _T)	440 V / 5 sec.	440 V / 5 sec.
TOV characteristics	withstand	withstand
Operating temperature range [parallel]/[series] (T _U)	-40°C...+80°C / -40°C...+60°C	-40°C...+80°C / -40°C...+60°C
Operating state/fault indication	green / red	green / red
Number of ports	1	1
Cross-sectional area (L1, L1', L2, L2', L3, L3', N, N', PE, ⚡) (min.)	10 mm ² solid/flexible	10 mm ² solid/flexible
Cross-sectional area (L1, L2, L3, N, PE) (max.)	50 mm ² stranded/35 mm ² flexible	50 mm ² stranded/35 mm ² flexible
Cross-sectional area (L1', L2', L3', N', ⚡) (max.)	35 mm ² stranded/25 mm ² flexible	35 mm ² stranded/25 mm ² flexible
For mounting on	35 mm DIN rail acc. to EN 60715	35 mm DIN rail acc. to EN 60715
Enclosure material	thermoplastic, red, UL 94 V-0	thermoplastic, red, UL 94 V-0
Place of installation	indoor installation	indoor installation
Degree of protection	IP 20	IP 20
Capacity	8 modules, DIN 43880	8 modules, DIN 43880
Approvals	KEMA, VDE, UL, VdS	KEMA, VDE, UL, VdS
Type of remote signalling contact	—	changeover contact
a.c. switching capacity	—	250 V/0.5 A
d.c. switching capacity	—	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A
Cross-sectional area for remote signalling terminals	—	max. 1.5 mm ² solid/flexible

Accessory for DEHNventil® modular

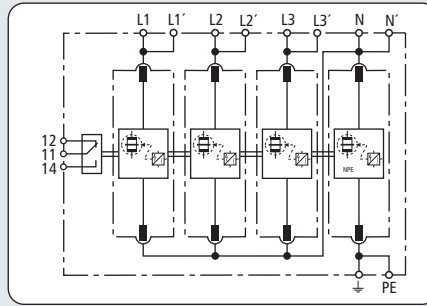
Spark-Gap-Based Protection Module

Spark-gap-based protection module

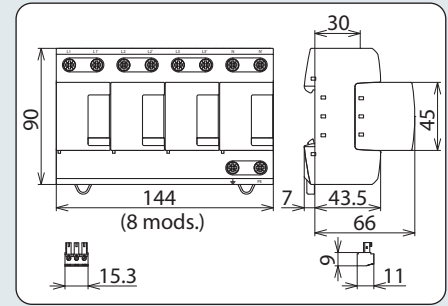
Type	DV MOD 255
Part No.	951 001
Max. continuous operating a.c. voltage (U _C)	255 V



Combined SPDs Type 1



Basic circuit diagram DV M TT 255 FM



Dimension drawing DV M TT 255 (FM)

- Prewired spark-gap-based combined lightning current and surge arrester consisting of a base part and plug-in protection modules
- Maximum system availability due to RADAX Flow follow current limitation
- Capable of protecting terminal equipment

Modular combined lightning current and surge arrester for protecting TT and TN-S systems ("3+1" circuit) against surges

Type	DV M TT 255	DV M TT 255 FM
Part No.	951 310	951 315
SPD according to EN 61643-11 / IEC 61643-1/-11	Type 1 / Class I	Type 1 / Class I
Energy coordination with terminal equipment	Type 1 + Type 2	Type 1 + Type 2
Energy coordination with terminal equipment (≤ 5m)	Type 1 + Type 2 + Type 3	Type 1 + Type 2 + Type 3
Nominal a.c. voltage (U _N)	230 / 400 V	230 / 400 V
Max. continuous operating a.c. voltage (U _C)	255 V	255 V
Lightning impulse current (10/350 μs) [L1+L2+L3+N-PE] (I _{total})	100 kA	100 kA
Specific energy [L1+L2+L3+N-PE] (W/R)	2.50 MJ/ohms	2.50 MJ/ohms
Lightning impulse current (10/350 μs) [L-N]/[N-PE] (I _{imp})	25 / 100 kA	25 / 100 kA
Specific energy [L-N]/[N-PE] (W/R)	156.25 kJ/ohms / 2.50 MJ/ohms	156.25 kJ/ohms / 2.50 MJ/ohms
Nominal discharge current (8/20 μs) (I _n)	25 / 100 kA	25 / 100 kA
Voltage protection level [L-N]/[N-PE] (U _P)	≤ 1.5 kV / ≤ 1.5 kV	≤ 1.5 kV / ≤ 1.5 kV
Follow current extinguishing capability [L-N]/[N-PE] (I _f)	50 kA _{rms} / 100 A _{rms}	50 kA _{rms} / 100 A _{rms}
Follow current limitation/Selectivity	no tripping of a 20 A gL/gG fuse up to 50 kA _{rms} (prosp.)	no tripping of a 20 A gL/gG fuse up to 50 kA _{rms} (prosp.)
Response time (t _a)	≤ 100 ns	≤ 100 ns
Max. backup fuse (L) up to I _k = 50 kA _{rms}	315 A gL/gG	315 A gL/gG
Max. backup fuse (L) for I _k > 50 kA _{rms}	200 A gL/gG	200 A gL/gG
Max. backup fuse (L-L')	125 A gL/gG	125 A gL/gG
Temporary overvoltage (TOV) [L-N] (U _T)	440 V / 5 sec.	440 V / 5 sec.
Temporary overvoltage (TOV) [N-PE] (U _T)	1200 V / 200 ms	1200 V / 200 ms
TOV characteristics	withstand	withstand
Operating temperature range [parallel]/[series] (T _U)	-40°C...+80°C / -40°C...+60°C	-40°C...+80°C / -40°C...+60°C
Operating state/fault indication	green / red	green / red
Number of ports	1	1
Cross-sectional area (L1, L1', L2, L2', L3, L3', N, N', PE, ⊥) (min.)	10 mm ² solid/flexible	10 mm ² solid/flexible
Cross-sectional area (L1, L2, L3, N, PE) (max.)	50 mm ² stranded/35 mm ² flexible	50 mm ² stranded/35 mm ² flexible
Cross-sectional area (L1', L2', L3', N', ⊥) (max.)	35 mm ² stranded/25 mm ² flexible	35 mm ² stranded/25 mm ² flexible
For mounting on	35 mm DIN rail acc. to EN 60715	35 mm DIN rail acc. to EN 60715
Enclosure material	thermoplastic, red, UL 94 V-0	thermoplastic, red, UL 94 V-0
Place of installation	indoor installation	indoor installation
Degree of protection	IP 20	IP 20
Capacity	8 modules, DIN 43880	8 modules, DIN 43880
Approvals	KEMA, VDE, UL, VdS	KEMA, VDE, UL, VdS
Type of remote signalling contact	—	changeover contact
a.c. switching capacity	—	250 V/0.5 A
d.c. switching capacity	—	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A
Cross-sectional area for remote signalling terminals	—	max. 1.5 mm ² solid/flexible

Accessory for DEHNventil® modular

Spark-Gap-Based Protection Module

Spark-gap-based protection module



Type	DV MOD 255
Part No.	951 001
Max. continuous operating a.c. voltage (U _C)	255 V

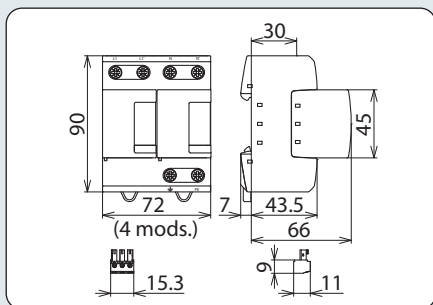
Accessory for DEHNventil® modular

N-PE Spark-Gap-Base Protection Module

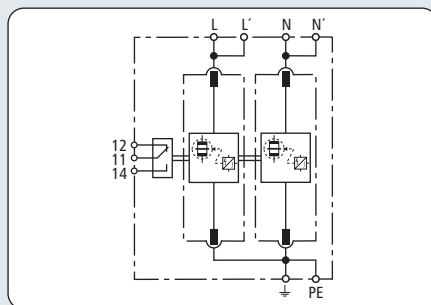
100 kA N-PE spark-gap-base protection module



Type	DV MOD NPE 100
Part No.	951 100
Max. continuous operating a.c. voltage (U _C)	255 V



Dimension drawing DV M TN 255 (FM)



Basic circuit diagram DV M TN 255 FM



Modular combined lightning current and surge arrester for protecting single-phase TN systems against surges

- Prewired spark-gap-based combined lightning current and surge arrester consisting of a base part and plug-in protection modules
- Maximum system availability due to RADAX Flow follow current limitation
- Capable of protecting terminal equipment

Type	DV M TN 255	DV M TN 255 FM
Part No.	951 200	951 205
SPD according to EN 61643-11 / IEC 61643-1/-11	Type 1 / Class I	Type 1 / Class I
Energy coordination with terminal equipment	Type 1 + Type 2	Type 1 + Type 2
Energy coordination with terminal equipment (≤ 5m)	Type 1 + Type 2 + Type 3	Type 1 + Type 2 + Type 3
Nominal a.c. voltage (U _N)	230 V	230 V
Max. continuous operating a.c. voltage (U _C)	255 V	255 V
Lightning impulse current (10/350 μs) [L+N-PE] (I _{total})	50 kA	50 kA
Specific energy [L+N-PE] (W/R)	625.00 kJ/ohms	625.00 kJ/ohms
Lightning impulse current (10/350 μs) [L, N-PE] (I _{imp})	25 kA	25 kA
Specific energy [L, N-PE] (W/R)	156.25 kJ/ohms	156.25 kJ/ohms
Nominal discharge current (8/20 μs) (I _n)	25 / 50 kA	25 / 50 kA
Voltage protection level [L-PE]/[N-PE] (U _p)	≤ 1.5 kV / ≤ 1.5 kV	≤ 1.5 kV / ≤ 1.5 kV
Follow current extinguishing capability a.c. (I _{fi})	50 kA _{rms}	50 kA _{rms}
Follow current limitation/Selectivity	no tripping of a 20 A gL/gG fuse up to 50 kA _{rms} (prosp.)	no tripping of a 20 A gL/gG fuse up to 50 kA _{rms} (prosp.)
Response time (t _d)	≤ 100 ns	≤ 100 ns
Max. backup fuse (L) up to I _k = 50 kA _{rms}	315 A gL/gG	315 A gL/gG
Max. backup fuse (L) for I _k > 50 kA _{rms}	200 A gL/gG	200 A gL/gG
Max. backup fuse (L-L')	125 A gL/gG	125 A gL/gG
Temporary overvoltage (TOV) [L-N] (U _T)	440 V / 5 sec.	440 V / 5 sec.
TOV characteristics	withstand	withstand
Operating temperature range [parallel]/[series] (T _U)	-40°C...+80°C / -40°C...+60°C	-40°C...+80°C / -40°C...+60°C
Operating state/fault indication	green / red	green / red
Number of ports	1	1
Cross-sectional area (L, L', N, N', PE, ⚡) (min.)	10 mm ² solid/flexible	10 mm ² solid/flexible
Cross-sectional area (L, N, PE) (max.)	50 mm ² stranded/35 mm ² flexible	50 mm ² stranded/35 mm ² flexible
Cross-sectional area (L', N', ⚡) (max.)	35 mm ² stranded/25 mm ² flexible	35 mm ² stranded/25 mm ² flexible
For mounting on	35 mm DIN rail acc. to EN 60715	35 mm DIN rail acc. to EN 60715
Enclosure material	thermoplastic, red, UL 94 V-0	thermoplastic, red, UL 94 V-0
Place of installation	indoor installation	indoor installation
Degree of protection	IP 20	IP 20
Capacity	4 modules, DIN 43880	4 modules, DIN 43880
Approvals	KEMA, VDE, UL, VdS	KEMA, VDE, UL, VdS
Type of remote signalling contact	—	changeover contact
a.c. switching capacity	—	250 V/0.5 A
d.c. switching capacity	—	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A
Cross-sectional area for remote signalling terminals	—	max. 1.5 mm ² solid/flexible

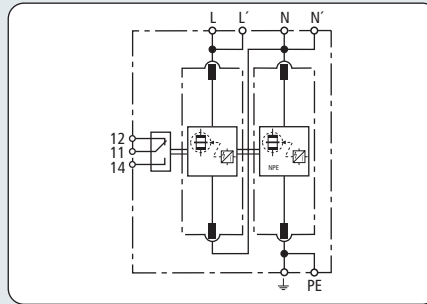
Accessory for DEHNventil® modular

Spark-Gap-Based Protection Module

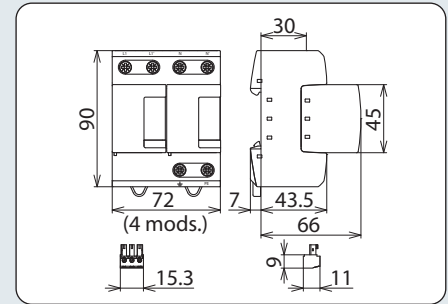
Spark-gap-based protection module

Type	DV MOD 255
Part No.	951 001
Max. continuous operating a.c. voltage (U _C)	255 V





Basic circuit diagram DV M TT 2P 255 FM



Dimension drawing DV M TT 2P 255 (FM)

- Prewired spark-gap-based combined lightning current and surge arrester consisting of a base part and plug-in protection modules
- Maximum system availability due to RADAX Flow follow current limitation
- Capable of protecting terminal equipment

Modular combined lightning current and surge arrester for protecting single-phase TT and TN systems ("1+1" circuit) against surges

Type	DV M TT 2P 255	DV M TT 2P 255 FM
Part No.	951 110	951 115
SPD according to EN 61643-11 / IEC 61643-1/-11	Type 1 / Class I	Type 1 / Class I
Energy coordination with terminal equipment	Type 1 + Type 2	Type 1 + Type 2
Energy coordination with terminal equipment (≤ 5m)	Type 1 + Type 2 + Type 3	Type 1 + Type 2 + Type 3
Nominal a.c. voltage (U _N)	230 V	230 V
Max. continuous operating a.c. voltage (U _C)	255 V	255 V
Lightning impulse current (10/350 μs) [L+N-PE] (I _{total})	50 kA	50 kA
Specific energy [L+N-PE] (W/R)	625.00 kJ/ohms	625.00 kJ/ohms
Lightning impulse current (10/350 μs) [L-N]/[N-PE] (I _{imp})	25 / 50 kA	25 / 50 kA
Specific energy [L-N]/[N-PE] (W/R)	156.25 kJ/ohms / 625.00 kJ/ohms	156.25 kJ/ohms / 625.00 kJ/ohms
Nominal discharge current (8/20 μs) (I _n)	25 / 50 kA	25 / 50 kA
Voltage protection level [L-N]/[N-PE] (U _p)	≤ 1.5 kV / ≤ 1.5 kV	≤ 1.5 kV / ≤ 1.5 kV
Follow current extinguishing capability [L-N]/[N-PE] (I _f)	50 kA _{rms} / 100 A _{rms}	50 kA _{rms} / 100 A _{rms}
Follow current limitation/Selectivity	no tripping of a 20 A gL/gG fuse up to 50 kA _{rms} (prosp.)	no tripping of a 20 A gL/gG fuse up to 50 kA _{rms} (prosp.)
Response time (t _a)	≤ 100 ns	≤ 100 ns
Max. backup fuse (L) up to I _k = 50 kA _{rms}	315 A gL/gG	315 A gL/gG
Max. backup fuse (L) for I _k > 50 kA _{rms}	200 A gL/gG	200 A gL/gG
Max. backup fuse (L-L')	125 A gL/gG	125 A gL/gG
Temporary overvoltage (TOV) [L-N] (U _T)	440 V / 5 sec.	440 V / 5 sec.
Temporary overvoltage (TOV) [N-PE] (U _T)	1200 V / 200 ms	1200 V / 200 ms
TOV characteristics	withstand	withstand
Operating temperature range [parallel]/[series] (T _U)	-40°C...+80°C / -40°C...+60°C	-40°C...+80°C / -40°C...+60°C
Operating state/fault indication	green / red	green / red
Number of ports	1	1
Cross-sectional area (L, L', N, N', PE, ⚡) (min.)	10 mm ² solid/flexible	10 mm ² solid/flexible
Cross-sectional area (L, N, PE) (max.)	50 mm ² stranded/35 mm ² flexible	50 mm ² stranded/35 mm ² flexible
Cross-sectional area (L', N', ⚡) (max.)	35 mm ² stranded/25 mm ² flexible	35 mm ² stranded/25 mm ² flexible
For mounting on	35 mm DIN rail acc. to EN 60715	35 mm DIN rail acc. to EN 60715
Enclosure material	thermoplastic, red, UL 94-V-0	thermoplastic, red, UL 94-V-0
Place of installation	indoor installation	indoor installation
Degree of protection	IP 20	IP 20
Capacity	4 modules, DIN 43880	4 modules, DIN 43880
Approvals	KEMA, VDE, UL, VdS	KEMA, VDE, UL, VdS
Type of remote signalling contact	—	changeover contact
a.c. switching capacity	—	250 V/0.5 A
d.c. switching capacity	—	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A
Cross-sectional area for remote signalling terminals	—	max. 1.5 mm ² solid/flexible

Accessory for DEHNventil® modular

Spark-Gap-Based Protection Module

Spark-gap-based protection module



Type	DV MOD 255
Part No.	951 001
Max. continuous operating a.c. voltage (U _C)	255 V

Accessory for DEHNventil® modular

N-PE Spark-Gap-Base Protection Module

50 kA N-PE spark-gap-based protection module



Type	DV MOD NPE 50
Part No.	951 050
Max. continuous operating a.c. voltage (U _C)	255 V

- High discharge capacity due to powerful cree-page discharge spark gap
- Maximum system availability due to RADAX Flow follow current limitation
- Replacement of protection modules without tools by means of module release button
- Operating state/fault indication by green/red indicator flag in the inspection window
- The plug-in protection module can be replaced without the need to de-energise and without removing the distribution board cover



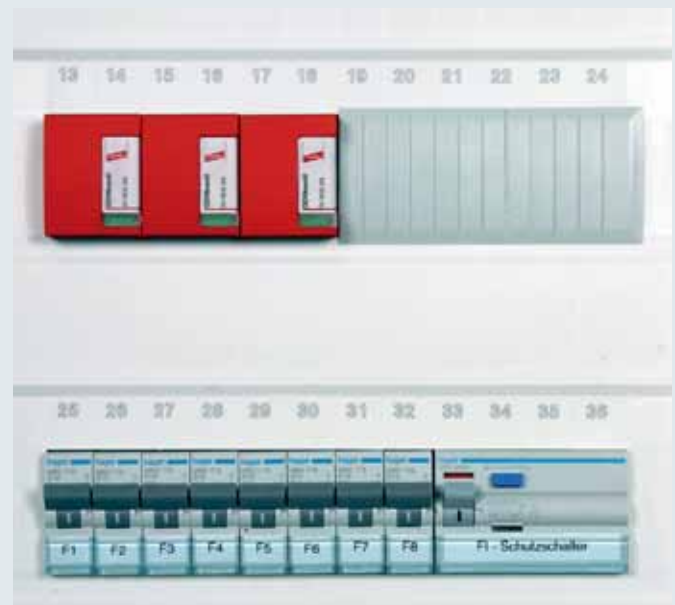
For protecting low-voltage consumer's installations against surges and even direct lightning strikes. For installation in conformity with the lightning protection zones concept at the boundaries from $O_A - 2$.

- DV MOD 255: Spark-gap-based protection module
 DV MOD NPE 50: 50 kA N-PE spark-gap-based protection module
 DV MOD NPE 100: 100 kA N-PE spark-gap-based protection module

The spark-gap-based protection modules of the modular DEHNventil series combine safety and innovation in a single device. Apart from the encapsulated RADAX Flow spark gap technology, the compact protection modules incorporate the complete monitoring circuit for controlling the energy flow of the spark gap, the monitoring device and the operating state/fault indicator.

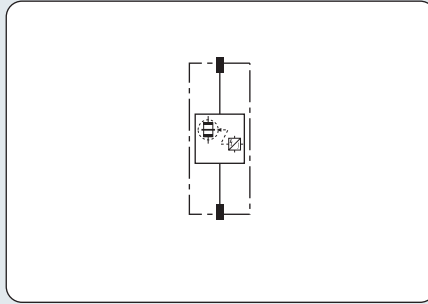
The mechanically coded protection module ensures that the N-PE protection modules are not confused with the spark-gap-based module for the phase conductors.

The module locking mechanism fixes the protection modules to the base part. Protection modules can be easily removed without tools by simply pressing the module release button.

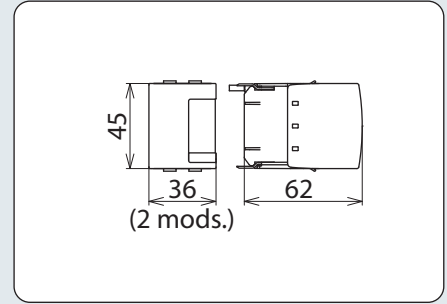


Spark-gap-based protection module

Combined SPDs – Type 1



Basic circuit diagram DV MOD 255



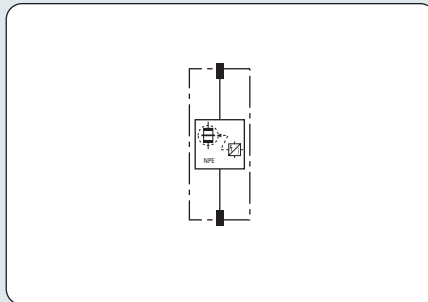
Dimension drawing DV MOD 255

Spark-gap-based protection module

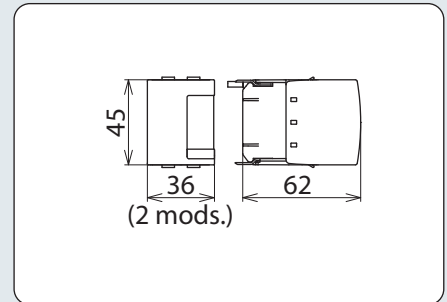
Type	DV MOD 255
Part No.	951 001
Max. continuous operating a.c. voltage (U_c)	255 V
Lightning impulse current (10/350 μ s) (I_{imp})	25 kA
Specific energy (W/R)	156.25 kJ/ohms
Follow current extinguishing capability [L-N] a.c. (I_{fl})	50 kA _{rms}
Follow current limitation/Selectivity	no tripping of a 20 A g/L/g fuse up to 50 kA _{rms} (prosp.)

Protection Module for DEHNventil® modular

N-PE spark-gap-based protection module



Basic circuit diagram DV MOD NPE ...



Dimension drawing DV MOD NPE ...

DV MOD NPE 50: 50 kA N-PE spark-gap-based protection module
 DV MOD NPE 100: 100 kA N-PE spark-gap-based protection module

Type	DV MOD NPE 50	DV MOD NPE 100
Part No.	951 050	951 100
Max. continuous operating a.c. voltage (U_c)	255 V	255 V
Lightning impulse current (10/350 μ s) (I_{imp})	50 kA	100 kA
Specific energy (W/R)	625.00 kJ/ohms	2.50 MJ/ohms
Follow current extinguishing capability [N-PE] a.c. (I_{fl})	100 A _{rms}	100 A _{rms}

- Combined lightning current and surge arrester based on RADAX Flow spark gap technology
- Fully compliant with all requirements of the national VDN* guideline on the use of SPDs upstream of the meter
- Quick and easy installation by snapping the arrester onto 40 mm busbar systems
- Test for correct operation by pressing the button with indicator light
- No tripping of 32 A gL/gG fuses up to short-circuit currents of 25 kA_{rms}
- Discharge capacity up to 100 kA (10/350 μs)
- Capable of protecting terminal equipment
- Maximum system availability



DEHNventil ZP TNC 255: Three-pole combined lightning current and surge arrester for TN-C systems for use in primary power systems

DEHNventil ZP TT 255: Four-pole combined lightning current and surge arrester for TT and TN-S systems for use in primary power systems

DEHNventil ZP combined lightning current and surge arresters are specifically designed for installation in busbar connection panels of meter panels. They can be directly snapped onto the busbar system without tools. Their compact dimensions leave enough space for the connecting cable from the service entrance box, even if three selective main circuit breakers are installed.

The operating state of the arresters is indicated by an indicator light at the push of a button. Both due to this kind of operating state indication and their design as a spark-gap-based arrester, DEHNventil ZP arresters have no leakage and operating currents.

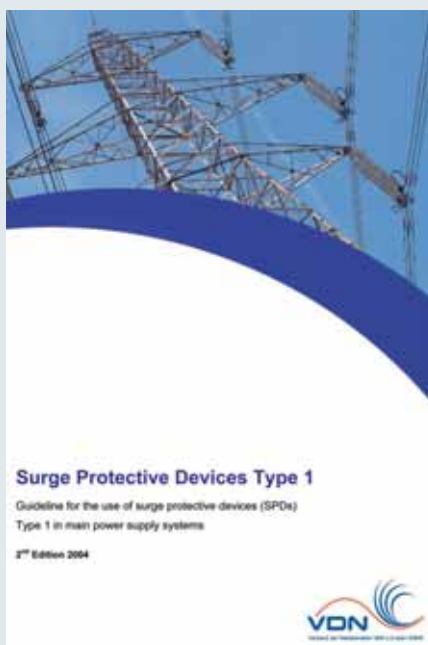
The RADAX Flow spark gap technology ensures the required selectivity for follow currents even in case of low-value fuses in the service entrance box. Undesirable supply interruptions due to tripped main fuses are thus avoided.

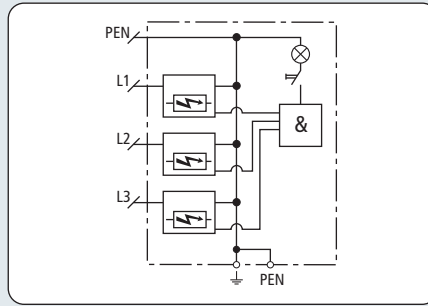
The dimensioning of the arrester parameters as well as the complete arrester concept are fully compliant with all requirements of the German VDN guideline* on the use of surge protective devices in primary power systems.

* VDN ... Verband der Netzbetreiber VDN e. V. beim BDEW
[Association of German Network Operators VDN e. V. at the BDEW in Germany]

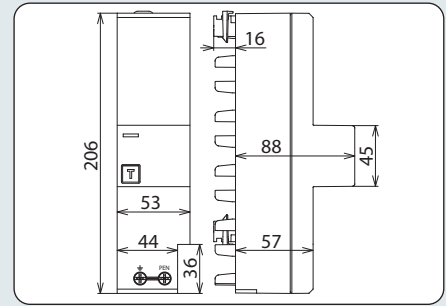


For protecting low-voltage consumer's installations against surges and even direct lightning strikes. For installation in conformity with the lightning protection zones concept at the boundaries from $O_A - 2$.





Basic circuit diagram DV ZP TNC 255

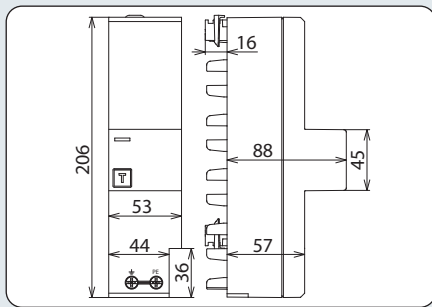


Dimension drawing DV ZP TNC 255

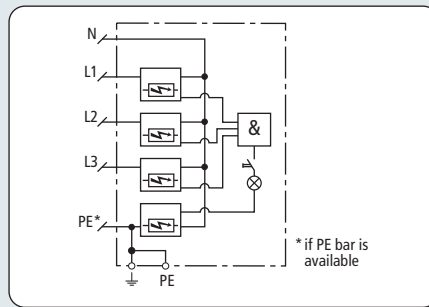
- Combined lightning current and surge arrester based on RADAX Flow spark gap technology
- Quick and easy installation by snapping the arrester onto 40 mm busbar systems
- Capable of protecting terminal equipment

Combined lightning current and surge arrester for TN-C systems for use in primary power systems ("3-0" circuit)

Type	DV ZP TNC 255
Part No.	900 390
SPD according to EN 61643-11	Type 1
SPD according to IEC 61643-1/-11	Class I
Energy coordination with terminal equipment	Type 1 + Type 2
Energy coordination with terminal equipment ($\leq 5\text{m}$)	Type 1 + Type 2 + Type 3
Nominal a.c. voltage (U_N)	230 / 400 V
Max. continuous operating a.c. voltage (U_C)	255 V
Lightning impulse current (10/350 μs) [L1+L2+L3-PEN] (I_{total})	75 kA
Specific energy [L1+L2+L3-PEN] (W/R)	1.40 MJ/ohms
Lightning impulse current (10/350 μs) [L-PEN] (I_{imp})	25 kA
Specific energy [L-PEN] (W/R)	156.25 kJ/ohms
Nominal discharge current (8/20 μs) (I_n)	25 / 75 kA
Voltage protection level (U_p)	≤ 1.5 kV
Follow current extinguishing capability a.c. (I_{fi})	25 kA _{rms}
Follow current limitation/Selectivity	no tripping of a 32 A gL/gG fuse up to 25 kA _{rms} (prosp.)
Response time (t_A)	≤ 100 ns
Max. backup fuse up to $I_k = 25$ kA _{rms}	315 A gL/gG
Max. backup fuse for $I_k > 25$ kA _{rms}	200 A gL/gG
Temporary overvoltage (TOV) (U_T)	335 V / 5 sec.
TOV characteristics	withstand
Operating temperature range (T_U)	-40°C...+80°C
Operating state indication	button with indicator light
Number of ports	1
Cross-sectional area (PEN, \pm)	10-35 mm ² flexible/50 mm ² stranded
For mounting on	40 mm busbar systems
Enclosure material	thermoplastic, red, UL 94 V-0
Place of installation	indoor installation
Degree of protection	IP 20
Capacity	3 modules, DIN 43880
Approvals	VDE



Dimension drawing DV ZP TT 255



Basic circuit diagram DV ZP TT 255



Combined lightning current and surge arrester for TT and TN-S systems for use in primary power systems ("3+1" circuit)

- Combined lightning current and surge arrester based on RADAX Flow spark gap technology
- Quick and easy installation by snapping the arrester onto 40 mm busbar systems
- Capable of protecting terminal equipment

Type	DV ZP TT 255
Part No.	900 391
SPD according to EN 61643-11	Type 1
SPD according to IEC 61643-1/-11	Class I
Energy coordination with terminal equipment	Type 1 + Type 2
Energy coordination with terminal equipment (≤ 5m)	Type 1 + Type 2 + Type 3
Nominal a.c. voltage (U _N)	230 / 400 V
Max. continuous operating a.c. voltage (U _C)	255 V
Lightning impulse current (10/350 μs) [L1+L2+L3+N-PE] (I _{imp})	100 kA
Specific energy [L1+L2+L3+N-PE] (W/R)	2.50 MJ/ohms
Lightning impulse current (10/350 μs) [L-N] (I _{imp})	25 kA
Specific energy [L-N] (W/R)	156.25 kJ/ohms
Lightning impulse current (10/350 μs) [N-PE] (I _{imp})	100 kA
Specific energy [N-PE] (W/R)	2.50 MJ/ohms
Nominal discharge current (8/20 μs) (I _n)	25 / 100 kA
Voltage protection level [L-N] (U _p)	≤ 1.5 kV
Voltage protection level [N-PE] (U _p)	≤ 1.5 kV
Follow current extinguishing capability [L-N] a.c. (I _{fl})	25 kA _{rms}
Follow current extinguishing capability [N-PE] a.c. (I _{fl})	100 A _{rms}
Follow current limitation/Selectivity	no tripping of a 32 A gL/gG fuse up to 25 kA _{rms} (prosp.)
Response time (t _d)	≤ 100 ns
Max. backup fuse up to I _k = 25 kA _{rms}	315 A gL/gG
Max. backup fuse for I _k > 25 kA _{rms}	200 A gL/gG
Temporary overvoltage (TOV) [L-N] (U _T)	335 V / 5 sec.
Temporary overvoltage (TOV) [N-PE] (U _T)	1200 V / 200 ms
TOV characteristics	withstand
Operating temperature range (T _U)	-40°C...+80°C
Function monitoring	button with indicator light
Number of ports	1
Cross-sectional area (PE, ⚡)	10-35 mm ² flexible/50 mm ² stranded
For mounting on	40 mm busbar systems
Enclosure material	thermoplastic, red, UL 94 V-0
Place of installation	indoor installation
Degree of protection	IP 20
Capacity	3 modules, DIN 43880
Approvals	VDE



For protecting low-voltage consumer's installations against surges and even direct lightning strikes. For installation in conformity with the lightning protection zones concept at the boundaries from $0_A - 2$.

- Spark-gap based combined lightning current and surge arrester with integrated backup fuse
- Energy coordination with other arresters of the Red/Line product family
- Low voltage protection level $U_p \leq 1.5$ kV (including backup fuse)
- Maximum system availability due to RADAX Flow follow current limitation
- High follow current extinguishing capability a.c. of 50 kA_{rms}
- High lightning current discharge capacity up to 25 kA ($10/350$ μ s)
- Capable of protecting terminal equipment
- Operating state/fault indication by indicator flag in the inspection window



DEHNvenCI 1 255: Single-pole combined lightning current and surge arrester with integrated backup fuse
 DEHNvenCI 1 255 FM: With remote signalling contact for monitoring device (floating changeover contact)

With their functional Red/Line family design, DEHNvenCI coordinated combined lightning current and surge arresters combine system protection and compact dimensions in a single device.

The characteristics of the practice-proven DEHNventil family were combined with a lightning-current-carrying arrester backup fuse in an enclosure with a width of two modules.

The increasingly compact design of switchgear installations makes it difficult to install lightning current arresters in conformity with the standard. DEHNvenCI does not only allow space-saving integration of a combined arrester, but also meets the protection requirements in modern switchgear installations. The integrated arrester backup fuse is dimensioned to ensure maximum discharge capacity and optimal system protection.

This eliminates the need to select and install an arrester backup fuse, ensuring short connecting cable lengths as required in IEC 60364-5-53. DEHNvenCI is an efficient combined arrester which is easy to install.

The energy coordinated arresters even allow to protect terminal devices or sensitive electronics in modern switchgear installations if the distance between DEHNvenCI and the consumers is ≤ 5 m.

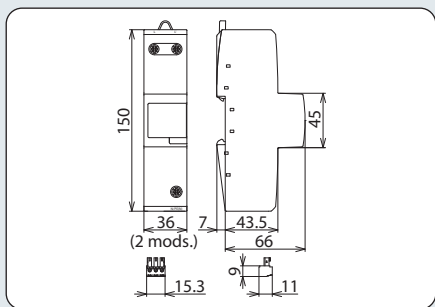
The patented RADAX Flow technology for follow current limitation and extinction ensures high system availability of the electrical consumer's installations to be protected.

Even in case of short-circuit currents as high as 50 kA_{rms}, DEHNvenCI can also be used in industrial systems without restrictions.

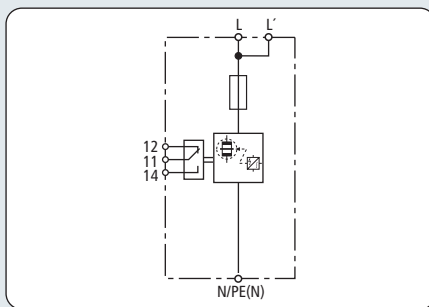
The ability of carrying lightning impulse currents without destruction and simultaneously reducing the energy to an acceptable level for terminal devices ensures the availability of the switchgear installation in case of a lightning strike. This considerably reduces the risk of high loss failures.

The operating state/fault indication of DEHNvenCI, in which the fuse monitoring is integrated, provides information on the operating state of the arrester even if no operating current is present. Apart from the standard visual indication with green and red indicator flags, DEHNvenCI 1 255 FM devices feature a three-pole remote signalling terminal. With its floating changeover contact, the remote signal can be used as a break or make contact according to the particular circuit concept.

Combined SPDs – Type 1



Dimension drawing DVCI 1 255 (FM)



Basic circuit diagram DVCI 1 255 FM



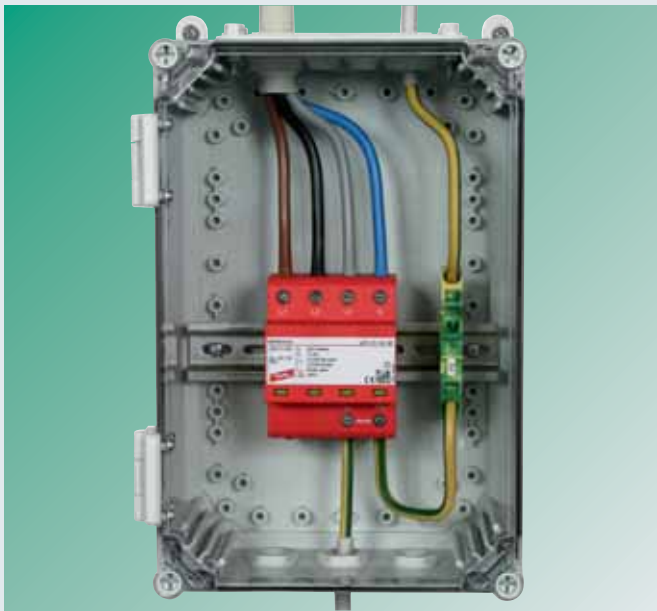
NEW

Combined lightning current and surge arrester with integrated arrester backup fuse

- Spark-gap-based combined lightning current and surge arrester with integrated backup fuse
- Maximum system availability due to RADAX Flow follow current limitation
- Capable of protecting terminal equipment

Type	DVCI 1 255	DVCI 1 255 FM
Part No.	961 200	961 205
SPD according to EN 61643-11 / IEC 61643-1/-11	Type 1 / Class I	Type 1 / Class I
Energy coordination with terminal equipment	Type 1 + Type 2	Type 1 + Type 2
Energy coordination with terminal equipment (≤ 5 m)	Type 1 + Type 2 + Type 3	Type 1 + Type 2 + Type 3
Nominal a.c. voltage (U _N)	230 V	230 V
Maximum continuous operating a.c. voltage (U _C)	255 V	255 V
Lightning impulse current (10/350 μs) (I _{imp})	25 kA	25 kA
Specific energy (W/R)	156.25 kJ/ohms	156.25 kJ/ohms
Nominal discharge current (8/20 μs) (I _n)	25 kA	25 kA
Voltage protection level (U _p)	≤ 1.5 kV	≤ 1.5 kV
Follow current extinguishing capability a.c. (I _{fi})	50 kA _{rms}	50 kA _{rms}
Follow current limitation/Selectivity	no tripping of a 20 A gL/gG fuse up to 50 kA _{rms} (prosp.)	no tripping of a 20 A gL/gG fuse up to 50 kA _{rms} (prosp.)
Response time (t _A)	≤ 100 ns	≤ 100 ns
Max. mains-side overcurrent protection	not required	not required
Max. backup fuse (L-L')	125 A gL/gG	125 A gL/gG
Temporary overvoltage (TOV) (U _T)	440 V / 5 sec.	440 V / 5 sec.
TOV characteristics	withstand	withstand
Operating temperature range [parallel]/[series] (T _U)	-40°C...+80°C / -40°C...+60°C	-40°C...+80°C / -40°C...+60°C
Operating state/fault indication	green / red	green / red
Number of ports	1	1
Cross-sectional area (L, L', N/PE(N)) (min.)	10 mm ² solid/flexible	10 mm ² solid/flexible
Cross-sectional area (L, N/PE(N)) (max.)	50 mm ² stranded/35 mm ² flexible	50 mm ² stranded/35 mm ² flexible
Cross-sectional area (L') (max.)	35 mm ² stranded/25 mm ² flexible	35 mm ² stranded/25 mm ² flexible
For mounting on	35 mm DIN rail acc. to EN 60715	35 mm DIN rail acc. to EN 60715
Enclosure material	thermoplastic, red, UL 94 V-0	thermoplastic, red, UL 94 V-0
Place of installation	indoor installation	indoor installation
Degree of protection	IP 20	IP 20
Capacity	2 modules, DIN 43880	2 modules, DIN 43880
Type of remote signalling contact	—	changeover contact
a.c. switching capacity	—	250 V/0.5 A
d.c. switching capacity	—	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A
Cross-sectional area for remote signalling terminals	—	max. 1.5 mm ² solid/flexible

Combined SPDs Type 1



For protecting low-voltage consumer's installations against surges and even direct lightning strikes. For installation in conformity with the lightning protection zones concept at the boundaries from $0_A - 2$.



- DEHNshield TNC 255: Application-optimised combined lightning current and surge arrester for TN-C systems
- DEHNshield TNS 255: Application-optimised combined lightning current and surge arrester for TN-S systems
- DEHNshield TT 255: Application-optimised combined lightning current and surge arrester for TT and TN-S systems ("3+1" circuit)
- DEHNshield TN 255: Application-optimised combined lightning current and surge arrester for single-phase TN systems
- DEHNshield TT 2P 255: Application-optimised combined lightning current and surge arrester for single-phase TT and TN systems ("1+1" circuit)

The space-saving and application-optimised DEHNshield family offers various benefits that are characteristic of spark-gap-based Type 1 arresters such as the "wave breaker function" (WBF). This function and the associated reduction of the pulse time mitigate the energy of the lightning impulse current to an acceptable level for downstream protection stages or terminal equipment. Moreover, DEHNshield arresters are directly energy coordinated with other arresters of the Red/Line product family. Application-optimised DEHNshield combined lightning current and surge arresters combine lightning equipotential bonding up to 50 kA (10/350 μ s) lightning impulse currents and surge protection in a single device. This clearly distinguishes DEHNshield from varistor-based arresters of this application and performance class.

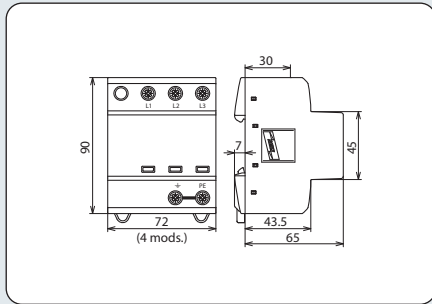
Due to their technical parameters which are rated for use in simple and compact electrical installations, DEHNshield arresters are ideally suited for this application class. For this reason, they are a space-saving and application-optimised solution in particular for residential buildings. DEHNshield arresters also provide optimal protection in buildings without external lightning protection system where roof superstructures or overhead line supplies are installed. According to VdS 2031, it is advisable to use Type 1 SPDs for these buildings. A detailed application description can be found in brochure DS193. No additional backup fuse is required if an installation is protected by backup fuses up to 160 A. If applications are not sufficiently defined, it is advisable to use DEHNventil. Fulfilling the most stringent technical requirements, DEHNventil provides adequate protection at any time and is suitable for any application.

- Application-optimised prewired combined lightning current and surge arrester based on spark gap technology
- Space-saving arrester for compact and simply equipped electrical installations with reduced technical requirements
- For protecting residential buildings and special applications (see brochure No. DS193)
- Capable of protecting terminal equipment
- Discharge capacity up to 50 kA (10/350 μ s)
- No tripping of 32 A gL/gG fuses up to short-circuit currents of 25 kA_{rms}
- Operating state/fault indication by indicator flag in the inspection window

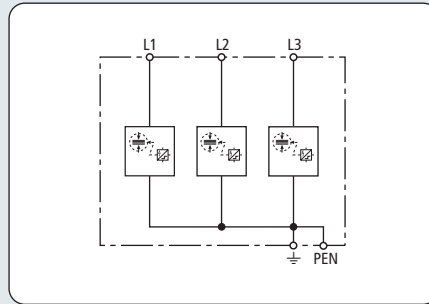
The energy coordinated arresters even allow to protect terminal equipment if the distance between DEHNshield and the consumers is ≤ 5 m. Owing to their non-exhausting spark gap and low space requirements, the application-optimised combined lightning current and surge arresters can be easily integrated into distribution boards. The follow-current-limiting spark gap technology ensures selectivity even in case of low-value fuses (35 A gL/gG), meaning that upstream fuses are not tripped by mains follow currents.

Busbars and pin-shaped terminals from DEHN + SÖHNE can be used for connecting DEHNshield to other DIN rail mounted devices. The type designation of DEHNshield allows to easily choose the right arrester for the relevant system configuration of the low-voltage consumer's installation. The operating state/fault indication of every protective path immediately provides information on the operating state of the arrester even if no operating current is present.





Dimension drawing DSH TNC 255



Basic circuit diagram DSH TNC 255



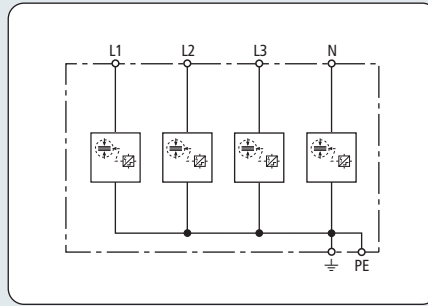
Application-optimised prewired combined lightning current and surge arrester for TN-C systems

- Application-optimised prewired spark-gap-based combined lightning current and surge arrester
- Space-saving arrester for compact and simply equipped electrical installations with reduced technical requirements
- Capable of protecting terminal equipment

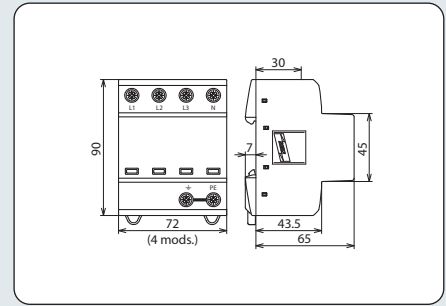
Type	DSH TNC 255
Part No.	941 300
SPD according to EN 61643-11 / IEC 61643-1/-11	Type 1 / Class I
Energy coordination with terminal equipment	Type 1 + Type 2
Energy coordination with terminal equipment (≤ 5 m)	Type 1 + Type 2 + Type 3
Nominal a.c. voltage (U _N)	230 / 400 V
Max. continuous operating a.c. voltage (U _C)	255 V
Lightning impulse current (10/350 μs) [L1+L2+L3-PEN] (I _{total})	37.5 kA
Specific energy [L1+L2+L3-PEN] (W/R)	352.00 kJ/ohms
Lightning impulse current (10/350 μs) [L-PEN] (I _{imp})	12.5 kA
Specific energy [L-PEN] (W/R)	39.06 kJ/ohms
Nominal discharge current (8/20 μs) (I _n)	12.5 / 37.5 kA
Voltage protection level (U _p)	≤ 1.5 kV
Follow current extinguishing capability a.c. (I _f)	25 kA _{rms}
Follow current limitation/Selectivity	no tripping of a 32 A gL/gG fuse up to 25 kA _{rms} (prosp.)
Response time (t _Δ)	≤ 100 ns
Max. mains-side overcurrent protection	160 A gL/gG
Temporary overvoltage (TOV) (U _T)	440 V / 5 sec.
TOV characteristics	withstand
Operating temperature range (T _U)	-40 °C...+80 °C
Operating state/fault indication	green / red
Number of ports	1
Cross-sectional area (L1, L2, L3, PEN) (min.)	1.5 mm ² solid/flexible
Cross-sectional area (L1, L2, L3, PEN) (max.)	35 mm ² stranded/25 mm ² flexible
For mounting on	35 mm DIN rail acc. to EN 60715
Enclosure material	thermoplastic, red, UL 94 V-0
Place of installation	indoor installation
Degree of protection	IP 20
Capacity	4 modules, DIN 43880

Combined SPDs Type 1

NEW



Basic circuit diagram DSH TNS 255

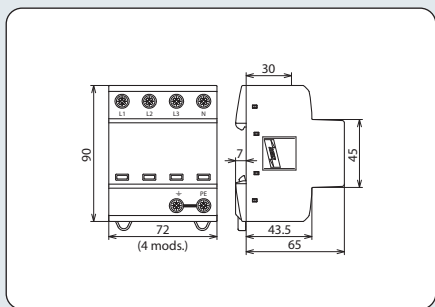


Dimension drawing DSH TNS 255

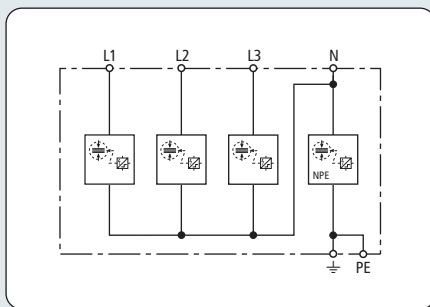
- Application-optimised prewired spark-gap-based combined lightning current and surge arrester
- Space-saving arrester for compact and simply equipped electrical installations with reduced technical requirements
- Capable of protecting terminal equipment

Application-optimised prewired combined lightning current and surge arrester for TN-S systems

Type	DSH TNS 255
Part No.	941 400
SPD according to EN 61643-11 / IEC 61643-1/-11	Type 1 / Class I
Energy coordination with terminal equipment	Type 1 + Type 2
Energy coordination with terminal equipment (≤ 5 m)	Type 1 + Type 2 + Type 3
Nominal a.c. voltage (U_N)	230 / 400 V
Max. continuous operating a.c. voltage (U_C)	255 V
Lightning impulse current (10/350 μ s) [L1+L2+L3+N-PE] (I_{total})	50 kA
Specific energy [L1+L2+L3+N-PE] (W/R)	625.00 kJ/ohms
Lightning impulse current (10/350 μ s) [L, N-PE] (I_{imp})	12.5 kA
Specific energy [L,N-PE] (W/R)	39.06 kJ/ohms
Nominal discharge current (8/20 μ s) (I_n)	12.5 / 50 kA
Voltage protection level [L-PE]/[N-PE] (U_p)	≤ 1.5 / ≤ 1.5 kV
Follow current extinguishing capability a.c. (I_f)	25 kA _{rms}
Follow current limitation/Selectivity	no tripping of a 32 A gL/G fuse up to 25 kA _{rms} (prosp.)
Response time (t_A)	≤ 100 ns
Max. mains-side overcurrent protection	160 A gL/G
Temporary overvoltage (TOV) [L-N] (U_T)	440 V / 5 sec.
TOV characteristics	withstand
Operating temperature range (T_U)	-40 °C...+80 °C
Operating state/fault indication	green / red
Number of ports	1
Cross-sectional area (L1, L2, L3, N, PE, \perp) (min.)	1.5 mm ² solid/flexible
Cross-sectional area (L1, L2, L3, N, PE, \perp) (max.)	35 mm ² stranded/25 mm ² flexible
For mounting on	35 mm DIN rail acc. to EN 60715
Enclosure material	thermoplastic, red, UL 94 V-0
Place of installation	indoor installation
Degree of protection	IP 20
Capacity	4 modules, DIN 43880



Dimension drawing DSH TT 255



Basic circuit diagram DSH TT 255



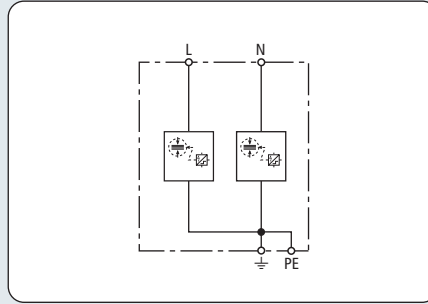
Application-optimised prewired combined lightning current and surge arrester for TT and TN-S systems ("3+1" circuit)

- Application-optimised prewired spark-gap-based combined lightning current and surge arrester
- Space-saving arrester for compact and simply equipped electrical installations with reduced technical requirements
- Capable of protecting terminal equipment

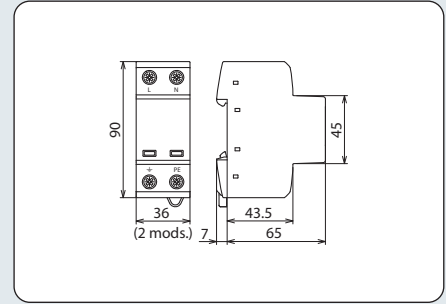
Type	DSH TT 255
Part No.	941 310
SPD according to EN 61643-11 / IEC 61643-1/-11	Type 1 / Class I
Energy coordination with terminal equipment	Type 1 + Type 2
Energy coordination with terminal equipment (≤ 5 m)	Type 1 + Type 2 + Type 3
Nominal a.c. voltage (U _N)	230 / 400 V
Max. continuous operating a.c. voltage (U _C)	255 V
Lightning impulse current (10/350 μs) [L1+L2+L3+N-PE] (I _{total})	50 kA
Specific energy [L1+L2+L3+N-PE] (W/R)	625.00 kJ/ohms
Lightning impulse current (10/350 μs) [L-N]/[N-PE] (I _{imp})	12.5 / 50 kA
Specific energy [L-N]/[N-PE] (W/R)	39.06 / 625.00 kJ/ohms
Nominal discharge current (8/20 μs) [L-N]/[N-PE] (I _n)	12.5 / 50 kA
Voltage protection level [L-N]/[N-PE] (U _p)	≤ 1.5 / ≤ 1.5 kV
Follow current extinguishing capability [L-N]/[N-PE] (I _{fi})	25 kA _{rms} / 100 A _{rms}
Follow current limitation/Selectivity	no tripping of a 32 A gL/gG fuse up to 25 kA _{rms} (prosp.)
Response time (t _Δ)	≤ 100 ns
Max. mains-side overcurrent protection	160 A gL/gG
Temporary overvoltage (TOV) [L-N] (U _T)	440 V / 5 sec.
Temporary overvoltage (TOV) [N-PE] (U _T)	1200 V / 200 ms
TOV characteristics	withstand
Operating temperature range (T _U)	-40 °C...+80 °C
Operating state/fault indication	green / red
Number of ports	1
Cross-sectional area (L1, L2, L3, N, PE, ⚬) (min.)	1.5 mm ² solid/flexible
Cross-sectional area (L1, L2, L3, N, PE, ⚬) (max.)	35 mm ² stranded/25 mm ² flexible
For mounting on	35 mm DIN rail acc. to EN 60715
Enclosure material	thermoplastic, red, UL 94 V-0
Place of installation	indoor installation
Degree of protection	IP 20
Capacity	4 modules, DIN 43880

Combined SPDs Type 1

NEW



Basic circuit diagram DSH TN 255



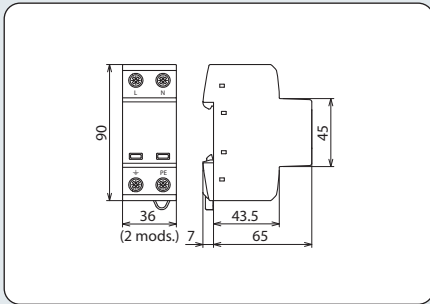
Dimension drawing DSH TN 255

- Application-optimised prewired spark-gap-based combined lightning current and surge arrester
- Space-saving arrester for compact and simply equipped electrical installations with reduced technical requirements
- Capable of protecting terminal equipment

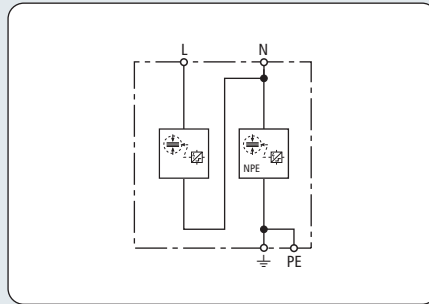
Application-optimised prewired combined lightning current and surge arrester for single-phase TN systems

Type	DSH TN 255
Part No.	941 200
SPD according to EN 61643-11 / IEC 61643-1/-11	Type 1 / Class I
Energy coordination with terminal equipment	Type 1 + Type 2
Energy coordination with terminal equipment (≤ 5 m)	Type 1 + Type 2 + Type 3
Nominal a.c. voltage (U _N)	230 V
Max. continuous operating a.c. voltage (U _C)	255 V
Lightning impulse current (10/350 μs) [L+N-PE] (I _{total})	25 kA
Specific energy [L+N-PE] (W/R)	156.25 kJ/ohms
Lightning impulse current (10/350 μs) [L, N-PE] (I _{imp})	12.5 kA
Specific energy [L,N-PE] (W/R)	39.06 kJ/ohms
Nominal discharge current (8/20 μs) (I _n)	12.5 / 25 kA
Voltage protection level [L-PE]/[N-PE] (U _p)	≤ 1.5 / ≤ 1.5 kV
Follow current extinguishing capability a.c. (I _f)	25 kA _{rms}
Follow current limitation/Selectivity	no tripping of a 32 A gL/gG fuse up to 25 kA _{rms} (prosp.)
Response time (t _a)	≤ 100 ns
Max. mains-side overcurrent protection	160 A gL/gG
Temporary overvoltage (TOV) [L-N] (U _T)	440 V / 5 sec.
TOV characteristics	withstand
Operating temperature range (T _U)	-40 °C...+80 °C
Operating state/fault indication	green / red
Number of ports	1
Cross-sectional area (L, N, PE, ⚡) (min.)	1.5 mm ² solid/flexible
Cross-sectional area (L, N, PE, ⚡) (max.)	35 mm ² stranded/25 mm ² flexible
For mounting on	35 mm DIN rail acc. to EN 60715
Enclosure material	thermoplastic, red, UL 94 V-0
Place of installation	indoor installation
Degree of protection	IP 20
Capacity	2 modules, DIN 43880

Combined SPDs Type 1



Dimension drawing DSH TT 2P 255



Basic circuit diagram DSH TT 2P 255



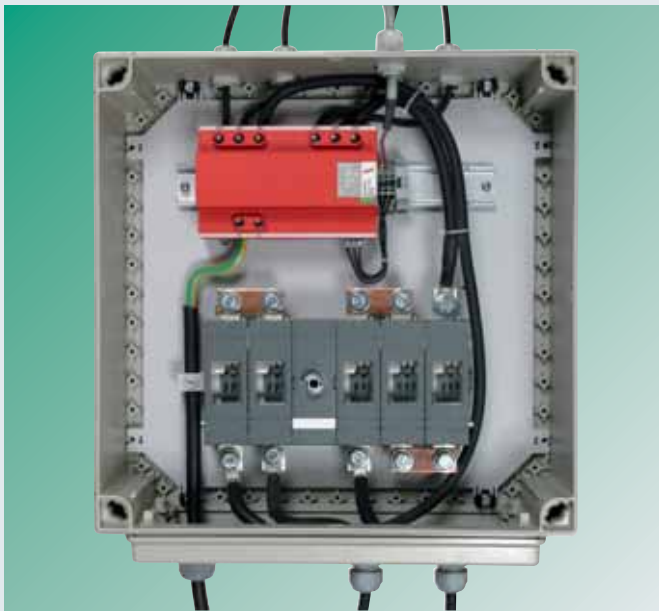
NEW

Application-optimised prewired combined lightning current and surge arrester for single-phase TT and TN systems ("1+1" circuit)

- Application-optimised prewired spark-gap-based combined lightning current and surge arrester
- Space-saving arrester for compact and simply equipped electrical installations with reduced technical requirements
- Capable of protecting terminal equipment

Type	DSH TT 2P 255
Part No.	941 110
SPD according to EN 61643-11 / IEC 61643-1/-11	Type 1 / Class I
Energy coordination with terminal equipment	Type 1 + Type 2
Energy coordination with terminal equipment (≤ 5 m)	Type 1 + Type 2 + Type 3
Nominal a.c. voltage (U _N)	230 V
Max. continuous operating a.c. voltage (U _C)	255 V
Lightning impulse current (10/350 μs) [L+N-PE] (I _{total})	25 kA
Specific energy [L+N-PE] (W/R)	156.25 kJ/ohms
Lightning impulse current (10/350 μs) [L-N]/[N-PE] (I _{imp})	12.5 / 25 kA
Specific energy [L-N]/[N-PE] (W/R)	39.06 / 156.25 kJ/ohms
Nominal discharge current (8/20 μs) [L-N]/[N-PE] (I _n)	12.5 / 25 kA
Voltage protection level [L-N]/[N-PE] (U _p)	≤ 1.5 / ≤ 1.5 kV
Follow current extinguishing capability [L-N]/[N-PE] (I _n)	25 kA _{rms} / 100 A _{rms}
Follow current limitation/Selectivity	no tripping of a 32 A gL/gG fuse up to 25 kA _{rms} (prosp.)
Response time (t _Δ)	≤ 100 ns
Max. mains-side overcurrent protection	160 A gL/gG
Temporary overvoltage (TOV) [L-N] (U _T)	440 V / 5 sec.
Temporary overvoltage (TOV) [N-PE] (U _T)	1200 V / 200 ms
TOV characteristics	withstand
Operating temperature range (T _U)	-40 °C...+80 °C
Operating state/fault indication	green / red
Number of ports	1
Cross-sectional area (L, N, PE, ⚡) (min.)	1.5 mm ² solid/flexible
Cross-sectional area (L, N, PE, ⚡) (max.)	35 mm ² stranded/25 mm ² flexible
For mounting on	35 mm DIN rail acc. to EN 60715
Enclosure material	thermoplastic, red, UL 94 V-0
Place of installation	indoor installation
Degree of protection	IP 20
Capacity	2 modules, DIN 43880

Combined SPDs Type 1



For protecting photovoltaic inverters against surges and even direct lightning strikes. For use in accordance with IEC 60364-7-712:2002-05 (Installation of photovoltaic power supply systems).



- Prewired combined lightning current and surge arrester for use in photovoltaic generator circuits
- For use in photovoltaic systems up to 1000 V U_{CPV}
- High lightning current discharge capacity due to approved creepage discharge spark gap technology
- Maximum system availability due to spark gap technology with direct current extinction circuit
- Operating state and fault indication by indicator flag in the inspection window
- Double and triple terminals provide additional installation benefits when connecting the combined lightning current and surge arrester (e.g. joining of two PV strings)

DEHNlimit PV 1000 V2: Combined lightning current and surge arrester for use in photovoltaic power supply systems up to 1000 V d.c.
DEHNlimit PV 1000 V2 FM: With remote signalling contact for monitoring device (floating changeover contact)

DEHNlimit PV 1000 V2 combined lightning current and surge arresters was specifically developed for use in photovoltaic power supply systems. The approved encapsulated creepage discharge spark gap technology allows to reliably protect photovoltaic generators and inverters even in case of direct lightning impulse currents. Due to its high lightning current discharge capacity, DEHNlimit PV 1000 V2 fulfils the most stringent requirements on lightning current arresters. The voltage protection level of DEHNlimit PV 1000 V2 and the reduction of the pulse time of the voltage pulse by means of the spark gap allow to coordinate the arrester with the equipment to be protected.

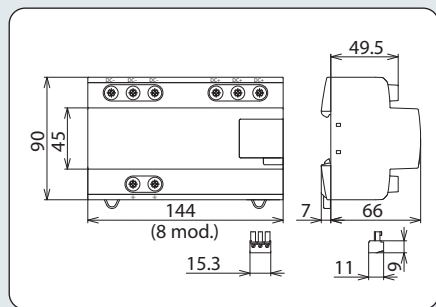
The d.c. extinction by means of the spark gap is a unique feature of DEHNlimit PV 1000 V2. Potential d.c. short-circuit currents up to 100 A d.c. caused by a tripping spark gap are interrupted without destruction within a split of a second in case of a photovoltaic voltage up to 1000 V d.c.

The combination of lightning current carrying capability, protection capability and follow current extinction ensures maximum availability of the PV system protected by DEHNlimit PV 1000 V2.

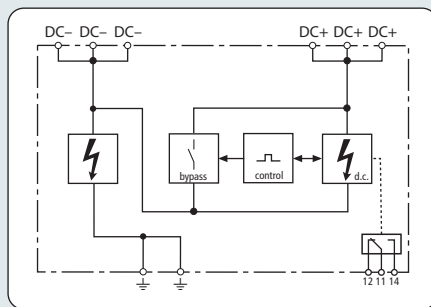
Triple terminals for the d.c.+ and d.c.- connection protect several strings at the same time by means of a single arrester. The double PE terminal allows easy connection to the local equipotential bonding and earth-termination system. The clamping range of all terminals of 1.5 to 35 mm² is optimised for cross-sectional areas commonly used for photovoltaic systems.

Moreover, DEHNlimit PV 1000 V2 features an operating state and fault indication that immediately indicates the operating state of the arrester even if no operating current is present. Apart from the standard visual indication with green and red indicator flags, DEHNlimit PV 1000 V2 FM features a three-pole remote signalling terminal. With its floating changeover contact, the remote signal can be used as a break or make contact according to the particular circuit concept.

Combined SPDs – Type 1 for PV Systems



Dimension drawing DLM PV 1000 V2 FM



Basic circuit diagram DLM PV 1000 V2 FM



- **Prewired combined lightning current and surge arrester for use in photovoltaic generator circuits**
- **High lightning current discharge capacity due to approved spark gap technology**
- **Maximum system availability due to spark gap technology with direct current extinction circuit**

Combined lightning current and surge arrester for photovoltaic power supply systems up to 1000 V d.c.

Type	DLM PV 1000 V2	DLM PV 1000 V2 FM
Part No.	900 342	900 345
SPD classification according to EN 61643-11	Type 1	Type 1
SPD classification according to IEC 61643-1/-11	Class I	Class I
Max. PV voltage [U _{CPV}] of the PV generator	1000 V	1000 V
Max. continuous operating d.c. voltage (U _{max DC})	1000 V	1000 V
Min. continuous operating d.c. voltage (U _{min DC})	100 V	100 V
Follow current extinguishing capability d.c. (I _{fi DC})	100 A	100 A
Nominal discharge current (8/20 μs) (I _n)	25 kA	25 kA
Lightning impulse current (10/350 μs) [DC+/DC- -> PE] (I _{imp})	50 kA	50 kA
Specific energy [DC+/DC- -> PE] (W/R)	625.00 kJ/ohms	625.00 kJ/ohms
Lightning impulse current (10/350 μs) [DC+ -> DC-] (I _{imp})	25 kA	25 kA
Specific energy [DC+ -> DC-] (W/R)	156.25 kJ/ohms	156.25 kJ/ohms
Voltage protection level [DC+ -> DC-] (U _p)	≤ 3.3 kV	≤ 3.3 kV
Voltage protection level [(DC+/DC-) -> PE] (U _p)	≤ 4 kV	≤ 4 kV
Operating current (I _{N d.c.})	≤ 5 mA	≤ 5 mA
Response time [DC+ -> DC-] (t _d)	≤ 20 ns	≤ 20 ns
Protective conductor current (I _{PE})	≤ 1 μA	≤ 1 μA
Operating temperature range (T _U)	-40°C...+60°C	-40°C...+60°C
Operating state/fault indication	green / red	green / red
Number of ports	1	1
Cross-sectional area (min.)	1.5 mm ² solid/flexible	1.5 mm ² solid/flexible
Cross-sectional area (max.)	35 mm ² stranded/25 mm ² flexible	35 mm ² stranded/25 mm ² flexible
For mounting on	35 mm DIN rail acc. to EN 60715	35 mm DIN rail acc. to EN 60715
Enclosure material	thermoplastic, red, UL 94 V-0	thermoplastic, red, UL 94 V-0
Place of installation	indoor installation	indoor installation
Degree of protection	IP 20	IP 20
Capacity	8 modules, DIN 43880	8 modules, DIN 43880
Type of remote signalling contact	—	changeover contact
a.c. switching capacity	—	250 V/0.5 A
d.c. switching capacity	—	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A
Cross-sectional area for remote signalling terminals	—	max. 1.5 mm ² solid/flexible

Combined SPDs Type 1

- Coordinated spark-gap-based lightning current arrester consisting of a base part and plug-in protection module
- Maximum system availability due to RADAX Flow follow current limitation
- No tripping of 32 A gL/gG fuses up to short-circuit currents of 50 kA_{rms}
- Discharge capacity up to 50 kA (10/350 μs)
- Directly coordinated with DEHNguard surge protective devices without additional cable length
- Low voltage protection level
- Operating state/fault indication by indicator flag in the inspection window
- Easy replacement of protection modules without tools due to module locking system with module release button



DEHNbloc M 1 ...: Coordinated modular single-pole lightning current arrester with high follow current limitation
 DEHNbloc M 1 ... FM: With remote signalling contact for monitoring device (floating changeover contact)

The modular devices of the DEHNbloc M product family are coordinated lightning current arresters with a functional design.

Energy coordination with Type 2 surge arresters of the DEHNguard family is ensured without additional cable lengths or decoupling coils. This is one of the most important features of the Red/Line product family.

The DEHNbloc M arresters combine high performance and user-friendliness in a single device. Their electrical parameters were rated for the most stringent requirements within lightning and surge protection systems. DEHNbloc M is ideally suited for use in the main distribution board of the low-voltage consumer's installation of a building. Equipped with the latest RADAX Flow spark gap technology, the protection and availability of electrical installations is a top priority of DEHNbloc M.

Due to the unique follow current limitation and extinction, fuses are not tripped by follow currents even in case of low-value fuses in the installation. The leakage-current-free protective circuit and the mechanical operating state indicator allow the device to be installed even upstream of meter panels in low-voltage consumer's installations.

The modular DEHNbloc M arresters are safe and user-friendly. Their vibration-proof module locking system, for example, is unique. Shock or vibration during transport or operation or enormous mechanical impulse loads

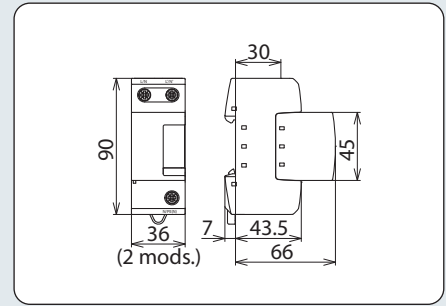
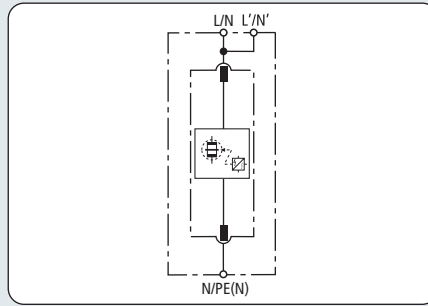


For protecting low-voltage consumer's installations against surges and even direct lightning strikes. For installation in conformity with the lightning protection zones concept at the boundaries from 0_A – 1.

resulting from discharges do not affect the module locking system which ensures safe fixation both for the base part and protection module. Nevertheless, the protection modules can be easily replaced without tools by simply pressing the user-friendly module release button. Both the base part and protection module are mechanically coded to ensure against installing an incorrect module. DEHNbloc M devices incorporate double terminals, allowing series connection of the arresters in a space-saving and cost-effective way according to IEC 60364-5-53 requirements for nominal currents up to 125 A.

The operating state/fault indication of DEHNbloc M immediately provides information on the operating state of the device even if no operating current is present. Apart from the standard visual indication with red and green indicator flags, DEHNbloc M ... FM devices feature an additional remote signalling output. With its floating changeover contact, the remote signal can be used as a break or make contact according to the particular circuit concept.





Basic circuit diagram DB M 1 ...

Dimension drawing DB M 1 ...

- Coordinated spark-gap-based lightning current arrester consisting of a base part and plug-in protection module
- Maximum system availability due to RADAX Flow follow current limitation
- Directly coordinated with DEHNgard surge protective devices without additional cable length

Coordinated modular single-pole lightning current arrester with high follow current limitation

Type	DB M 1 150	DB M 1 255	DB M 1 320
Part No.	961 110	961 120	961 130
SPD according to EN 61643-11	Type 1	Type 1	Type 1
SPD according to IEC 61643-1/-11	Class I	Class I	Class I
Max. continuous operating a.c. voltage (U_c)	150 V	255 V	320 V
Lightning impulse current (10/350 μ s) (I_{imp})	35 kA	50 kA	25 kA
Specific energy (W/R)	306.25 kJ/ohms	625.00 kJ/ohms	156.25 kJ/ohms
Nominal discharge current (8/20 μ s) (I_n)	35 kA	50 kA	25 kA
Voltage protection level (U_p)	≤ 1.5 kV	≤ 2.5 kV	≤ 2.5 kV
Follow current extinguishing capability a.c. (I_{fi})	50 kA _{rms}	50 kA _{rms}	50 kA _{rms}
Follow current limitation/Selectivity	no tripping of a 32 A gL/gG fuse up to 50 kA _{rms} (prosp.)		
Response time (t_A)	≤ 100 ns	≤ 100 ns	≤ 100 ns
Max. backup fuse (L) up to $I_K = 50$ kA _{rms} ($t_a \leq 0.2$ s)	500 A gL/gG	500 A gL/gG	315 A gL/gG
Max. backup fuse (L) up to $I_K = 50$ kA _{rms} ($t_a \leq 5$ s)	315 A gL/gG	315 A gL/gG	315 A gL/gG
Max. backup fuse (L) for $I_K > 50$ kA _{rms}	200 A gL/gG	200 A gL/gG	200 A gL/gG
Max. backup fuse (L-L')	125 A gL/gG	125 A gL/gG	125 A gL/gG
Temporary overvoltage (TOV) (U_T)	200 V / 5 sec.	440 V / 5 sec.	440 V / 5 sec.
TOV characteristics	withstand	withstand	withstand
Operating temperature range (parallel connection) (T_{UP})	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C
Operating temperature range (series connection) (T_{US})	-40°C...+60°C	-40°C...+60°C	-40°C...+60°C
Operating state/fault indication	green / red	green / red	green / red
Number of ports	1	1	1
Cross-sectional area (L/N, L'/N', N/PE (N)) (min.)	10 mm ² solid/flexible	10 mm ² solid/flexible	10 mm ² solid/flexible
Cross-sectional area (L/N, N/PE(N)) (max.)	50 mm ² stranded/35 mm ² flexible	50 mm ² stranded/35 mm ² flexible	50 mm ² stranded/35 mm ² flexible
Cross-sectional area (L'/N') (max.)	35 mm ² stranded/25 mm ² flexible	35 mm ² stranded/25 mm ² flexible	35 mm ² stranded/25 mm ² flexible
For mounting on	35 mm DIN rail acc. to EN 60715	35 mm DIN rail acc. to EN 60715	35 mm DIN rail acc. to EN 60715
Enclosure material	thermoplastic, red, UL 94 V-0	thermoplastic, red, UL 94 V-0	thermoplastic, red, UL 94 V-0
Place of installation	indoor installation	indoor installation	indoor installation
Degree of protection	IP 20	IP 20	IP 20
Capacity	2 modules, DIN 43880	2 modules, DIN 43880	2 modules, DIN 43880
Approvals	UL, CSA	VDE, KEMA, UL	UL, CSA

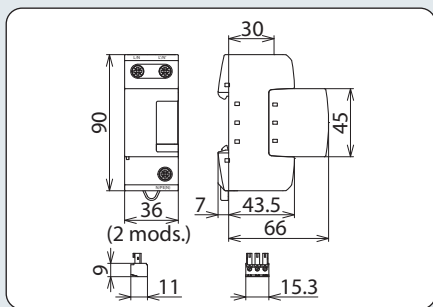
Accessory for DEHNbloc® M

DB M Spark-Gap-Based Protection Module

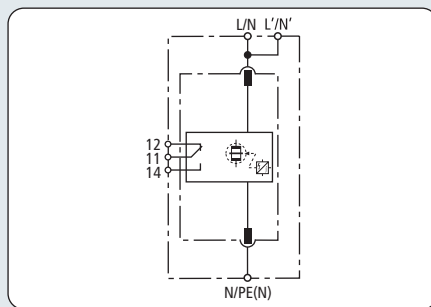
Spark-gap-based protection module



Type DB M MOD ...	150	255	320
Part No.	961 001	961 002	961 003
Max. continuous operating a.c. voltage (U_c)	150 V	255 V	320 V



Dimension drawing DB M 1 ... FM



Basic circuit diagram DB M 1 ... FM



Coordinated modular single-pole lightning current arrester with high follow current limitation; with remote signalling contact for monitoring system (floating changeover contact)

- Coordinated spark-gap-based lightning current arrester consisting of a base part and plug-in protection module
- Maximum system availability due to RADAX Flow follow current limitation
- Directly coordinated with DEHNguard surge protective devices without additional cable length

Lightn. Curr. Arr. Type 1

Type	DB M 1 150 FM	DB M 1 255 FM	DB M 1 320 FM
Part No.	961 115	961 125	961 135
SPD according to EN 61643-11	Type 1	Type 1	Type 1
SPD according to IEC 61643-1/-11	Class I	Class I	Class I
Max. continuous operating a.c. voltage (U_C)	150 V	255 V	320 V
Lightning impulse current (10/350 μ s) (I_{imp})	35 kA	50 kA	25 kA
Specific energy (W/R)	306.25 kJ/ohms	625.00 kJ/ohms	156.25 kJ/ohms
Nominal discharge current (8/20 μ s) (I_n)	35 kA	50 kA	25 kA
Voltage protection level (U_P)	≤ 1.5 kV	≤ 2.5 kV	≤ 2.5 kV
Follow current extinguishing capability a.c. (I_{fi})	50 kA _{rms}	50 kA _{rms}	50 kA _{rms}
Follow current limitation/Selectivity	no tripping of a 32 A gL/gG fuse up to 50 kA _{rms} (prosp.)		
Response time (t_A)	≤ 100 ns	≤ 100 ns	≤ 100 ns
Max. backup fuse (L) up to $I_k = 50$ kA _{rms} ($t_a \leq 0.2$ s)	500 A gL/gG	500 A gL/gG	315 A gL/gG
Max. backup fuse (L) up to $I_k = 50$ kA _{rms} ($t_a \leq 5$ s)	315 A gL/gG	315 A gL/gG	315 A gL/gG
Max. backup fuse (L) for $I_k > 50$ kA _{rms}	200 A gL/gG	200 A gL/gG	200 A gL/gG
Max. backup fuse (L-L')	125 A gL/gG	125 A gL/gG	125 A gL/gG
Temporary overvoltage (TOV) (U_T)	200 V / 5 sec.	440 V / 5 sec.	440 V / 5 sec.
TOV characteristics	withstand	withstand	withstand
Operating temperature range (parallel connection) (T_{UP})	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C
Operating temperature range (series connection) (T_{US})	-40°C...+60°C	-40°C...+60°C	-40°C...+60°C
Operating state/fault indication	green / red	green / red	green / red
Number of ports	1	1	1
Cross-sectional area (L/N, L'/N', N/PE (N)) (min.)	10 mm ² solid/flexible	10 mm ² solid/flexible	10 mm ² solid/flexible
Cross-sectional area (L/N, N/PE(N)) (max.)	50 mm ² stranded/35 mm ² flexible	50 mm ² stranded/35 mm ² flexible	50 mm ² stranded/35 mm ² flexible
Cross-sectional area (L'/N') (max.)	35 mm ² stranded/25 mm ² flexible	35 mm ² stranded/25 mm ² flexible	35 mm ² stranded/25 mm ² flexible
For mounting on	35 mm DIN rail acc. to EN 60715	35 mm DIN rail acc. to EN 60715	35 mm DIN rail acc. to EN 60715
Enclosure material	thermoplastic, red, UL 94 V-0	thermoplastic, red, UL 94 V-0	thermoplastic, red, UL 94 V-0
Place of installation	indoor installation	indoor installation	indoor installation
Degree of protection	IP 20	IP 20	IP 20
Capacity	2 modules, DIN 43880	2 modules, DIN 43880	2 modules, DIN 43880
Approvals	UL, CSA	VDE, KEMA, UL	UL, CSA
Type of remote signalling contact	changeover contact	changeover contact	changeover contact
a.c. switching capacity	250 V/0.5 A	250 V/0.5 A	250 V/0.5 A
d.c. switching capacity	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A
Cross-sectional area for remote signalling terminals	max. 1.5 mm ² solid/flexible	max. 1.5 mm ² solid/flexible	max. 1.5 mm ² solid/flexible

Accessory for DEHNbloc® M

DB M Spark-Gap-Based Protection Module

Spark-gap-based protection module

Type DB M MOD ...	150	255	320
Part No.	961 001	961 002	961 003
Max. continuous operating a.c. voltage (U_C)	150 V	255 V	320 V





- High discharge capacity due to powerful cree-page discharge spark gap
- Maximum system availability due to RADAX Flow follow current limitation
- With module release button for replacing protection modules without tools
- Operating state / fault indication by green / red indicator flag in the inspection window
- The plug-in protection module can be replaced without the need to de-energise and removing the vertical cover



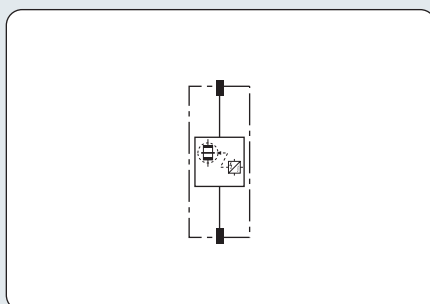
For protecting low-voltage consumer's installations against surges and even direct lightning strikes. For installation in conformity with the lightning protection zones concept at the boundaries from $0_A - 1$.

DB M MOD ...: Spark-gap-based protection module

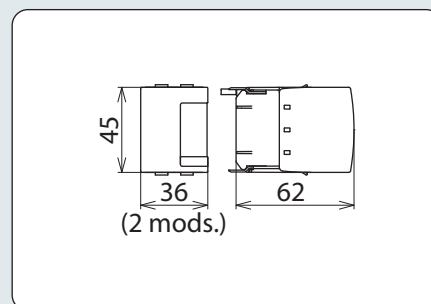
The spark-gap-based protection modules for devices of the DEHNbloc M family incorporate the complete protective circuit including the RADAX Flow spark gap and the monitoring circuit for controlling the energy flow. The spark gap monitoring system and the operating state and fault indicator are also housed in the protection module.

Every protection module is mechanically coded to ensure against installing an incorrect replacement module.

As with all modular protective devices, protection modules can be easily replaced without tools by simply pressing the module release button.



Basic circuit diagram DB M MOD ...



Dimension drawing DB M MOD ...

Spark-gap-based protection module

Type	DB M MOD 150	DB M MOD 255	DB M MOD 320
Part No.	961 001	961 002	961 003
Max. continuous operating a.c. voltage (U_c)	150 V	255 V	320 V
Lightning impulse current (10/350 μ s) (I_{imp})	35 kA	50 kA	25 kA
Specific energy (W/R)	306.25 kJ/ohms	625.00 kJ/ohms	156.25 kJ/ohms
Follow current extinguishing capability a.c. (I_{fl})	50 kA _{rms}	50 kA _{rms}	50 kA _{rms}
Follow current limitation/Selectivity	no tripping of a 32 A gL/gG fuse up to 50 kA _{rms} (prosp.)		

- Encapsulated RADAX Flow spark gap with high follow current limitation
- No tripping of 32 A gL/gG fuses up to short-circuit currents of 50 kA_{rms}
- High lightning current discharge capacity
- Directly coordinated with DEHNguard ... and V(A) NH ... surge protective devices without additional cable length
- NH00 versions
- Low voltage protection level



For protecting low voltage consumer's installations against surges and even direct lightning strikes. For installation in conformity with the lightning protection zones concept at the boundaries from $O_A - 1$.

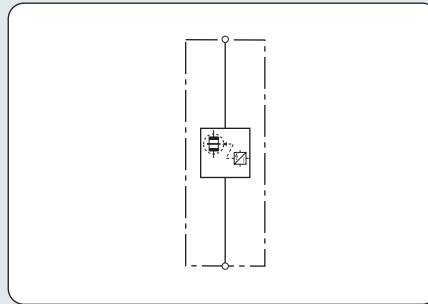
DBM NH00 255: Coordinated single-pole lightning current arrester in NH00 design with high follow current limitation for $U_C = 255 V$



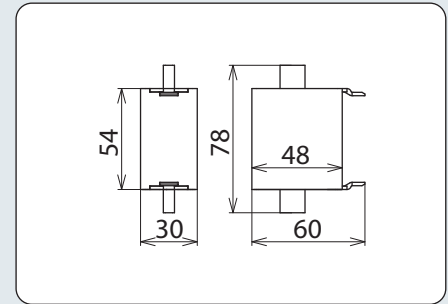
The coordinated DEHNBloc Maxi ... lightning current arresters adapt themselves to every kind of application. Be it in exposed locations or harsh industrial environments: DEHNBloc Maxi ... are always the right solution. The single-pole devices are coordinated with the approved DEHNguard and V(A) NH surge arresters of the Red/Line family. Independent of cable lengths and without the need for additional decoupling coils, the surge protection concept can be adapted to the specific requirements of the installation.

DEHNBloc Maxi arresters are based on the patented encapsulated creepage discharge spark gap and RADAX Flow follow current limitation technology. There is no need for installers to worry about safety distances from busbars or equipment. This arrangement also eliminates the risk of tripped backup fuses resulting from a lack of selectivity between the protective device and any overcurrent protection systems that may be in place, resulting in the highest possible system availability.

DEHNBloc Maxi NH00 255 was specifically designed for industrial distribution boards and supply systems and allows compact and space-saving installation in NH00 fuse holders or NH disconnectors depending on the particular system.



Basic circuit diagram DBM NH00 255



Dimension drawing DBM NH00 255

- Encapsulated RADAX Flow spark gap with high follow current limitation
- High lightning current discharge capability
- Directly coordinated with DEHNguard ... and V(A) NH ... surge protective devices without additional cable length

Coordinated single-pole lightning current arrester in NH00 design with high follow current limitation for $U_c = 255$ V

Type	DBM NH00 255
Part No.	900 255
SPD according to EN 61643-11	Type 1
SPD according to IEC 61643-1/-11	Class I
Max. continuous operating a.c. voltage (U_c)	255 V
Lightning impulse current (10/350 μ s) (I_{imp})	25 kA
Specific energy (W/R)	156.25 kJ/ohms
Nominal discharge current (8/20 μ s) (I_n)	25 kA
Voltage protection level (U_p)	≤ 2.5 kV
Follow current extinguishing capability a.c. (I_{fi})	50 kA _{rms}
Follow current limitation / Selectivity	no tripping of a 32 A gL/gG fuse up to 50 kA _{rms} (prosp.)
Response time (t_A)	≤ 100 ns
Max. backup fuse (L) up to $I_K = 50$ kA _{rms}	315 A gL/gG
Max. backup fuse (L) for $I_K > 50$ kA _{rms}	200 A gL/gG
Temporary overvoltage (TOV) (U_T)	440 V / 5 sec.
TOV characteristics	withstand
Operating temperature range (parallel connection) (T_{UP})	-40°C...+80°C
Number of ports	1
For mounting on	NH fuse holders of size NH00
Enclosure material	thermoplastic, red, UL 94 V-0
Place of installation	indoor installation
Degree of protection	IPX4W

Lightn. Curr. Arr. Type 1

- Encapsulated non-exhausting spark gap
- High follow current extinguishing capability and follow current limitation due RADAX Flow technology
- Directly coordinated with DEHNguard surge protective devices without additional cable length
- Operating state/fault indication by indicator flag in the inspection window



For protecting low-voltage consumer's installations against surges and even direct lightning strikes. For installation in conformity with the lightning protection zones concept at the boundaries from $0_A - 1$.

- DEHNbloc Maxi 1 440: Coordinated single-pole lightning current arrester with high follow current limitation for $U_C = 440 \text{ V}$
 DEHNbloc Maxi 1 440 FM: With remote signalling contact for monitoring device (floating changeover contact)
 DEHNbloc Maxi 1 760 FM: Coordinated single-pole lightning current arrester with high follow current limitation for $U_C = 760 \text{ V}$; with remote signalling contact for monitoring device (floating changeover contact)

The coordinated DEHNbloc Maxi 440 and 760 lightning current arresters were specifically designed for high system voltages. This allows to efficiently protect a variety of industrial applications from direct and indirect lightning currents.

Be it in a wind turbine or an isolated low-voltage installation of an industrial enterprise, DEHNbloc Maxi devices exactly fulfil the specific requirements.



Both the design of the protective circuit and the enclosure specifically designed for this type of arrester are particularly adapted to high system voltages.

The approved RADAX Flow technology is the essential core element of the coordinated DEHNbloc Maxi 440 and 760 lightning current arresters. Their capability of considerably limiting power-frequency follow currents and extinguishing them within a matter of milliseconds makes these devices special.

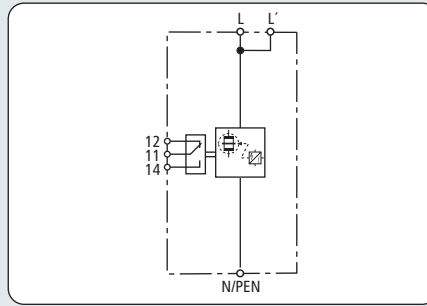
The patented RADAX Flow follow current limitation ensures that low-value fuses are not tripped by follow currents.

Their capability to discharge lightning currents without destruction and to suppress mains follow currents without tripping upstream overcurrent protective devices ensures a high degree of availability in electrical installations.

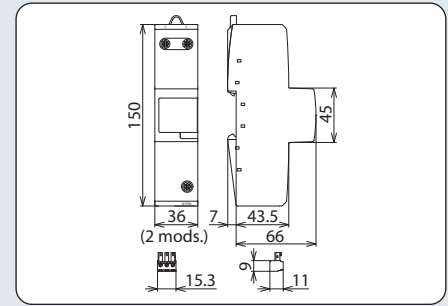
The operating state/fault indication of the coordinated lightning current arresters immediately provides information on the operating state of the devices even if no operating current is present. Apart from the standard visual indication with green and red indicator flags, DEHNbloc Maxi 1 ... FM features a three-pole remote signalling terminal. With its floating changeover contact, the remote signal can be used as a break or make contact according to the particular circuit concept.

DEHNbloc Maxi 1 440 (FM)

Coordinated Type 1 Lightning Current Arresters



Basic circuit diagram DBM 1 440 FM



Dimension drawing DBM 1 440 FM

- Encapsulated non-exhausting spark gap
- High follow current extinguishing capability and limitation due to RADAX Flow technology
- Directly coordinated with DEHNgard surge protective devices without additional cable length

Coordinated single-pole lightning current arrester with high follow current limitation for $U_C = 440\text{ V}$

Type	DBM 1 440	DBM 1 440 FM
Part No.	961 140	961 145
SPD according to EN 61643-11	Type 1	Type 1
SPD according to IEC 61643-1/-11	Class I	Class I
Max. continuous operating a.c. voltage (U_C)	440 V	440 V
Lightning impulse current (10/350 μ s) (I_{imp})	35 kA	35 kA
Specific energy (W/R)	306.25 kJ/ohms	306.25 kJ/ohms
Nominal discharge current (8/20 μ s) (I_n)	35 kA	35 kA
Voltage protection level (U_p)	$\leq 2.5\text{ kV}$	$\leq 2.5\text{ kV}$
Follow current extinguishing capability a.c. (I_{fi})	50 kA _{rms}	50 kA _{rms}
Follow current limitation / Selectivity	no tripping of a 32 A gL/gG fuse up to 50 kA _{rms} (prosp.)	no tripping of a 32 A gL/gG fuse up to 50 kA _{rms} (prosp.)
Response time (t_A)	$\leq 100\text{ ns}$	$\leq 100\text{ ns}$
Max. backup fuse (L) up to $I_K = 50\text{ kA}_{rms}$ ($t_a \leq 0.2\text{ s}$)	500 A gL/gG	500 A gL/gG
Max. backup fuse (L) up to $I_K = 50\text{ kA}_{rms}$ ($t_a \leq 5\text{ s}$)	250 A gL/gG	250 A gL/gG
Max. backup fuse (L) for $I_K > 50\text{ kA}_{rms}$	160 A gL/gG	160 A gL/gG
Max. backup fuse (L-L')	125 A gL/gG	125 A gL/gG
Temporary overvoltage (TOV) (U_T)	690 V / 5 sec.	690 V / 5 sec.
TOV characteristics	withstand	withstand
Operating temperature range (parallel connection) (T_{UP})	-40°C...+80°C	-40°C...+80°C
Operating temperature range (series connection) (T_{US})	-40°C...+60°C	-40°C...+60°C
Operating state/fault indication	green / red	green / red
Number of ports	1	1
Cross-sectional area (L, L', N/PEN) (min.)	10 mm ² solid/flexible	10 mm ² solid/flexible
Cross-sectional area (L, N/PEN) (max.)	50 mm ² stranded/35 mm ² flexible	50 mm ² stranded/35 mm ² flexible
Cross-sectional area (L') (max.)	35 mm ² stranded/25 mm ² flexible	35 mm ² stranded/25 mm ² flexible
For mounting on	35 mm DIN rail acc. to EN 60715	35 mm DIN rail acc. to EN 60715
Enclosure material	thermoplastic, red, UL 94 V-0	thermoplastic, red, UL 94 V-0
Place of installation	indoor installation	indoor installation
Degree of protection	IP 20	IP 20
Capacity	2 modules, DIN 43880	2 modules, DIN 43880
Approvals	UL, CSA	UL, CSA
Type of remote signalling contact	—	changeover contact
a.c. switching capacity	—	250 V/0.5 A
d.c. switching capacity	—	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A
Cross-sectional area for remote signalling terminals	—	max. 1.5 mm ² solid/flexible

Accessory for DEHNbloc® Maxi 440 / 760

Earthing Clip DG, three-pole, single-phase

Earthing clip for connecting the earth terminals of e.g. 3 Type 1 SPDs in a two-module enclosure with multi-functional terminal to earth

Type	EB DG 1000 1 3
Part No.	900 411
Dimensions	34 x 112 x 3 mm
Terminal	up to 25 mm ²



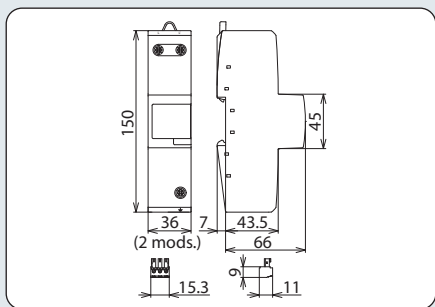
Accessory for DEHNbloc® Maxi 440 / 760

Earthing Clip, four-pole, single-phase

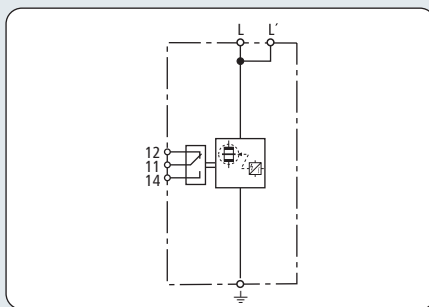
Earthing clip for connecting the earth terminals of e.g. 4 Type 1 SPDs in a two-module enclosure with multi-functional terminal to earth

Type	EB 1 4 9
Part No.	900 417
Dimensions	34 x 148 x 3 mm
Terminal	up to 25 mm ²





Dimension drawing DBM 1 760 FM



Basic circuit diagram DBM 1 760 FM



Coordinated single-pole lightning current arrester with high follow current limitation for $U_C = 760 V$

- Encapsulated non-exhausting spark gap
- High follow current extinguishing capability and limitation due to RADAX Flow technology
- Directly coordinated with DEHNgard surge protective devices without additional cable length

Type	DBM 1 760 FM
Part No.	961 175
SPD according to EN 61643-11	Type 1
SPD according to IEC 61643-1/-11	Class I
Max. continuous operating a.c. voltage (U_C)	760 V
Lightning impulse current (10/350 μs) (I_{imp})	25 kA
Specific energy (W/R)	156.25 kJ/ohms
Nominal discharge current (8/20 μs) (I_n)	25 kA
Voltage protection level (U_P)	≤ 4 kV
Follow current extinguishing capability a.c. (I_{fc})	25 kA _{rms}
Follow current limitation / Selectivity	no tripping of a 32 A gL/gG fuse up to 25 kA _{rms} (prosp.)
Response time (t_A)	≤ 100 ns
Max. backup fuse (L) up to $I_k = 25$ kA _{rms} ($t_a \leq 5$ s)	250 A gL/gG
Max. backup fuse (L) up to $I_k > 25$ kA _{rms}	100 A gL/gG
Max. backup fuse (L-L')	125 A gL/gG
Temporary overvoltage (TOV) (U_T)	1000 V / 5 sec.
TOV characteristics	withstand
Operating temperature range (parallel connection) (T_{UP})	-40°C...+80°C
Operating temperature range (series connection) (T_{US})	-40°C...+60°C
Operating state/fault indication	green / red
Number of ports	1
Cross-sectional area (L, L', \perp) (min.)	10 mm ² solid/flexible
Cross-sectional area (L, \perp) (max.)	50 mm ² stranded/35 mm ² flexible
Cross-sectional area (L') (max.)	35 mm ² stranded/25 mm ² flexible
For mounting on	35 mm DIN rail acc. to EN 60715
Enclosure material	thermoplastic, red, UL 94 V-0
Place of installation	indoor installation
Degree of protection	IP 20
Capacity	2 modules, DIN 43880
Approvals	UL, CSA
Type of remote signalling contact	changeover contact
a.c. switching capacity	250 V/0.5 A
d.c. switching capacity	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A
Cross-sectional area for remote signalling terminals	max. 1.5 mm ² solid/flexible

Accessory for DEHNbloc® Maxi 440 / 760

Earthing Clip, four-pole, single-phase

Earthing clip for connecting the earth terminals of e.g. 4 Type 1 SPDs in a two-module enclosure with multi-functional terminal to earth

Type	EB 1 4 9
Part No.	900 417
Dimensions	34 x 148 x 3 mm
Terminal	up to 25 mm ²



Accessory for DEHNbloc® Maxi 440 / 760

Earthing Clip DG, three-pole, single-phase

Earthing clip for connecting the earth terminals of e.g. 3 Type 1 SPDs in a two-module enclosure with multi-functional terminal to earth

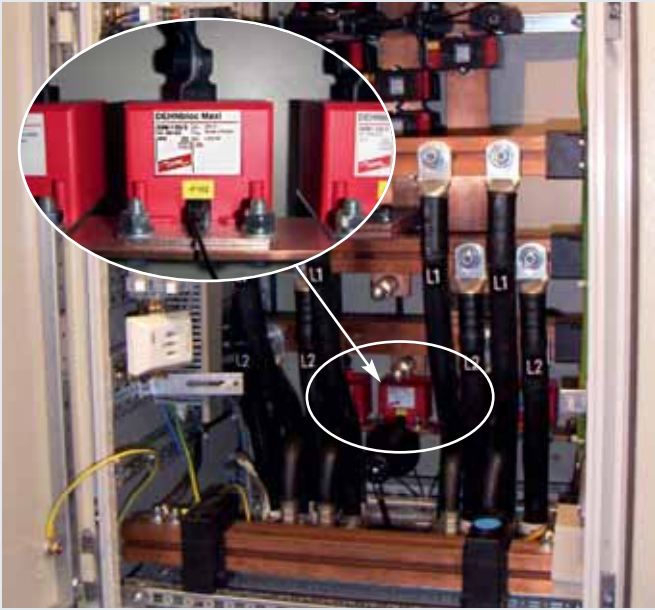
Type	EB DG 1000 1 3
Part No.	900 411
Dimensions	34 x 112 x 3 mm
Terminal	up to 25 mm ²



Coordinated lightning current arrester for busbars

Coordinated Type 1 Lightning Current Arresters

Lightn. Curr. Arr. Type 1



For protecting low voltage consumer's installations against surges and even direct lightning strikes. For installation in conformity with the lightning protection zones concept at the boundaries from $O_A - 1$.

- Combination of spark gap and integrated backup fuse
- Directly mounted onto PEN/N busbars
- Low voltage protection level $U_p \leq 2.5$ kV (including 80 cm connecting cable)
- Directly coordinated with DEHNguard surge protective device without additional cable length
- Short-circuit withstand capability of 100 kA_{rms} (220 kA_{peak})
- High follow current extinguishing capability and limitation due to RADAX Flow technology
- High lightning current discharge capacity
- With optical-fibre interface for SPD monitoring



DEHNbloc Maxi 1 255 S: Coordinated lightning current arrester with integrated arrester backup fuse for busbars

DEHNbloc Maxi S arresters can be easily integrated into the application environment of a low-voltage switchgear installation or distribution board.

Thanks to their unique mechanical design, the coordinated DEHNbloc Maxi S lightning current arresters can be mounted directly onto the PEN/N busbar of a switchgear installation without the need for additional adapters.

With the backup fuse integrated in the device, no other separate backup fuses need to be installed.

Installing the DEHNbloc Maxi S devices directly into the connection panel of a switchgear installation upstream of the circuit breaker ensures short cable lengths of the arresters and a low voltage protection level for the installation.

With a discharge capacity of 25 kA (10/350 μ s), DEHNbloc Maxi S fulfils the most stringent requirements of national and international lightning protection standards for all three-phase current applications in TN and TT systems.

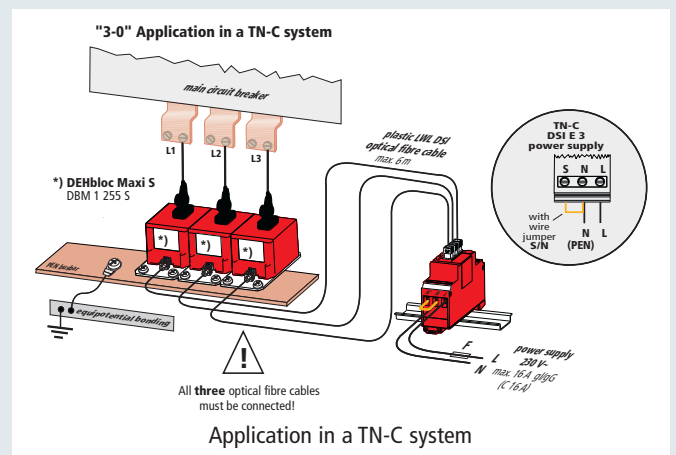
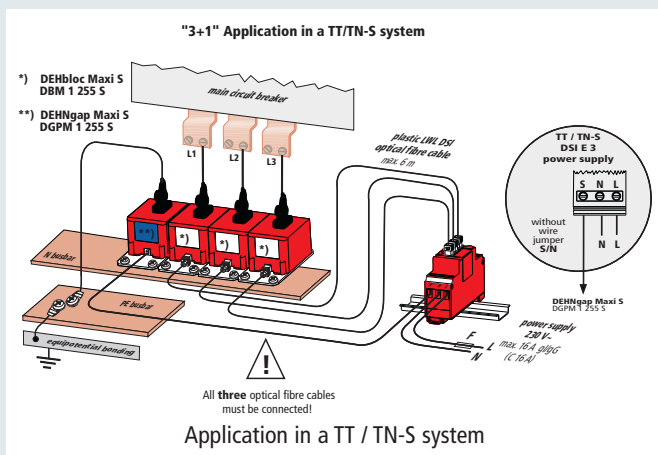
For "3+1" circuit configurations, DEHNgap Maxi S provides a powerful creepage discharge spark gap with a discharge capacity of 100 kA (10/350 μ s).

DEHNbloc Maxi S also features patented RADAX Flow follow current limitation, thus ensuring selectivity even in case of low-value fuses.

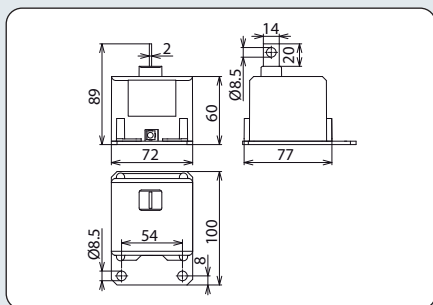
The capability to conduct lightning impulse currents without destruction and suppress mains follow currents without tripping upstream overcurrent protective devices ensures the availability of the switchgear installation in the event of a lightning strike. This considerably reduces the risk of arc formation in the installation.

In conjunction with the DEHN-signal remote signalling system, the operating state of DEHNbloc Maxi S devices can be monitored at any time.

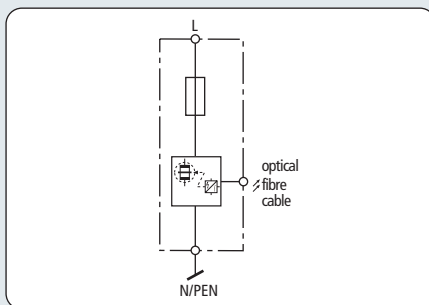
Easy-to-implement optical transmission to the DEHNsignal E 3 remote signalling receiver module ensures safe electrical isolation between the power circuit and the remote signalling circuit.



Coordinated Type 1 Lightning Current Arresters



Dimension drawing DBM 1 255 S



Basic circuit diagram DBM 1 255 S



Coordinated single-pole lightning current arrester with integrated arrester backup fuse for busbars

- Combination of spark gap and integrated backup fuse
- Directly mounted onto PEN/N busbars
- High follow current extinguishing capability and limitation due to RADAX Flow technology

Type	DBM 1 255 S
Part No.	900 220
SPD according to EN 61643-11	Type 1
SPD according to IEC 61643-1/-11	Class I
Max. continuous operating a.c. voltage (U _c)	255 V
Lightning impulse current (10/350 µs) (I _{imp})	25 kA
Specific energy (W/R)	156.25 kJ/ohms
Nominal discharge current (8/20 µs) (I _n)	25 kA
Voltage protection level (U _p)	≤ 2.5 kV (including 80 cm connecting cable)
Follow current extinguishing capability a.c. (I _f)	50 kA _{rms}
Follow current limitation / Selectivity	no tripping of a 32 A gL/gG fuse up to 50 kA _{rms} (prosp.)
Response time (t _A)	≤ 100 ns
Max. mains-side overcurrent protection	not required
Short-circuit withstand capability	100 kA _{rms} (220 kA _{peak})
Temporary overvoltage (TOV) (U _T)	335 V / 5 sec.
TOV characteristics	withstand
Operating temperature range (T _U)	-40°C...+80°C
Number of ports	1
For mounting on	PEN / N busbars min. 35 mm ²
Connection type	cable lug min. 35 mm ² /max. 50 mm ²
Enclosure material	thermoplastic, red, UL 94 V-0
Place of installation	indoor installation
Dimensions (W x H x D)	72 x 89 x 100 mm
Operating state indication	by optical cables via DSI E 3

Accessory for DEHNbloc® Maxi S

LWL ST DSI

Plug for plastic optical fibre cables

Type	LWL ST DSI
Part No.	910 641
Diameter	2.2 mm



LWL DSI 18M

18 metres of plastic optical fibre cable, preferably for use with DEHNbloc Maxi S

Type	LWL DSI 18M
Part No.	910 642
Diameter	2.2 mm
Length	18 m



Accessory for DEHNbloc® Maxi S

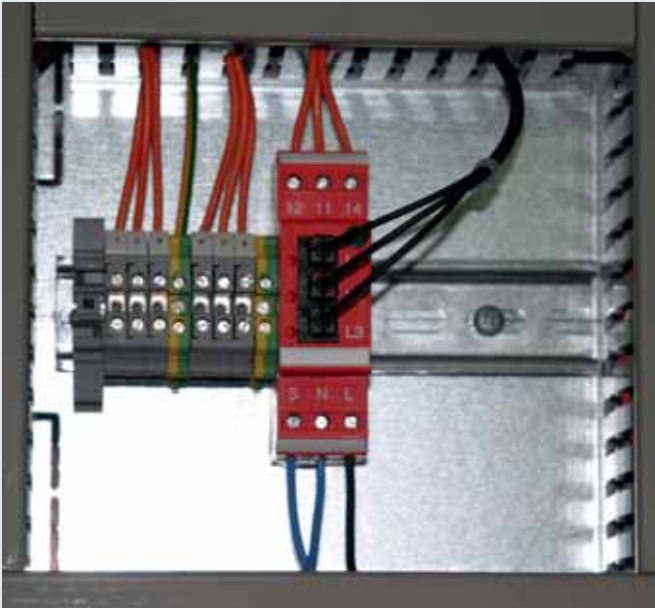
DEHNsignal E 3

Receiver module for optical transmission for selective operating state indication / centralised fault indication of three coordinated DEHNbloc Maxi S and, where appropriate, DEHNgap Maxi S lightning current arresters in five-wire systems

Type	DSI E 3
Part No.	910 631
Supply a.c. voltage (U _N)	230 V



Lightn. Curr. Arr. Type 1



Receiver module for optical transmission for DEHnbloc Maxi S and DEHNgap Maxi S surge protective devices with floating changeover contact

- Operating state indication of the surge protective device connected to it
- Indication of phase failures
- Floating changeover contact
- Selective operating state indication
- Centralised fault indication

DEHNSignal E 3: Receiver module for optical transmission for selective operating state indication / centralised fault indication of three coordinated DEHnbloc Maxi S and, where appropriate, DEHNgap Maxi S lightning current arresters in five-wire systems



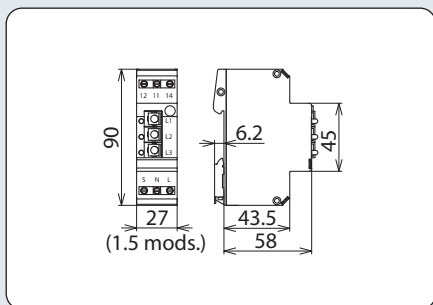
The DEHNSignal E 3 receiver module for optical transmission transmits remote signals of DEHnbloc Maxi S and DEHNgap Maxi S surge protective devices.

The DEHNSignal E 3 receiver module is particularly adapted to the place of installation of the coordinated DEHnbloc Maxi S and DEHNgap Maxi S surge protective devices. Three DEHnbloc Maxi S arresters and, if necessary, the N-PE protective circuit can be remotely monitored by the receiver module via optical fibre cables.

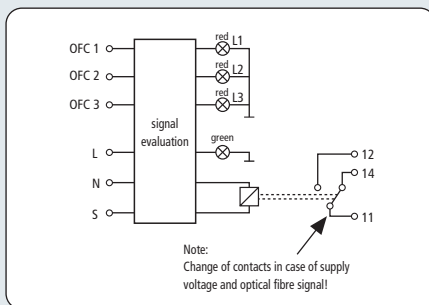
Considering the special installation environment of surge protective devices in a switchgear installation, communication via optical fibre cable between the protective devices and the DEHNSignal E 3 receiver module is a considerable safety benefit.

The operating states of the individual arresters is transmitted to the DEHNSignal E 3 receiver module in the form of an optical signal via EMC-resistant plastic optical fibre cables (OFC). The optical signals are evaluated in the DEHNSignal E 3 receiver module and are converted into an electrical signal. The operating states can be directly read out at the DEHNSignal E 3 receiver module or can be transmitted via a floating changeover contact. The DEHNSignal E 3 receiver module features a green indicator light to check its operating state. In addition to the operating state indication, the three red indicator lights of the selective operating state indication indicate the operating states of the assigned protective devices. The receiver module signals if a protective device of a phase fails. The surge protective devices and the DEHNSignal E 3 receiver module can be easily connected via optical fibre cable by the accessory parts described.

Accessory for Type 1 Arresters



Dimension drawing DSI E 3



Basic circuit diagram DSI E 3



- Operating state indication of the surge protective device connected to it
- Floating changeover contact
- Selective operating state indication

Receiver module for optical transmission for selective operating state indication / centralised fault indication of three coordinated DEHNbloc Maxi S and, where appropriate, DEHNgap Maxi S lightning current arresters in five-wire systems

Type	DSI E 3
Part No.	910 631
Supply a.c. voltage (U _N)	230 V
Power input (P)	< 550 mW
Backup fuse for supply voltage	16 A gL/gG or C 16 A
Operating temperature range	-40°C...+80°C
Signal input	3x via optical fibre plug-in system (LWL ST DSI)
Operating state indication	green LED
Selective operating state indication	3 red LEDs (L1, L2, L3)
For mounting on	35 mm DIN rail acc. to EN 60715
Enclosure material	thermoplastic, red, UL 94 V-0
Degree of protection	IP 20
Capacity	1.5 modules, DIN 43880
Type of remote signalling contact	floating changeover contact
a.c. switching capacity	250 V/0.5 A
d.c. switching capacity	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A
Cross-sectional area	min. 0.5 mm ² solid/flexible; max. 4 mm ² solid/flexible
Max. distance with LWL DSI 18M	6 m
Test standards	EN 61010-1:1993 and EN 61010-1/A2:1995

Accessory for DEHNsignal

LWL ST DSI

Plug for plastic optical fibre cables

Type	LWL ST DSI
Part No.	910 641
Diameter	2.2 mm



Accessory for DEHNsignal

LWL DSI 18M

18 metres of plastic optical fibre cable, preferably for use with DEHNbloc Maxi S

Type	LWL DSI 18M
Part No.	910 642
Diameter	2.2 mm
Length	18 m





For protecting d.c. consumer's installations against surges and even direct lightning strikes. For installation in conformity with the lightning protection zones concept at the boundaries from $O_A - 1$.



- Coordinated spark-gap-based lightning current arrester consisting of a base part and plug-in protection module
- Spark gap technology particularly suited for use in d.c. circuits
- Discharge capacity up to 25 kA (10/350 μ s)
- Directly coordinated with DEHNguard surge protective devices without additional cable length
- Low voltage protection level
- Operating state/fault indication by indicator flag in the inspection window
- Easy replacement of protection modules due to module locking system with module release button

DEHNsecure M 1 ...:	Coordinated modular single-pole lightning current arrester for d.c. applications
DEHNsecure M 1 ... FM:	With remote signalling contact for monitoring device (floating changeover contact)
DEHNsecure M 2P ...:	Coordinated modular two-pole lightning current arrester for d.c. applications
DEHNsecure M 2P ... FM:	With remote signalling contact for monitoring device (floating changeover contact)

The modular devices of the DEHNsecure product family are coordinated lightning current arresters with a functional design.

They can be energy coordinated with Type 2 surge arresters of the DEHNguard family without additional cable lengths or decoupling coils. The DEHNsecure arresters combine high performance and user-friendliness in a single device. Their electrical parameters were rated for the most stringent requirements in lightning and surge protection systems. The internal structure of the DEHNsecure spark gap is ideally suited for use in d.c. circuits. The device concept allows to prevent mains follow currents up to 2000 A d.c. at the early stages of development.

With this new arrester series, a consistent lightning protection zones concept including the cross-boundary d.c. lines can now be implemented. Furthermore, the leakage-current-free version of the spark-gap-based arrester offers numerous advantages when used in insulation monitored systems or for applications with high demands on the self-energy consumption.

DEHNsecure arresters are, for example, used in safety lighting systems, emergency power supply systems, d.c. systems for direct supply of d.c. drives, control circuits and any kind of battery-operated power supply system.

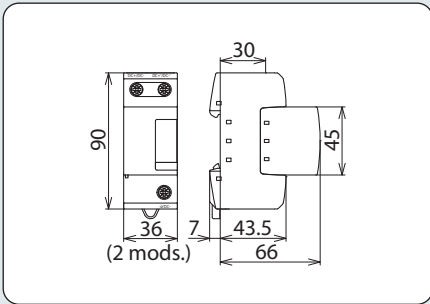
DEHNsecure M 1 60 (FM) and DEHNsecure M 2P 60 (FM) were specifically developed for Remote Radio Head (RRH) applications. Designed for potentially high load currents, they leave enough leeway for future developments in the field of mobile communication.

DEHNsecure M 1 242 (FM) is used for safety lighting systems. The relevant consumers are supplied with a.c. voltage during normal operation and with battery-operated d.c. voltage during emergency operation. As over-voltages may occur during both operating states, DEHNsecure M 1 242 is suited for direct and alternating currents (backup fuse max. 10 A gL/gG).

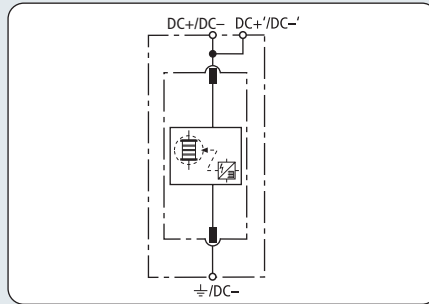
The modular DEHNsecure arresters combine safety and user-friendliness in a single device. The vibration-proof module locking system, for example, is unique. Shock or vibration during transport or operation or enormous mechanical impulse loads resulting from discharges do not affect the module locking system which ensures safe fixation both for the base part and protection module. Nevertheless, the protection modules can be easily replaced without tools by simply pressing the user-friendly module release button. The mechanically coded base part and protection module ensure against installing an incorrect module. DEHNsecure arresters incorporate double terminals, allowing series connection of the arresters in a space-saving and cost-effective way according to IEC 60364-5-53 requirements for nominal currents up to 125 A.

The operating state/fault indication of DEHNsecure immediately provides information on the operating state of the device even if no operating current is present. Apart from the standard visual indication with red and green indicator flags, DEHNsecure ... FM devices have an additional remote signalling output. With its floating changeover contact, the remote signal can be used as a break or make contact according to the particular circuit concept.

NEW



Dimension drawing DSE M 1 ...



Basic circuit diagram DSE M 1 ...

Coordinated modular single-pole lightning current arrester for d.c. applications

- Coordinated spark-gap-based lightning current arrester consisting of a base part and plug-in protection module
- Spark gap technology particularly suited for use in d.c. circuits
- Directly coordinated with DEHNguard surge protective device without additional cable length

Lightn. Curr. Arr. Type 1

Type	DSE M 1 60	DSE M 1 220	DSE M 1 242
Part No.	971 121	971 120	971 122
SPD classification according to EN 61643-11	Type 1	Type 1	Type 1
SPD classification according to IEC 61643-1/-11	Class I	Class I	Class I
Max. continuous operating d.c. voltage (U _c)	60 V	220 V	242 V
Lightning impulse current (10/350 μs) (I _{imp})	25 kA	25 kA	25 kA
Specific energy (W/R)	156.25 kJ/ohms	156.25 kJ/ohms	156.25 kJ/ohms
Nominal discharge current (8/20 μs) (I _n)	25 kA	25 kA	25 kA
Voltage protection level (U _p)	≤ 1.5 kV	≤ 2,5 kV	≤ 2,5 kV
Response time (t _A)	≤ 100 ns	≤ 100 ns	≤ 100 ns
Short-circuit withstand capability for max. mains-side overcurrent protection d.c.	2000 A	2000 A	2000 A
Max. mains-side overcurrent protection	250 A gL/gG	250 A gL/gG	250 A gL/gG
Max. backup fuse (DC+/DC- -> DC+′/DC-′)	125 A gL/gG	125 A gL/gG	125 A gL/gG
Operating temperature range (parallel connection) (T _{UP})	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C
Operating temperature range (series connection) (T _{US})	-40°C...+60°C	-40°C...+60°C	-40°C...+60°C
Operating state/fault indication	green / red	green / red	green / red
Number of ports	1	1	1
Cross-sectional area (DC+/DC-, DC+′/DC-′, ±/DC-) (min.)	10 mm ² solid/flexible	10 mm ² solid/flexible	10 mm ² solid/flexible
Cross-sectional area (DC+/DC-, ±/DC-) (max.)	50 mm ² stranded/35 mm ² flexible	50 mm ² stranded/35 mm ² flexible	50 mm ² stranded/35 mm ² flexible
Cross-sectional area (DC+′/DC-′) (max.)	35 mm ² stranded/25 mm ² flexible	35 mm ² stranded/25 mm ² flexible	35 mm ² stranded/25 mm ² flexible
For mounting on	35 mm DIN rail acc. to EN 60715	35 mm DIN rail acc. to EN 60715	35 mm DIN rail acc. to EN 60715
Enclosure material	thermoplastic, red, UL 94 V-0	thermoplastic, red, UL 94 V-0	thermoplastic, red, UL 94 V-0
Place of installation	indoor installation	indoor installation	indoor installation
Degree of protection	IP 20	IP 20	IP 20
Capacity	2 modules, DIN 43880	2 modules, DIN 43880	2 modules, DIN 43880
Extended technical data when used for safety lighting systems			
(d.c. and a.c. operation possible)	no	no	yes
- Max. continuous operating a.c. voltage (U _c)	—	—	253 V
- Max. backup fuse	—	—	10 A gL/gG

Accessory for DEHNsecure M

DSE M Spark-Gap-Based Protection Module

Spark-gap-based protection module

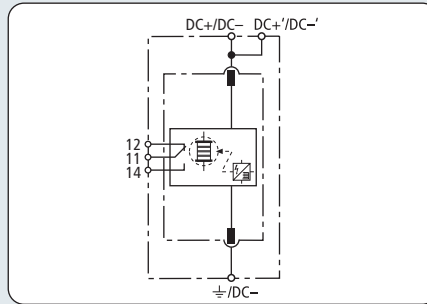
Type DSE MOD ...	60	220	242
Part No.	971 001	971 002	971 003
Max. continuous operating d.c. voltage (U _c)	60 V	220 V	242 V



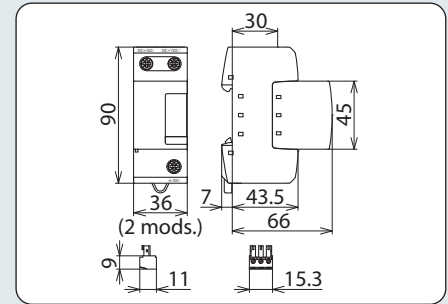
DEHNsecure M 1 ... FM

Coordinated Type 1 Lightning Current Arresters

NEW



Basic circuit diagram DSE M 1 ... FM



Dimension drawing DSE M 1 ... FM

- Coordinated spark-gap-based lightning current arrester consisting of a base part and plug-in protection module
- Spark gap technology particularly suited for use in d.c. circuits
- Directly coordinated with DEHNgard surge protective device without additional cable length

Coordinated modular single-pole lightning current arrester for d.c. applications; with remote signalling contact for monitoring device (floating changeover contact)

Type	DSE M 1 60 FM	DSE M 1 220 FM	DSE M 1 242 FM
Part No.	971 126	971 125	971 127
SPD classification according to EN 61643-11	Type 1	Type 1	Type 1
SPD classification according to IEC 61643-11-11	Class I	Class I	Class I
Max. continuous operating d.c. voltage (U_c)	60 V	220 V	242 V
Lightning impulse current (10/350 μ s) (I_{imp})	25 kA	25 kA	25 kA
Specific energy (W/R)	156.25 kJ/ohms	156.25 kJ/ohms	156.25 kJ/ohms
Nominal discharge current (8/20 μ s) (I_n)	25 kA	25 kA	25 kA
Voltage protection level (U_p)	≤ 1.5 kV	≤ 2.5 kV	≤ 2.5 kV
Response time (t_A)	≤ 100 ns	≤ 100 ns	≤ 100 ns
Short-circuit withstand capability for max. mains-side overcurrent protection d.c.	2000 A	2000 A	2000 A
Max. mains-side overcurrent protection	250 A gL/gG	250 A gL/gG	250 A gL/gG
Max. backup fuse (DC+/DC- -> DC+[']/DC-['])	125 A gL/gG	125 A gL/gG	125 A gL/gG
Operating temperature range (parallel connection) (T_{UP})	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C
Operating temperature range (series connection) (T_{US})	-40°C...+60°C	-40°C...+60°C	-40°C...+60°C
Operating state/fault indication	green / red	green / red	green / red
Number of ports	1	1	1
Cross-sectional area (DC+/DC-, DC+[']/DC-['], \perp/DC-) (min.)	10 mm ² solid/flexible	10 mm ² solid/flexible	10 mm ² solid/flexible
Cross-sectional area (DC+/DC-, \perp/DC-) (max.)	50 mm ² stranded/35 mm ² flexible	50 mm ² stranded/35 mm ² flexible	50 mm ² stranded/35 mm ² flexible
Cross-sectional area (DC+[']/DC-[']) (max.)	35 mm ² stranded/25 mm ² flexible	35 mm ² stranded/25 mm ² flexible	35 mm ² stranded/25 mm ² flexible
For mounting on	35 mm DIN rail acc. to EN 60715	35 mm DIN rail acc. to EN 60715	35 mm DIN rail acc. to EN 60715
Enclosure material	thermoplastic, red, UL 94 V-0	thermoplastic, red, UL 94 V-0	thermoplastic, red, UL 94 V-0
Place of installation	indoor installation	indoor installation	indoor installation
Degree of protection	IP 20	IP 20	IP 20
Capacity	2 modules, DIN 43880	2 modules, DIN 43880	2 modules, DIN 43880
Type of remote signalling contact	changeover contact	changeover contact	changeover contact
a.c. switching capacity	250 V/0.5 A	250 V/0.5 A	250 V/0.5 A
d.c. switching capacity	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A
Cross-sectional area for remote signalling terminals	max. 1.5 mm ² solid/flexible	max. 1.5 mm ² solid/flexible	max. 1.5 mm ² solid/flexible
Extended technical data when used for safety lighting systems			
(d.c. and a.c. operation possible)	no	no	yes
– Max. continuous operating a.c. voltage (U_c)	—	—	253 V
– Max. backup fuse	—	—	10 A gL/gG

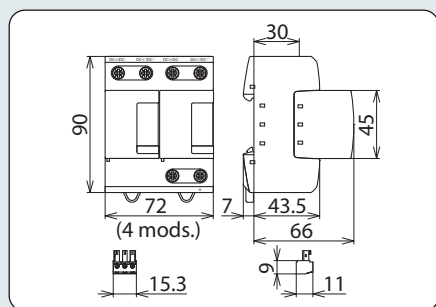
Accessory for DEHNsecure M

DSE PE Spark-Gap-Based Protection Module

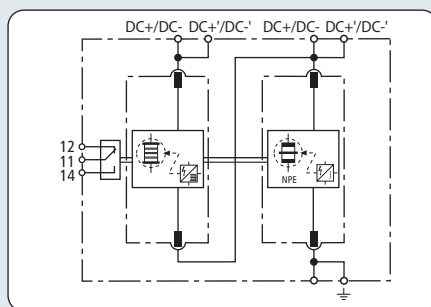
Spark-gap-based protection module



Type DSE MOD ...	60	220	242
Part No.	971 001	971 002	971 003
Max. continuous operating d.c. voltage (U_c)	60 V	220 V	242 V



Dimension drawing DSE M 2P ... FM



Basic circuit diagram DSE M 2P ... FM



- Coordinated spark-gap-based lightning current arrester consisting of a base part and plug-in protection module
- Spark gap technology particularly suited for use in d.c. circuits
- Directly coordinated with DEHNguard surge protective device without additional cable length

Coordinated modular two-pole lightning current arrester for d.c. applications ("1+1" circuits); FM version with floating remote signalling contact

Lightn. Curr. Arr. Type 1

Type	DSE M 2P 60	DSE M 2P 60 FM
Part No.	971 221	971 226
SPD classification according to EN 61643-11	Type 1	Type 1
SPD classification according to IEC 61643-1-11	Class I	Class I
Max. continuous operating d.c. voltage (U _C)	60 V	60 V
Lightning impulse current (10/350) (DC+/DC- -> DC-/DC+) (DC-/DC+ -> ⊕)	25 / 50 kA	25 / 50 kA
Specific energy (DC+/DC- -> DC-/DC+) (DC-/DC+ -> ⊕) (W/R)	156.25 kJ/ohms / 625.00 kJ/ohms	156.25 kJ/ohms / 625.00 kJ/ohms
Nominal discharge current (8/20 μs) (I _n)	25 kA	25 kA
Voltage protection level (DC+/DC- -> DC-/DC+) (DC-/DC+ -> ⊕) (U _p)	≤ 1.5 kV / ≤ 1.5 kV	≤ 1.5 kV / ≤ 1.5 kV
Response time (t _A)	≤ 100 ns	≤ 100 ns
Short-circuit withstand capability for max. mains-side overcurrent protection d.c.	2000 A	2000 A
Max. mains-side overcurrent protection	250 A gL/gG	250 A gL/gG
Max. backup fuse (DC+/DC- -> DC+/DC-)	125 A gL/gG	125 A gL/gG
Operating temperature range (parallel connection) (T _{UP})	-40°C...+80°C	-40°C...+80°C
Operating temperature range (series connection) (T _{US})	-40°C...+60°C	-40°C...+60°C
Operating state/fault indication	green / red	green / red
Number of ports	1	1
Cross-sectional area (min.)	10 mm ² solid/flexible	10 mm ² solid/flexible
Cross-sectional area (DC+/DC-, DC-/DC+, ⊕) (max.)	50 mm ² stranded/35 mm ² flexible	50 mm ² stranded/35 mm ² flexible
Cross-sectional area (DC+ /DC-, DC- /DC+) (max.)	35 mm ² stranded/25 mm ² flexible	35 mm ² stranded/25 mm ² flexible
For mounting on	35 mm DIN rail acc. to EN 60715	35 mm DIN rail acc. to EN 60715
Enclosure material	thermoplastic, red, UL 94 V-0	thermoplastic, red, UL 94 V-0
Place of installation	indoor installation	indoor installation
Degree of protection	IP 20	IP 20
Capacity	4 modules, DIN 43880	4 modules, DIN 43880
Type of remote signalling contact	—	changeover contact
a.c. switching capacity	—	250 V/0.5 A
d.c. switching capacity	—	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A
Cross-sectional area for remote signalling terminals	—	max. 1.5 mm ² solid/flexible

Accessory for DEHNsecure M

DSE M/PE Spark-Gap-Based Protection Module

Spark-gap-based protection module

Type	DSE MOD 60	DSE MOD PE 60
Part No.	971 001	971 010
Max. continuous operating d.c. voltage (U _C)	60 V	60 V



Lightn. Curr. Arr. Type 1



- Spark gap technology particularly for use in d.c. circuits
- Operating state / fault indication by green / red indicator flag in the inspection window
- Easy replacement of protection modules without tools due to module locking system with module release button

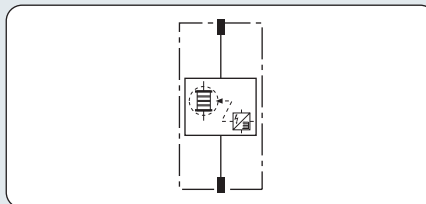


For protecting d.c. consumer's installations against surges and even direct lightning strikes. For installation in conformity with the lightning protection zones concept at the boundaries from $0_A - 1$.

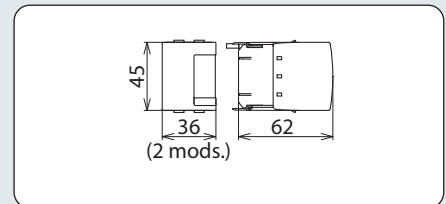
DSE MOD ...: Spark-gap-based protection module

DSE M Spark-Gap-Based Protection Module

NEW



Basic circuit diagram DSE MOD ...



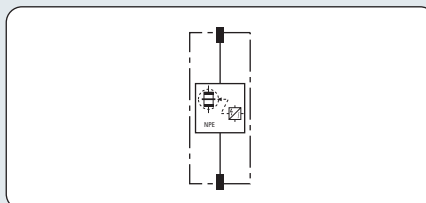
Dimension drawing DSE MOD ...

Spark-gap-based protection module

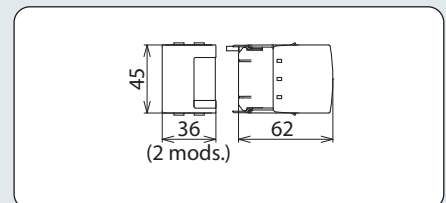
Type	DSE MOD 60	DSE MOD 220	DSE MOD 242
Part No.	971 001	971 002	971 003
Max. continuous operating d.c. voltage (U_c)	60 V	220 V	242 V
Lightning impulse current (10/350 μ s) (I_{imp})	25 kA	25 kA	25 kA
Specific energy (W/R)	156.25 kJ/ohms	156.25 kJ/ohms	156.25 kJ/ohms

DSE PE Spark-Gap-Based Protection Module

NEW



Basic circuit diagram DSE MOD ...



Dimension drawing DSE MOD ...

Spark-gap-based protection module

Type	DSE MOD PE 60
Part No.	971 010
Max. continuous operating d.c. voltage (U_c)	60 V
Lightning impulse current (10/350 μ s) (I_{imp})	50 kA
Specific energy (W/R)	625.00 kJ/ohms

- Encapsulated non-exhausting creepage discharge spark gap
- RADAX Flow spark gap technology with high follow current limitation
- Energy coordination with other arresters of the Red/Line product family
- Can also be used upstream of meter panels due to its high insulation resistance
- Multifunctional terminal for connecting conductors and busbars
- Single-pole and three-pole version (lightning impulse currents up to 100 kA depending on the system configuration)
- Modular single-pole version also available



For protecting low-voltage consumer's installations against surges and even direct lightning strikes. For installation in conformity with the lightning protection zones concept at the boundaries from $O_A - 1$.

- DEHNbloc H M 1 255:** Modular single-pole lightning current arrester with high follow current limitation
DEHNbloc 1 255 H: Single-pole lightning current arrester with high follow current limitation
DEHNbloc 3 255 H: Three-pole lightning current arrester with high follow current limitation

The spark gaps of the DEHNbloc lightning current arresters allow a compact configuration of low-voltage distribution boards. By using pressurised, encapsulated creepage discharge spark gaps, no safety distance from busbars and special flameproof enclosures are necessary.

With a lightning current discharge capacity up to 50 kA (10/350 μ s) per pole, DEHNbloc devices fulfil the most stringent requirements of national and international lightning protection and application standards.

The consistent improvement of the integration concept made the DEHNbloc devices even more efficient: With DEHNbloc H, the ground-breaking RADAX Flow spark gap technology for follow current extinction and limitation was integrated into the DEHNbloc family.

The RADAX Flow technology prevents that system operation is disrupted due to a tripped line protection as soon as the arrester operates. In times where systems increasingly depend on a properly functioning electrical infrastructure, this is an indispensable product feature. Thanks to the patented RADAX Flow principle, even the amplitude of short circuit currents in installations up to 50 kA_{rms} can be limited to approx. 500 A and extinguished after approximately 5 ms. This feature ensures selectivity even in case of low-value fuses.

But the DEHNbloc H family concept also stands out due to other product features: With its double terminals on the phase and earth side, the single-pole DEHNbloc 1 255 H device offers various application options.

The DBH M 1 255 device with a new arrester design features the approved module release system that safely fixes the protection module to the base part even at maximum loads on the protection module. The modules can be easily replaced without tools by simply pressing the user-friendly module release button of the protection module.

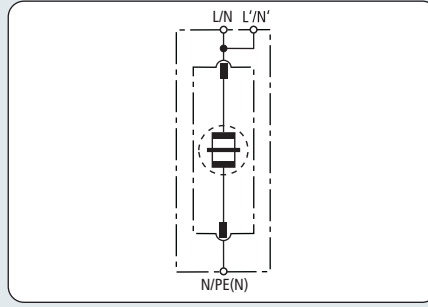
The devices incorporate double terminals suitable for all conductors, allowing series connection of even three-pole DEHNbloc 3 255 H arresters in a space-saving and cost-effective way according to IEC 60364-5-53 requirements for nominal currents up to 125 A.

If DEHNbloc is to be used with other DIN rail mounted devices, multifunctional terminals are ideally suited for providing connection for conductors and busbars.

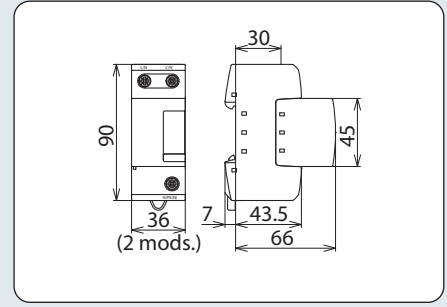
DEHNbloc H

Type 1 Lightning Current Arresters

NEW



Basic circuit diagram DBH M 1 255



Dimension drawing DBH M 1 255

- Encapsulated non-exhausting creepage discharge spark gap
- RADAX Flow spark gap technology with high follow current limitation
- Can also be used upstream of meter panels due to its high insulation resistance

Modular single-pole lightning current arrester with high follow current limitation for $U_C = 255\text{ V}$

Type	DBH M 1 255
Part No.	961 122
SPD according to EN 61643-11	Type 1
SPD according to IEC 61643-1/-11	Class I
Nominal a.c. voltage (U_N)	230 V
Max. continuous operating a.c. voltage (U_C)	255 V
Lightning impulse current (10/350 μs) (I_{imp})	50 kA
Nominal discharge current (8/20 μs) (I_N)	50 kA
Voltage protection level (U_P)	$\leq 4\text{ kV}$
Follow current extinguishing capability a.c. (I_{fi})	50 kA _{rms}
Follow current limitation / Selectivity	no tripping of a 32 A gL/gG fuse up to 50 kA _{rms} (prosp.)
Response time (t_A)	$\leq 100\text{ ns}$
Max. backup fuse (L) up to $I_K = 50\text{ kA}_{rms}$ ($t_a \leq 0.2\text{ s}$)	500 A gL/gG
Max. backup fuse (L) up to $I_K = 50\text{ kA}_{rms}$ ($t_a \leq 5\text{ s}$)	315 A gL/gG
Max. backup fuse (L) for $I_K > 50\text{ kA}_{rms}$	200 A gL/gG
Max. backup fuse (L-L')	125 A gL/gG
Temporary overvoltage (TOV) (U_T)	440 V / 5 sec.
TOV characteristics	withstand
Operating temperature range (parallel connection) (T_{UP})	-40°C...+80°C
Operating temperature range (series connection) (T_{US})	-40°C...+60°C
Number of ports	1
Cross-sectional area (L/N, L'/N', N/PE(N)) (min.)	10 mm ² solid/flexible
Cross-sectional area (L/N, N/PE(N)) (max.)	50 mm ² stranded/35 mm ² flexible
Cross-sectional area (L'/N') (max.)	35 mm ² stranded/25 mm ² flexible
For mounting on	35 mm DIN rail acc. to EN 60715
Enclosure material	thermoplastic, red, UL 94 V-0
Place of installation	indoor installation
Degree of protection	IP 20
Capacity	2 modules, DIN 43880

Accessory for DEHNbloc®

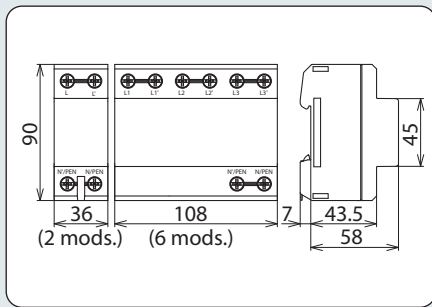
DB H Spark-Gap-Based Protection Module

Spark-gap-based protection module

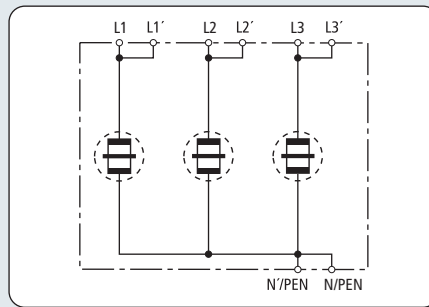


Type	DBH MOD 255
Part No.	961 022
Max. continuous operating a.c. voltage (U_C)	255 V

Lightn. Curr. Arr. Type 1



Dimension drawing DB 1 255 H / DB 3 255 H



Basic circuit diagram DB 1 255 H / DB 3 255 H



- Encapsulated non-exhausting creepage discharge spark gap
- RADAX Flow spark gap technology with high follow current limitation
- Can also be used upstream of meter panels due to its high insulation resistance

Single-pole and three-pole lightning current arrester with high follow current limitation

Type	DB 1 255 H	DB 3 255 H
Part No.	900 222	900 120
SPD according to EN 61643-11	Type 1	Type 1
SPD according to IEC 61643-1/-11	Class I	Class I
Nominal a.c. voltage (U_N)	230 V	230/400 V
Max. continuous operating a.c. voltage (U_C)	255 V	255 V
Lightning impulse current (10/350 μ s) (I_{imp})	50 kA	—
Specific energy (W/R)	625.00 kJ/ohms	—
Lightning impulse current (10/350 μ s) [L-N/PEN] (I_{imp})	—	50 kA
Specific energy [L-N/PEN] (W/R)	—	625.00 kJ/ohms
Lightning impulse current (10/350 μ s) [L1+L2+L3-N/PEN] (I_{total})	—	100 kA
Specific energy [L1+L2+L3-N/PEN] (W/R)	—	2.50 MJ/ohms
Nominal discharge current (8/20 μ s) (I_N)	50 kA	50 / 100 kA
Voltage protection level (U_p)	≤ 4 kV	≤ 4 kV
Follow current extinguishing capability a.c. (I_{fi})	50 kA _{rms}	50 kA _{rms}
Follow current limitation / Selectivity	no tripping of a 32 A gL/gG fuse up to 50 kA _{rms} (prosp.)	
Response time (t_A)	≤ 100 ns	≤ 100 ns
Max. backup fuse up to $I_K = 50$ kA _{rms} ($t_a \leq 0.2$ s)	500 A gL/gG	500 A gL/gG
Max. backup fuse up to $I_K = 50$ kA _{rms} ($t_a \leq 5$ s)	315 A gL/gG	315 A gL/gG
Max. backup fuse for $I_K > 50$ kA _{rms}	200 A gL/gG	200 A gL/gG
Max. backup fuse (L-L')	125 A gL/gG	125 A gL/gG
Temporary overvoltage (TOV) (U_T)	335 V / 5 sec.	335 V / 5 sec.
TOV characteristics	withstand	withstand
Operating temperature range (parallel connection) (T_{Up})	-40°C...+80°C	-40°C...+80°C
Operating temperature range (series connection) (T_{Us})	-40°C...+60°C	-40°C...+60°C
Number of ports	1	1
Cross-sectional area (L, L', N/PEN, N'/PEN) (min.)	10 mm ² solid/flexible	—
Cross-sectional area (L, N/PEN) (max.)	50 mm ² stranded/35 mm ² flexible	—
Cross-sectional area (L', N'/PEN) (max.)	35 mm ² stranded/25 mm ² flexible	—
Cross-sectional area (L1, L1', L2, L2', L3, L3', N/PEN, N'/PEN)	—	10 mm ² solid/flexible
Cross-sectional area (L1, L2, L3, N/PEN)	—	50 mm ² stranded/35 mm ² flexible
Cross-sectional area (L1', L2', L3', N'/PEN)	—	35 mm ² stranded/25 mm ² flexible
For mounting on	35 mm DIN rail acc. to EN 60715	35 mm DIN rail acc. to EN 60715
Enclosure material	thermoplastic, red, UL 94 V-0	thermoplastic, red, UL 94 V-0
Place of installation	indoor installation	indoor installation
Degree of protection	IP 20	IP 20
Capacity	2 modules, DIN 43880	6 modules, DIN 43880
Approvals	KEMA, VDE	KEMA, VDE

- Discharge capacity up to 100 kA (10/350 μ s)
- Total current arrester specifically designed for installation in "3+1" and "1+1" circuits of TT systems according to IEC 60364-5-53 between neutral conductor N and protective conductor PE
- Creepage discharge spark gap technology
- DEHNgap M model available with operating state/fault indication in the inspection window



For protecting low-voltage consumer's installations against surges and even direct lightning strikes. For installation in conformity with the lightning protection zones concept at the boundaries from $0_A - 1$ (3+1 circuit).

DEHNgap M 255 (FM):	Coordinated modular single-pole N-PE lightning current arrester
DEHNgap Maxi 1 255 S:	Coordinated single-pole N-PE lightning current arrester for busbars
DEHNgap Maxi 440 (FM):	Coordinated single-pole N-PE lightning current arrester for $U_C = 440$ V a.c.
DEHNgap H 255:	Modular single-pole N-PE lightning current arrester

Being total current arresters between the neutral and protective conductor in TT systems, the single-pole N-PE lightning current arresters of type DEHNgap M, DEHNgap Maxi, DEHNgap Maxi S, and DEHNgap H M help to ensure fulfilling the requirements for protection of personnel and equipment in "1+1" or "3+1" circuits. The creepage discharge spark gaps were specifically developed to meet this challenge. With a discharge capacity up to 100 kA (10/350 μ s), they fulfil the most stringent requirements of national and international lightning protection standards. Their leakage-current-free spark gap design allows the devices to be used upstream of the meter panel according to national regulations (German VDN guideline).

The DEHNgap M, DEHNgap Maxi S and DEHNgap Maxi coordinated N-PE lightning current arresters hold a special position among total current arresters. Due to their low voltage protection level, they can be directly coordinated with N-PE surge arresters of the DEHNguard M family and DEHNgap C S surge arresters without additional decoupling coil. If lightning current arresters are to be installed along with surge arresters at the same location, no additional DEHNgap C S is required thanks to the low voltage protection level of DEHNgap M and DEHNgap Maxi.

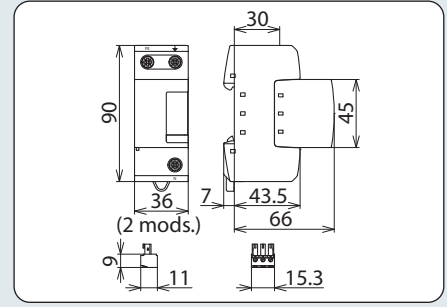
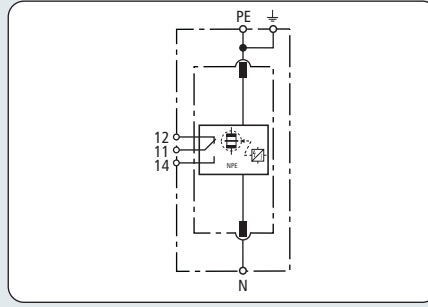
The design and installation of DEHNgap Maxi S arresters are adapted to the unique nature of low-voltage switchgear installations and entirely complement the use of DEHNBloc Maxi S arresters.

The multifunctional terminals of the DIN rail mounted DEHNgap M and DEHNgap H M devices are suitable for connecting conductors and busbars, allowing comfortable wiring with other DIN rail mounted terminals. With its functional Red/Line design, DEHNgap M combines safety and user-friendliness in a single device. The mechanical operating state and fault indication as well as the unique module locking system stand for fulfilling high safety requirements. The module locking system fixes the protection modules to the base part. Neither vibration nor shock during transport nor the enormous electromagnetic forces of discharge can loosen the protection modules. Nevertheless, they can be easily replaced without tools by simply pressing the user-friendly module release button of the protection module. Each protection module is mechanically coded to ensure against installing an incorrect module. Apart from the standard visual indication of DEHNgap M, DEHNgap M ... FM features a three-pole remote signalling terminal. With its floating changeover contact, the remote signal can be used as a break or make contact according to the particular circuit concept.



DEHNgap M 255 (FM)

N-PE Lightning Current Arresters



Basic circuit diagram DGP M 255 FM

Dimension drawing DGP M 255 FM

- Discharge capacity up to 100 kA (10/350 μ s)
- Total current arrester specifically designed for installation in "3+1" and "1+1" circuits of TT systems according to IEC 60364-5-53 between neutral conductor N and protective conductor PE
- Creepage discharge spark gap technology

Coordinated modular single-pole N-PE lightning current arrester for $U_c = 255$ V; optionally available with remote signalling contact for monitoring system (floating changeover contact)

Type	DGP M 255	DGP M 255 FM
Part No.	961 101	961 105
SPD according to EN 61643-11	Type 1	Type 1
SPD according to IEC 61643-1/-11	Class I	Class I
Max. continuous operating a.c. voltage (U_c)	255 V	255 V
Lightning impulse current (10/350 μ s) (I_{imp})	100 kA	100 kA
Specific energy (W/R)	2.50 MJ/ohms	2.50 MJ/ohms
Nominal discharge current (8/20 μ s) (I_n)	100 kA	100 kA
Voltage protection level (U_p)	≤ 1.5 kV	≤ 1.5 kV
Follow current extinguishing capability a.c. (I_{fi})	100 A _{rms}	100 A _{rms}
Response time (t_A)	≤ 100 ns	≤ 100 ns
Temporary overvoltage (TOV)	1200 V / 200 ms	1200 V / 200 ms
TOV characteristics	withstand	withstand
Operating temperature range (parallel connection) (T_{UP})	-40°C...+80°C	-40°C...+80°C
Operating temperature range (series connection) (T_{US})	-40°C...+60°C	-40°C...+60°C
Operating state/fault indication	green / red	green / red
Number of ports	1	1
Cross-sectional area (N, PE, \pm) (min.)	10 mm ² solid/flexible	10 mm ² solid/flexible
Cross-sectional area (N, PE) (max.)	50 mm ² stranded/35 mm ² flexible	50 mm ² stranded/35 mm ² flexible
Cross-sectional area (\pm) (max.)	35 mm ² stranded/25 mm ² flexible	35 mm ² stranded/25 mm ² flexible
For mounting on	35 mm DIN rail acc. to EN 60715	35 mm DIN rail acc. to EN 60715
Enclosure material	thermoplastic, red, UL 94 V-0	thermoplastic, red, UL 94 V-0
Place of installation	indoor installation	indoor installation
Degree of protection	IP 20	IP 20
Capacity	2 modules, DIN 43880	2 modules, DIN 43880
Approvals	VDE, KEMA, UL	VDE, KEMA, UL
Type of remote signalling contact	—	changeover contact
a.c. switching capacity	—	250 V/0.5 A
d.c. switching capacity	—	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A
Cross-sectional area for remote signalling terminals	—	max. 1.5 mm ² solid/flexible

Accessory for DEHNgap

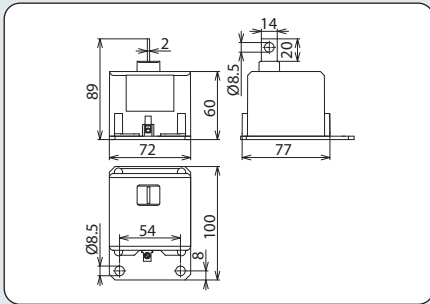
DGP M – 100 kA N-PE Spark-Gap-Based Protection Module

100 kA N-PE spark-gap-based protection module for use with all modular DEHNgap M arresters

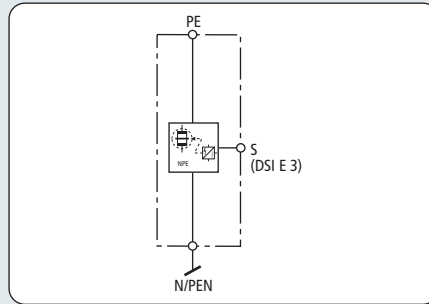


Type	DGP M MOD 255
Part No.	961 010
Max. continuous operating a.c. voltage (U_c)	255 V

N-PE Arresters Type 1



Dimension drawing DGPM 1 255 S



Basic circuit diagram DGPM 1 255 S



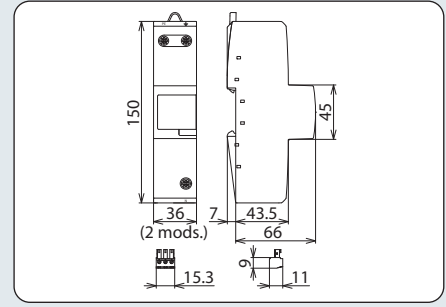
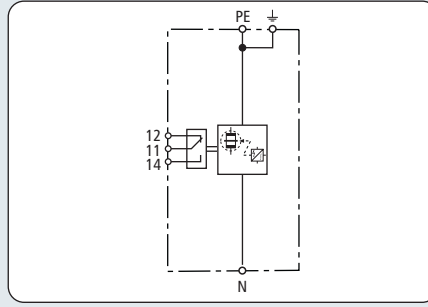
- Discharge capacity up to 100 kA (10/350 μ s)
- Total current arrester specifically designed for installation in "3+1" and "1+1" circuits of TT systems according to IEC 60364-5-53 between neutral conductor N and protective conductor PE
- Creepage discharge spark gap technology

Coordinated single-pole N-PE lightning current arrester for busbars

Type	DGPM 1 255 S
Part No.	900 050
SPD according to EN 61643-11	Type 1
SPD according to IEC 61643-1/-11	Class I
Max. continuous operating a.c. voltage (U_c)	255 V
Lightning impulse current (10/350 μ s) (I_{imp})	100 kA
Specific energy (W/R)	2.50 MJ/ohms
Nominal discharge current (8/20 μ s) (I_n)	100 kA
Voltage protection level (U_p)	≤ 2.5 kV (including 80 cm connecting cable)
Follow current extinguishing capability a.c. (I_{fi})	100 A _{rms}
Response time (t_d)	≤ 100 ns
Temporary overvoltage (TOV)	1200 V / 200 ms
TOV characteristics	withstand
Operating temperature range (T_U)	-40°C...+80°C
Number of ports	1
For mounting on	N busbars min. 35 mm ²
Connection	via cable lug min. 35 mm ² /max. 50 mm ²
Operating state monitoring	via DEHNSignal DSI E 3
Connection for DSI E 3 (S) min.	1 mm ² solid/flexible
Connection for DSI E 3 (S) max.	2.5 mm ² solid/flexible
Enclosure material	thermoplastic, red, UL 94 V-0
Place of installation	indoor installation
Dimensions (W x H x D)	72 x 89 x 100 mm

DEHNgap Maxi 440 (FM)

N-PE Lightning Current Arresters



Basic circuit diagram DGPM 440 FM

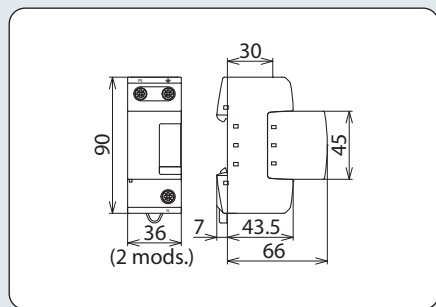
Dimension drawing DGPM 440

- Discharge capacity up to 100 kA (10/350 μ s)
- Total current arrester specifically designed for installation in "3+1" and "1+1" circuits of TT systems according to IEC 60364-5-53 between neutral conductor N and protective conductor PE
- Creepage discharge spark gap technology

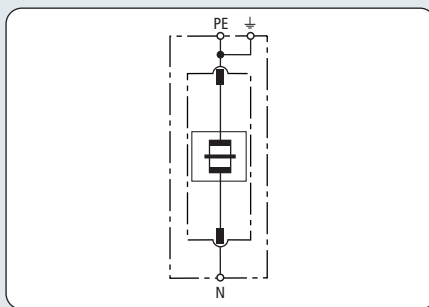
Coordinated single-pole N-PE lightning current arrester for $U_c = 440$ V; optionally available with remote signalling contact for monitoring device (floating changeover contact)

Type	DGPM 440	DGPM 440 FM
Part No.	961 160	961 165
SPD according to EN 61643-11	Type 1	Type 1
SPD according to IEC 61643-1/-11	Class I	Class I
Max. continuous operating a.c. voltage (U_c)	440 V	440 V
Lightning impulse current (10/350 μ s) (I_{imp})	100 kA	100 kA
Specific energy (W/R)	2.50 MJ/ohms	2.50 MJ/ohms
Nominal discharge current (8/20 μ s) (I_n)	100 kA	100 kA
Voltage protection level (U_p)	≤ 2.5 kV	≤ 2.5 kV
Follow current extinguishing capability a.c. (I_{fi})	100 A _{rms}	100 A _{rms}
Response time (t_A)	≤ 100 ns	≤ 100 ns
Temporary overvoltage (TOV)	1200 V / 200 ms	1200 V / 200 ms
TOV characteristics	withstand	withstand
Operating temperature range (parallel connection) (T_{UP})	-40°C...+80°C	-40°C...+80°C
Operating temperature range (series connection) (T_{US})	-40°C...+60°C	-40°C...+60°C
Operating state/fault indication	green / red	green / red
Number of ports	1	1
Cross-sectional area (N, PE, \pm) (min.)	10 mm ² solid/flexible	10 mm ² solid/flexible
Cross-sectional area (N, PE) (max.)	50 mm ² stranded/35 mm ² flexible	50 mm ² stranded/35 mm ² flexible
Cross-sectional area (\pm) (max.)	35 mm ² stranded/25 mm ² flexible	35 mm ² stranded/25 mm ² flexible
For mounting on	35 mm DIN rail acc. to EN 60715	35 mm DIN rail acc. to EN 60715
Enclosure material	thermoplastic, red, UL 94 V-0	thermoplastic, red, UL 94 V-0
Place of installation	indoor installation	indoor installation
Degree of protection	IP 20	IP 20
Capacity	2 modules, DIN 43880	2 modules, DIN 43880
Approvals	UL	UL
Type of remote signalling contact	—	changeover contact
a.c. switching capacity	—	250 V/0.5 A
d.c. switching capacity	—	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A
Cross-sectional area for remote signalling terminals	—	max. 1.5 mm ² solid/flexible

N-PE Arresters Type 1



Dimension drawing DGPH M 255



Basic circuit diagram DGPH M 255



- Discharge capacity up to 100 kA (10/350 μ s)
- Total current arrester specifically designed for installation in "3+1" and "1+1" circuits of TT systems according to IEC 60364-5-53 between neutral conductor N and protective conductor PE
- Creepage discharge spark gap technology

Modular single-pole N-PE lightning current arrester for $U_C = 255$ V

Type	DGPH M 255
Part No.	961 102
SPD according to EN 61643-11	Type 1
SPD according to IEC 61643-1/-11	Class I
Max. continuous operating a.c. voltage (U_C)	255 V
Lightning impulse current (10/350 μ s) (I_{imp})	100 kA
Specific energy (W/R)	2.50 MJ/ohms
Nominal discharge current (8/20 μ s) (I_n)	100 kA
Voltage protection level (U_P)	≤ 4 kV
Follow current extinguishing capability a.c. (I_{fi})	100 A _{rms}
Response time (t_A)	≤ 100 ns
Temporary overvoltage (TOV)	1200 V / 200 ms
TOV characteristics	withstand
Operating temperature range (parallel connection) (T_{Up})	-40°C...+80°C
Operating temperature range (series connection) (T_{Us})	-40°C...+60°C
Number of ports	1
Cross-sectional area (min.)	10 mm ² solid/flexible
Cross-sectional area (max.)	50 mm ² stranded/35 mm ² flexible
For mounting on	35 mm DIN rail acc. to EN 60715
Enclosure material	red thermoplastic, UL 94 V-0
Place of installation	indoor installation
Degree of protection	IP 20
Capacity	2 modules, DIN 43880

Accessory for DEHNgap

DGPH M – 100 kA N-PE Spark-Gap-Based Protection Module

100 kA N-PE spark-gap-based protection module for use with all modular DEHNgap H M arresters

Type	DGPH MOD 255
Part No.	961 020
Max. continuous operating a.c. voltage (U_C)	255 V



N-PE Arresters Type 1



For protecting low-voltage consumer's installations against surges and even direct lightning strikes. For installation in conformity with the lightning protection zones concept at the boundaries from $O_A - 1$ (3+1 circuits).



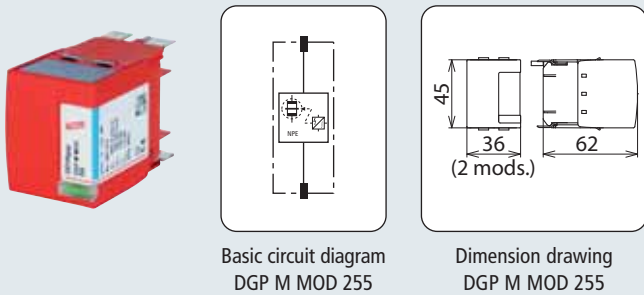
- High discharge capacity due to powerful creepage discharge spark gap
- With module release button for replacing protection modules without tools
- Operating state / fault indication by green / red indicator flag in the inspection window
- The plug-in protection module can be replaced without the need to de-energise and without removing the distribution board cover

DGP M MOD 255: 100 kA N-PE spark-gap-based protection module for use with all modular DEHNgap M arresters
DGPH MOD 255: 100 kA N-PE spark-gap-based protection module for use with all modular DEHNgap H M arresters

The N-PE spark-gap-based protection modules of the modular DEHNgap M family combine safety and innovation in a single device. Apart from the powerful encapsulated creepage discharge spark gap technology, the compact protection modules incorporate a monitoring device and an operating state/fault indicator. The mechanical coding of the protection

module prevents that the N-PE protection modules are confused with the spark-gap-based protection module for the phase conductors. The module locking system safely fixes the protection modules to the base part. The protection modules can be easily removed without tools by simply pressing the release button.

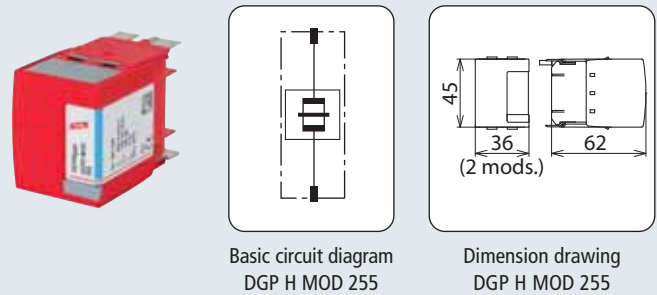
DGP M – Spark-Gap-Based Protection Module



100 kA N-PE spark-gap-based protection module for use with all modular DEHNgap M arresters

Type	DGP M MOD 255
Part No.	961 010
Max. continuous operating a.c. voltage (U_c)	255 V
Lightning impulse current (10/350 μ s) (I_{imp})	100 kA
Specific energy (W/R)	2.50 MJ/ohms
Follow current extinguishing capability [N-PE] a.c. (I_n)	100 A _{rms}

DGPH M – Spark-Gap-Based Protection Module



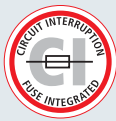
100 kA N-PE spark-gap-based protection module for use with all modular DEHNgap H M arresters

Type	DGPH MOD 255
Part No.	961 020
Max. continuous operating a.c. voltage (U_c)	255 V
Lightning impulse current (10/350 μ s) (I_{imp})	100 kA
Specific energy (W/R)	2.50 MJ/ohms
Follow current extinguishing capability [N-PE] a.c. (I_n)	100 A _{rms}

N-PE Arresters Type 1

Type 2 Surge Arresters

- Arrester backup fuse integrated in the protection module
- Prewired complete unit consisting of a base part and plug-in protection modules
- Energy coordination with other arresters of the Red/Line product family
- High discharge capacity
- High reliability due to "Thermo Dynamic Control" SPD monitoring device
- Easy replacement of protection modules without tools due to module locking system with module release button



DEHNguard M TNC CI 275:	Modular surge arrester with integrated backup fuse for TN-C systems
DEHNguard M TNS CI 275:	With integrated backup fuse for TN-S systems
DEHNguard M TT CI 275:	With integrated backup fuse for TT and TN-S systems ("3+1" circuits)
DEHNguard M TN CI 275:	With integrated backup fuse for 230 V TN systems
DEHNguard M TT 2P CI 275:	With integrated backup fuse for 230 V TT and TN systems ("1+1" circuits)
DEHNguard S CI 275:	Modular single-pole surge arrester with integrated backup fuse
DEHNguard M ... CI 275 FM:	With remote signalling contact for monitoring device (floating changeover contact)

The modular surge arresters of the DEHNguard ... CI family with their functional Red/Line design combine short-circuit and surge protection in a single protection module, setting new standards for user-friendly application.

The protective circuit including the arrester backup fuse in the protection module and the heavy-duty zinc oxide varistor as well as the dual Thermo Dynamic Control monitoring device allow easy installation with minimum space requirements.

Due to the integrated arrester backup fuse the user does not have to worry about arrester-specific dimensioning requirements such as backup protection in the event of a short-circuit and impulse current carrying capability.

Space-saving surge protection measures covering all functions specified in installation standards can be implemented in installations with short-circuit currents up to 25 kA_{rms}. All circuits including the N-PE circuit feature an operating state indicator as required by the IEC 60364-5-53 standard.

The "Thermo Dynamic Control" monitoring device evaluates the surface temperature of the heavy-duty varistor and the intensity of the discharge current. The mechanical visual indication with green and red flags shows the availability of every protective circuit even if no operating current is present. It also indicates the activation of the "Thermo Dynamic Control" monitoring device and the integrated arrester backup fuse.

Modular surge arrester with integrated backup fuse



For protecting low-voltage consumer's installations against surges. For installation in conformity with the lightning protection zones concept at the boundaries from 0_B - 1 and higher.

In addition to this mechanical operating state and fault indication, the ...FM version of the DEHNguard ... CI devices features a three-pole remote signalling terminal. With its floating changeover contact, the remote signal can be used as break or make contact according to the particular circuit concept.

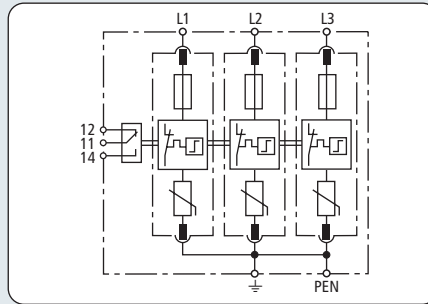
All the benefits of the modular design of the DEHNguard family have been integrated into the new DEHNguard ... CI family.

The system-configuration-specific product designation and the "Thermo Dynamic Control" monitoring device reflect the high safety requirements. The unique module locking system prevents the protection modules from becoming loose due to shock during transport or the enormous forces of discharge. Nevertheless, the protection modules can be easily replaced without tools, by simply pressing the user-friendly module release button of the protection modules. Every protective circuit of the multipole and single-pole arresters and every protection module is mechanically coded to ensure against installing an incorrect protection module.

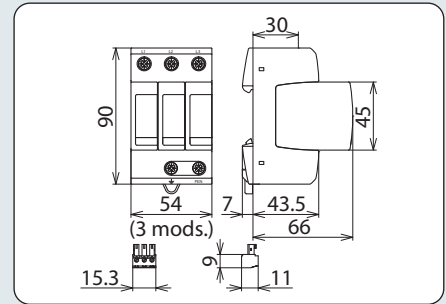
The surge arresters of the multipole modular DEHNguard ... CI family feature multifunctional terminals on a standardised spacing of one module for connecting conductors and busbars, allowing easy wiring with other DIN rail mounted devices. Thus, a variety of applications can be easily connected in series in accordance with IEC 60364-5-53 for optimal protection.

DEHNgard M TNC CI ... (FM)

Type 2 Surge Arresters



Basic circuit diagram DG M TNC CI ... FM



Dimension drawing DG M TNC CI ... FM

- Arrester backup fuse integrated in the protection module
- Prewired complete unit consisting of a base part and plug-in protection modules
- High reliability due to "Thermo Dynamic Control" SPD monitoring device

Modular surge arrester with integrated backup fuses for TN-C systems

Type	DG M TNC CI 275	DG M TNC CI 275 FM
Part No.	952 304	952 309
SPD according to EN 61643-11	Type 2	Type 2
SPD according to IEC 61643-1/-11	Class II	Class II
Nominal a.c. voltage (U _N)	230/400 V	230/400 V
Max. continuous operating a.c. voltage (U _C)	275 V	275 V
Nominal discharge current (8/20 μs) (I _n)	12.5 kA	12.5 kA
Max. discharge current (8/20 μs) (I _{max})	25 kA	25 kA
Voltage protection level (U _p)	≤ 1.5 kV	≤ 1.5 kV
Voltage protection level at 5 kA (U _p)	≤ 1 kV	≤ 1 kV
Response time (t _A)	≤ 25 ns	≤ 25 ns
Max. mains-side overcurrent protection	not required	not required
Short-circuit withstand capability	25 kA _{rms}	25 kA _{rms}
Temporary overvoltage (TOV) (U _T)	335 V / 5 sec.	335 V / 5 sec.
TOV characteristics	withstand	withstand
Operating temperature range (T _{ij})	-40°C...+80°C	-40°C...+80°C
Operating state/fault indication	green / red	green / red
Number of ports	1	1
Cross-sectional area (min.)	1.5 mm ² solid/flexible	1.5 mm ² solid/flexible
Cross-sectional area (max.)	35 mm ² stranded/25 mm ² flexible	35 mm ² stranded/25 mm ² flexible
For mounting on	35 mm DIN rail acc. to EN 60715	35 mm DIN rail acc. to EN 60715
Enclosure material	thermoplastic, red, UL 94 V-0	thermoplastic, red, UL 94 V-0
Place of installation	indoor installation	indoor installation
Degree of protection	IP 20	IP 20
Capacity	3 modules, DIN 43880	3 modules, DIN 43880
Approvals	KEMA, VDE	KEMA, VDE
Type of remote signalling contact	—	changeover contact
a.c. switching capacity	—	250 V/0.5 A
d.c. switching capacity	—	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A
Cross-sectional area for remote signalling terminals	—	max. 1.5 mm ² solid/flexible

Accessory for DEHNgard® modular with integrated Backup Fuse

Varistor-Based Protection Module for DEHNgard M CI

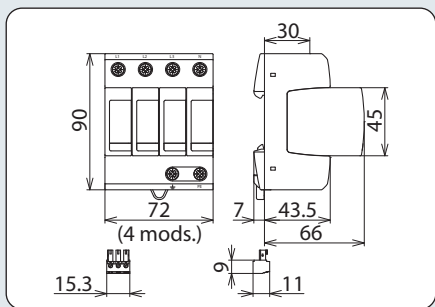
Protection module for DEHNgard M ... CI 275 arresters comprising a varistor connected in series with the integrated backup fuse



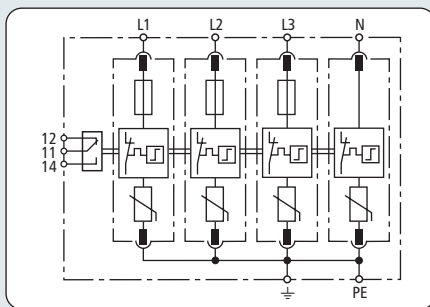
Type	DG MOD CI 275
Part No.	952 020
Max. continuous operating a.c. voltage (U _C)	275 V

Type 2 Surge Arresters

DEHNguard M TNS CI ... (FM)



Dimension drawing DG M TNS CI ... FM



Basic circuit diagram DG M TNS CI ... FM



- Arrester backup fuse integrated in the protection module
- Prewired complete unit consisting of a base part and plug-in protection modules
- High reliability due to "Thermo Dynamic Control" SPD monitoring device

Modular surge arrester with integrated backup fuses for TN-S systems

Type	DG M TNS CI 275	DG M TNS CI 275 FM
Part No.	952 401	952 406
SPD according to EN 61643-11	Type 2	Type 2
SPD according to IEC 61643-1/-11	Class II	Class II
Nominal a.c. voltage (U _N)	230/400 V	230/400 V
Max. continuous operating a.c. voltage (U _C)	275 V	275 V
Nominal discharge current (8/20 μs) (I _n)	12.5 kA	12.5 kA
Max. discharge current (8/20 μs) (I _{max})	25 kA	25 kA
Voltage protection level (U _p)	≤ 1.5 kV	≤ 1.5 kV
Voltage protection level at 5 kA (U _p)	≤ 1 kV	≤ 1 kV
Response time (t _A)	≤ 25 ns	≤ 25 ns
Max. mains-side overcurrent protection	not required	not required
Short-circuit withstand capability	25 kA _{rms}	25 kA _{rms}
Temporary overvoltage (TOV) (U _T)	335 V / 5 sec.	335 V / 5 sec.
TOV characteristics	withstand	withstand
Operating temperature range (T _U)	-40°C...+80°C	-40°C...+80°C
Operating state/fault indication	green / red	green / red
Number of ports	1	1
Cross-sectional area (min.)	1.5 mm ² solid/flexible	1.5 mm ² solid/flexible
Cross-sectional area (max.)	35 mm ² stranded/25 mm ² flexible	35 mm ² stranded/25 mm ² flexible
For mounting on	35 mm DIN rail acc. to EN 60715	35 mm DIN rail acc. to EN 60715
Enclosure material	thermoplastic, red, UL 94 V-0	thermoplastic, red, UL 94 V-0
Place of installation	indoor installation	indoor installation
Degree of protection	IP 20	IP 20
Capacity	4 modules, DIN 43880	4 modules, DIN 43880
Approvals	KEMA, VDE	KEMA, VDE
Type of remote signalling contact	—	changeover contact
a.c. switching capacity	—	250 V/0.5 A
d.c. switching capacity	—	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A
Cross-sectional area for remote signalling terminals	—	max. 1.5 mm ² solid/flexible

Accessory for DEHNguard® modular with integrated Backup Fuse

Varistor-Based Protection Module for N-PE circuits

Varistor-base protection module for DEHNguard M ... and DEHNguard S ...

Type	DG MOD 275
Part No.	952 010
Max. continuous operating a.c. voltage (U _C)	275 V



Accessory for DEHNguard® modular with integrated Backup Fuse

Varistor-Based Protection Module for DEHNguard M CI

Protection module for DEHNguard M ... CI 275 arresters comprising a varistor connected in series with the integrated backup fuse

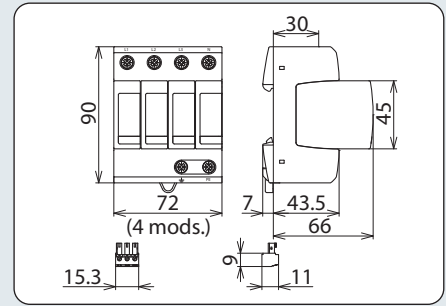
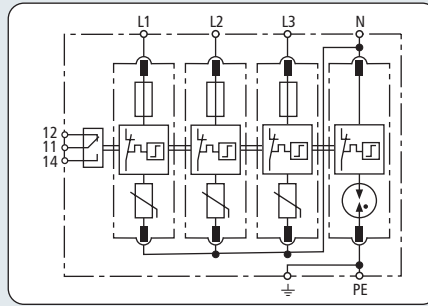
Type	DG MOD CI 275
Part No.	952 020
Max. continuous operating a.c. voltage (U _C)	275 V



Surge Arresters Type 2

DEHNguard M TT CI ... (FM)

Type 2 Surge Arresters



Basic circuit diagram DG M TT CI ... FM

Dimension drawing DG M TT CI ... FM

- Arrester backup fuse integrated in the protection module
- Prewired complete unit consisting of a base part and plug-in protection modules
- High reliability due to "Thermo Dynamic Control" SPD monitoring device

Modular surge arrester with integrated backup fuses for TT and TN-S systems ("3+1" circuits)

Type	DG M TT CI 275	DG M TT CI 275 FM
SPD according to EN 61643-11	Type 2	Type 2
SPD according to IEC 61643-1/-11	Class II	Class II
Nominal a.c. voltage (U _n)	230/400 V	230/400 V
Max. continuous operating a.c. voltage [L-N] (U _c)	275 V	275 V
Max. continuous operating a.c. voltage [N-PE] (U _c)	255 V	255 V
Nominal discharge current (8/20 μs) [L-N] (I _n)	12.5 kA	12.5 kA
Nominal discharge current (8/20 μs) [N-PE] (I _n)	20 kA	20 kA
Max. discharge current (8/20 μs) [L-N] (I _{max})	25 kA	25 kA
Max. discharge current (8/20 μs) [N-PE] (I _{max})	40 kA	40 kA
Lightning impulse current (10/350 μs) [N-PE] (I _{imp})	12 kA	12 kA
Voltage protection level [L-N] (U _p)	≤ 1.5 kV	≤ 1.5 kV
Voltage protection level [L-N] at 5 kA (U _p)	≤ 1 kV	≤ 1 kV
Voltage protection level [N-PE] (U _p)	≤ 1.5 kV	≤ 1.5 kV
Follow current extinguishing capability [N-PE] (I _{fi})	100 A _{rms}	100 A _{rms}
Response time [L-N] (t _Δ)	≤ 25 ns	≤ 25 ns
Response time [N-PE] (t _Δ)	≤ 100 ns	≤ 100 ns
Max. mains-side overcurrent protection	not required	not required
Short-circuit withstand capability	25 kA _{rms}	25 kA _{rms}
Temporary overvoltage (TOV) [L-N] (U _T)	335 V / 5 sec.	335 V / 5 sec.
Temporary overvoltage (TOV) [N-PE] (U _T)	1200 V / 200 ms	1200 V / 200 ms
TOV characteristics	withstand	withstand
Operating temperature range (T _o)	-40°C...+80°C	-40°C...+80°C
Operating state/fault indication	green / red	green / red
Number of ports	1	1
Cross-sectional area (min.)	1.5 mm ² solid/flexible	1.5 mm ² solid/flexible
Cross-sectional area (max.)	35 mm ² stranded/25 mm ² flexible	35 mm ² stranded/25 mm ² flexible
For mounting on	35 mm DIN rail acc. to EN 60715	35 mm DIN rail acc. to EN 60715
Enclosure material	thermoplastic, red, UL 94 V-0	thermoplastic, red, UL 94 V-0
Place of installation	indoor installation	indoor installation
Degree of protection	IP 20	IP 20
Capacity	4 modules, DIN 43880	4 modules, DIN 43880
Approvals	KEMA, VDE	KEMA, VDE
Type of remote signalling contact	—	changeover contact
a.c. switching capacity	—	250 V/0.5 A
d.c. switching capacity	—	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A
Cross-sectional area for remote signalling terminals	—	max. 1.5 mm ² solid/flexible

Accessory for DEHNguard® modular with integrated Backup Fuse

Varistor-Based Protection Module for DEHNguard M CI

Protection module for DEHNguard M ... CI 275 arresters comprising a varistor connected in series with the integrated backup fuse



Type	DG MOD CI 275
Part No.	952 020
Max. continuous operating a.c. voltage (U _c)	275 V

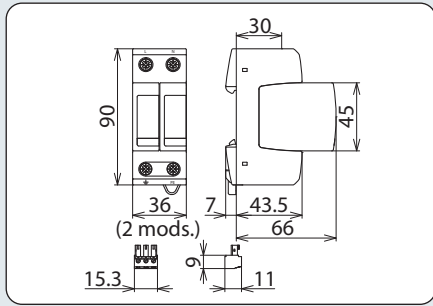
Accessory for DEHNguard® modular with integrated Backup Fuse

N-PE Spark-Gap-Based Protection Module for DEHNguard M TT ...

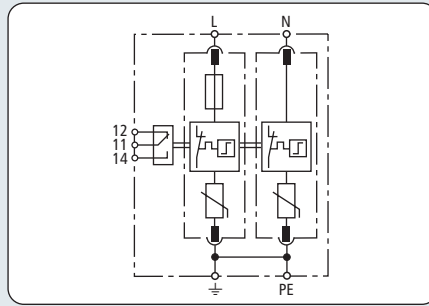
N-PE spark-gap-based protection module for two-pole and four-pole DEHNguard DG M TT ... surge arresters



Type	DG MOD NPE
Part No.	952 050
Max. continuous operating a.c. voltage (U _c)	255 V



Dimension drawing DG M TN CI ... FM



Basic circuit diagram DG M TN CI ... FM



- Arrester backup fuse integrated in the protection module
- Prewired complete unit consisting of a base part and plug-in protection modules
- High reliability due to "Thermo Dynamic Control" SPD monitoring device

Modular surge arrester with integrated backup fuses for single-phase 230 V TN systems

Type	DG M TN CI 275	DG M TN CI 275 FM
Part No.	952 173	952 178
SPD according to EN 61643-11	Type 2	Type 2
SPD according to IEC 61643-1/-11	Class II	Class II
Nominal a.c. voltage (U _N)	230 V	230 V
Max. continuous operating a.c. voltage (U _C)	275 V	275 V
Nominal discharge current (8/20 μs) (I _n)	12.5 kA	12.5 kA
Max. discharge current (8/20 μs) (I _{max})	25 kA	25 kA
Voltage protection level (U _p)	≤ 1.5 kV	≤ 1.5 kV
Voltage protection level at 5 kA (U _p)	≤ 1 kV	≤ 1 kV
Response time (t _A)	≤ 25 ns	≤ 25 ns
Max. mains-side overcurrent protection	not required	not required
Short-circuit withstand capability	25 kA _{rms}	25 kA _{rms}
Temporary overvoltage (TOV) (U _T)	335 V / 5 sec.	335 V / 5 sec.
TOV characteristics	withstand	withstand
Operating temperature range (T _U)	-40°C...+80°C	-40°C...+80°C
Operating state/fault indication	green / red	green / red
Number of ports	1	1
Cross-sectional area (min.)	1.5 mm ² solid/flexible	1.5 mm ² solid/flexible
Cross-sectional area (max.)	35 mm ² stranded/25 mm ² flexible	35 mm ² stranded/25 mm ² flexible
For mounting on	35 mm DIN rail acc. to EN 60715	35 mm DIN rail acc. to EN 60715
Enclosure material	thermoplastic, red, UL 94 V-0	thermoplastic, red, UL 94 V-0
Place of installation	indoor installation	indoor installation
Degree of protection	IP 20	IP 20
Capacity	2 modules, DIN 43880	2 modules, DIN 43880
Approvals	KEMA, VDE	KEMA, VDE
Type of remote signalling contact	—	changeover contact
a.c. switching capacity	—	250 V/0.5 A
d.c. switching capacity	—	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A
Cross-sectional area for remote signalling terminals	—	max. 1.5 mm ² solid/flexible

Accessory for DEHNguard® modular with integrated Backup Fuse

Varistor-Based Protection Module for N-PE circuits

Varistor-base protection module for DEHNguard M ... and DEHNguard S ...

Type	DG MOD 275
Part No.	952 010
Max. continuous operating a.c. voltage (U _C)	275 V



Accessory for DEHNguard® modular with integrated Backup Fuse

Varistor-Based Protection Module for DEHNguard M CI

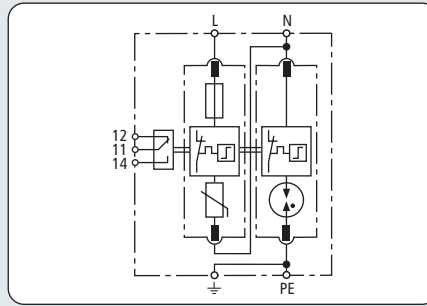
Protection module for DEHNguard M ... CI 275 arresters comprising a varistor connected in series with the integrated backup fuse

Type	DG MOD CI 275
Part No.	952 020
Max. continuous operating a.c. voltage (U _C)	275 V

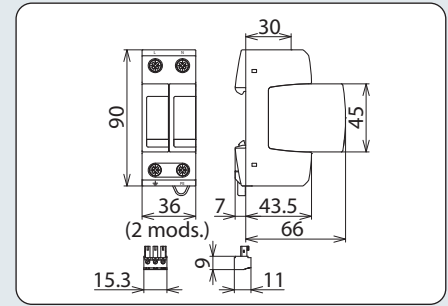


DEHNguard M TT 2P CI ... (FM)

Type 2 Surge Arresters



Basic circuit diagram DG M TT 2P CI ... FM



Dimension drawing DG M TT 2P CI ... FM

- Arrester backup fuse integrated in the protection module
- Prewired complete unit consisting of a base part and plug-in protection modules
- High reliability due to "Thermo Dynamic Control" SPD monitoring device

Modular surge arrester with integrated backup fuses for single-phase 230 V TT and TN systems ("1+1" circuits)

Type	DG M TT 2P CI 275	DG M TT 2P CI 275 FM
Part No.	952 171	952 176
SPD according to EN 61643-11	Type 2	Type 2
SPD according to IEC 61643-1/-11	Class II	Class II
Nominal a.c. voltage (U _n)	230 V	230 V
Max. continuous operating a.c. voltage [L-N] (U _c)	275 V	275 V
Max. continuous operating a.c. voltage [N-PE] (U _c)	255 V	255 V
Nominal discharge current (8/20 μs) [L-N] (I _n)	12.5 kA	12.5 kA
Nominal discharge current (8/20 μs) [N-PE] (I _n)	20 kA	20 kA
Max. discharge current (8/20 μs) [L-N] (I _{max})	25 kA	25 kA
Max. discharge current (8/20 μs) [N-PE] (I _{max})	40 kA	40 kA
Lightning impulse current (10/350 μs) [N-PE] (I _{imp})	12 kA	12 kA
Voltage protection level [L-N] (U _p)	≤ 1.5 kV	≤ 1.5 kV
Voltage protection level [L-N] at 5 kA (U _p)	≤ 1 kV	≤ 1 kV
Voltage protection level [N-PE] (U _p)	≤ 1.5 kV	≤ 1.5 kV
Follow current extinguishing capability [N-PE] (I _f)	100 A _{rms}	100 A _{rms}
Response time [L-N] (t _Δ)	≤ 25 ns	≤ 25 ns
Response time [N-PE] (t _Δ)	≤ 100 ns	≤ 100 ns
Max. mains-side overcurrent protection	not required	not required
Short-circuit withstand capability	25 kA _{rms}	25 kA _{rms}
Temporary overvoltage (TOV) [L-N] (U _T)	335 V / 5 sec.	335 V / 5 sec.
Temporary overvoltage (TOV) [N-PE] (U _T)	1200 V / 200 ms	1200 V / 200 ms
TOV characteristics	withstand	withstand
Operating temperature range (T _o)	-40°C...+80°C	-40°C...+80°C
Operating state/fault indication	green / red	green / red
Number of ports	1	1
Cross-sectional area (min.)	1.5 mm ² solid/flexible	1.5 mm ² solid/flexible
Cross-sectional area (max.)	35 mm ² stranded/25 mm ² flexible	35 mm ² stranded/25 mm ² flexible
For mounting on	35 mm DIN rail acc. to EN 60715	35 mm DIN rail acc. to EN 60715
Enclosure material	thermoplastic, red, UL 94 V-0	thermoplastic, red, UL 94 V-0
Place of installation	indoor installation	indoor installation
Degree of protection	IP 20	IP 20
Capacity	2 modules, DIN 43880	2 modules, DIN 43880
Approvals	KEMA, VDE	KEMA, VDE
Type of remote signalling contact	—	changeover contact
a.c. switching capacity	—	250 V/0.5 A
d.c. switching capacity	—	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A
Cross-sectional area for remote signalling terminals	—	max. 1.5 mm ² solid/flexible

Accessory for DEHNguard® modular with integrated Backup Fuse

Varistor-Based Protection Module for DEHNguard M CI

Protection module for DEHNguard M ... CI 275 arresters comprising a varistor connected in series with the integrated backup fuse



Type	DG MOD CI 275
Part No.	952 020
Max. continuous operating a.c. voltage (U _c)	275 V

Accessory for DEHNguard® modular with integrated Backup Fuse

N-PE Spark-Gap-Based Protection Module for DEHNguard M TT ...

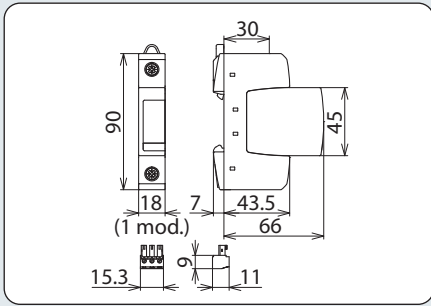
N-PE spark-gap-based protection module for two-pole and four-pole DEHNguard DG M TT ... surge arresters



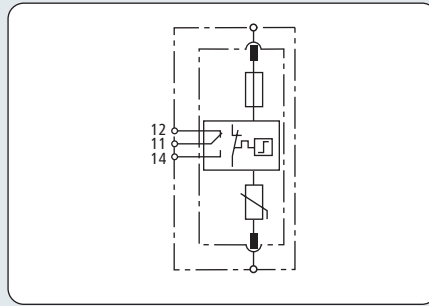
Type	DG MOD NPE
Part No.	952 050
Max. continuous operating a.c. voltage (U _c)	255 V

Type 2 Surge Arresters

DEHNGuard S CI ... (FM)



Dimension drawing DG S CI ... FM



Basic circuit diagram DG S CI ... FM



- Arrester backup fuse integrated in the protection module
- Prewired complete unit consisting of a base part and plug-in protection modules
- High reliability due to "Thermo Dynamic Control" SPD monitoring device

Pluggable single-pole surge arrester consisting of a base part and plug-in protection module; with integrated backup fuse; optionally available with floating remote signalling contact

Type	DG S CI 275	DG S CI 275 FM
Part No.	952 079	952 099
SPD according to EN 61643-11	Type 2	Type 2
SPD according to IEC 61643-1/-11	Class II	Class II
Max. continuous operating a.c. voltage (U_C)	275 V	275 V
Nominal discharge current (8/20 μ s) (I_n)	12.5 kA	12.5 kA
Max. discharge current (8/20 μ s) (I_{max})	25 kA	25 kA
Voltage protection level (U_p)	≤ 1.5 kV	≤ 1.5 kV
Voltage protection level at 5 kA (U_p)	≤ 1 kV	≤ 1 kV
Response time (t_A)	≤ 25 ns	≤ 25 ns
Max. mains-side overcurrent protection	not required	not required
Short-circuit withstand capability	25 kA _{rms}	25 kA _{rms}
Temporary overvoltage (TOV) (U_T)	335 V / 5 sec.	335 V / 5 sec.
TOV characteristics	withstand	withstand
Operating temperature range (T_U)	-40°C...+80°C	-40°C...+80°C
Operating state/fault indication	green / red	green / red
Number of ports	1	1
Cross-sectional area (min.)	1.5 mm ² solid/flexible	1.5 mm ² solid/flexible
Cross-sectional area (max.)	35 mm ² stranded/25 mm ² flexible	35 mm ² stranded/25 mm ² flexible
For mounting on	35 mm DIN rail acc. to EN 60715	35 mm DIN rail acc. to EN 60715
Enclosure material	thermoplastic, red, UL 94 V-0	thermoplastic, red, UL 94 V-0
Place of installation	indoor installation	indoor installation
Degree of protection	IP 20	IP 20
Capacity	1 modules, DIN 43880	1 modules, DIN 43880
Approvals	KEMA, VDE	KEMA, VDE
Type of remote signalling contact	—	changeover contact
a.c. switching capacity	—	250 V/0.5 A
d.c. switching capacity	—	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A
Cross-sectional area for remote signalling terminals	—	max. 1.5 mm ² solid/flexible

Accessory for DEHNGuard® modular with integrated Backup Fuse

Varistor-Based Protection Module for DEHNGuard M CI

Protection module for DEHNGuard S CI 275 arresters comprising a varistor connected in series with the integrated backup fuse

Type	DG MOD CI 275
Part No.	952 020
Max. continuous operating a.c. voltage (U_C)	275 V





For protecting low-voltage consumer's installations against surges. For installation in conformity with the lightning protection zones concept at the boundaries from $O_B - 1$ and higher.

- DEHNGuard M TNC ...: Modular surge arrester for use in TN-C systems
- DEHNGuard M TNS ...: Modular surge arrester for use in TN-S systems
- DEHNGuard M TT ...: Modular surge arrester for use in TT and TN-S systems ("3+1" circuit)
- DEHNGuard M TN ...: Modular surge arrester for use in single-phase TN systems
- DEHNGuard M TT 2P ...: Modular surge arrester for use in single-phase TT and TN systems ("1+1" circuit)
- DEHNGuard M WE ...: Modular surge arrester especially for use in wind turbines
- DEHNGuard M ... FM: With remote signalling contact for monitoring device (floating changeover contact)

The modular DEHNGuard M ... surge arresters with their functional Red/Line family design set new standards in terms of safety and user-friendliness. The proven protective circuit with heavy-duty zinc oxide varistors in combination with the dual "Thermo Dynamic Control" monitoring device are characteristic of the DEHNGuard technology.

A variety of features shows that both reliable surge protection and equipment safety are key elements of the new modular DEHNGuard surge arresters. The application-based product designation, which makes it considerably easier to choose the correct device for the relevant application, as well as the unique module locking system stand for fulfilling the most stringent safety requirements. The module locking system firmly fixes the protection modules to the base part. Neither vibration during transport nor the enormous electromagnetic forces of discharge can loosen the protection modules. Nevertheless, they can be easily replaced without tools by simply pressing the user-friendly module release button of the protection modules. Each protective circuit of the multipole surge arresters and each protection module are mechanically coded to ensure against installing an incorrect module.

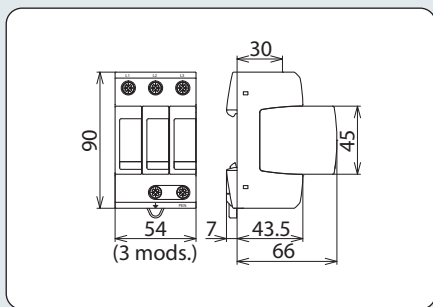
The dual "Thermo Dynamic Control" monitoring device was not only developed on the basis of national and international product standards, but also stands for experience of decades in the world market of surge protective devices and considers practical applications where arresters

- Prewired complete unit consisting of a base part and plug-in protection modules
- Energy coordination with other arresters of the Red/Line product family
- High discharge capacity due to heavy-duty zinc oxide varistors/spark gaps
- High reliability due to "Thermo Dynamic Control" SPD monitoring device
- Easy replacement of protection modules without tools due to module locking system with module release button
- Vibration and shock-tested according to EN 60068-2

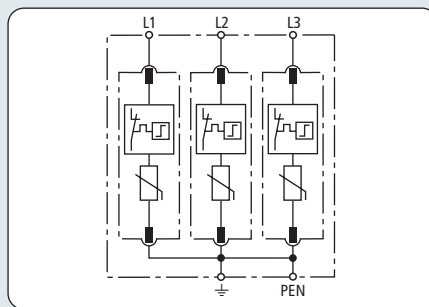
might be damaged. As with all DEHN surge arresters with "Thermo Dynamic Control", the intensity of the discharge current and the surface temperature of the heavy-duty varistor are evaluated. The visual indicator with green and red indicator flags shows the availability of every protective circuit. Apart from this standard visual indication, DEHNGuard M ... FM devices feature a three-pole remote signalling terminal.

With its floating changeover contact, the remote signal can be used as a make or break contract according to the particular circuit concept. The surge arresters of the multipole modular DEHNGuard M family feature multifunctional terminals on a standardised spacing of 1 module for the connection of conductors and busbars, allowing easy wiring with other DIN rail mounted devices. Thus, a wide range of applications can be easily connected in series according to IEC 60364-5-53 for optimal protection.





Dimension drawing DG M TNC ...



Basic circuit diagram DG M TNC ...



- **Prewired complete unit consisting of a base part and plug-in protection modules**
- **High discharge capacity due to heavy-duty zinc oxide varistors/spark gaps**
- **High reliability due to "Thermo Dynamic Control" SPD monitoring device**

Modular surge arrester for use in TN-C systems

Type	DG M TNC 150	DG M TNC 275	DG M TNC 385	DG M TNC 440
Part No.	952 313	952 300	952 314	952 303
SPD according to EN 61643-11	Type 2	Type 2	Type 2	Type 2
SPD according to IEC 61643-1/-11	Class II	Class II	Class II	Class II
Nominal a.c. voltage (U_N)	120/240 V	230/400 V	230/400 V	400/690 V
Max. continuous operating a.c. voltage (U_C)	150 V	275 V	385 V	440 V
Nominal discharge current (8/20 μ s) (I_n)	15 kA	20 kA	20 kA	20 kA
Max. discharge current (8/20 μ s) (I_{max})	40 kA	40 kA	40 kA	40 kA
Voltage protection level (U_p)	≤ 0.7 kV	≤ 1.25 kV	≤ 1.75 kV	≤ 2 kV
Voltage protection level at 5 kA (U_p)	≤ 0.55 kV	≤ 1 kV	≤ 1.35 kV	≤ 1.7 kV
Response time (t_A)	≤ 25 ns	≤ 25 ns	≤ 25 ns	≤ 25 ns
Max. mains-side overcurrent protection	125 A gL/gG	125 A gL/gG	125 A gL/gG	125 A gL/gG
Short-circuit withstand capability for max. mains-side overcurrent protection	50 kA _{rms}	50 kA _{rms}	25 kA _{rms}	25 kA _{rms}
Temporary overvoltage (TOV) (U_T)	175 V / 5 sec.	335 V / 5 sec.	385 V / 5 sec.	580 V / 5 sec.
TOV characteristics	withstand	withstand	withstand	withstand
Operating temperature range (T_U)	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C
Operating state/fault indication	green / red	green / red	green / red	green / red
Number of ports	1	1	1	1
Cross-sectional area (min.)	1.5 mm ² solid/flexible			
Cross-sectional area (max.)	35 mm ² stranded/25 mm ² flexible			
For mounting on	35 mm DIN rail acc. to EN 60715			
Enclosure material	thermoplastic, red, UL 94 V-0			
Place of installation	indoor installation	indoor installation	indoor installation	indoor installation
Degree of protection	IP 20	IP 20	IP 20	IP 20
Capacity	3 modules, DIN 43880	3 modules, DIN 43880	3 modules, DIN 43880	3 modules, DIN 43880
Approvals	KEMA, UL	KEMA, VDE, UL, VdS	KEMA, UL	KEMA, UL, VdS

Surge Arresters Type 2

Accessory for DEHNguard® modular

Varistor-Based Protection Module

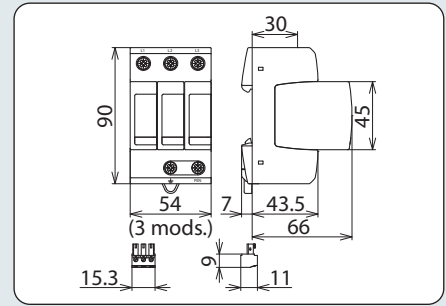
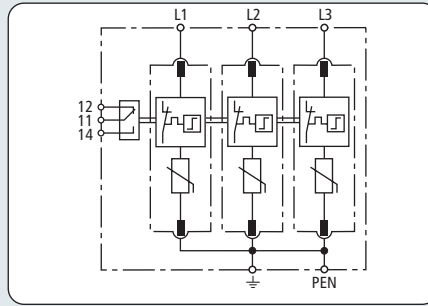
Varistor-based protection module for DEHNguard M ... and DEHNguard S ... surge arresters

Type DG MOD ...	150	275	385	440
Part No.	952 012	952 010	952 014	952 015
Max. continuous operating a.c. voltage (U_C)	150 V	275 V	385 V	440 V



DEHNgard M TNC ... FM

Type 2 Surge Arresters



Basic circuit diagram DG M TNC ... FM

Dimension drawing DG M TNC ... FM

- **Prewired complete unit consisting of a base part and plug-in protection modules**
- **High discharge capacity due to heavy-duty zinc oxide varistors/spark gaps**
- **High reliability due to "Thermo Dynamic Control" SPD monitoring device**

Modular surge arrester for use in TN-C systems; with floating changeover contact

Type	DG M TNC 150 FM	DG M TNC 275 FM	DG M TNC 385 FM	DG M TNC 440 FM
Part No.	952 318	952 305	952 319	952 308
SPD according to EN 61643-11	Type 2	Type 2	Type 2	Type 2
SPD according to IEC 61643-1/-11	Class II	Class II	Class II	Class II
Nominal a.c. voltage (U _N)	120/240 V	230/400 V	230/400 V	400/690 V
Max. continuous operating a.c. voltage (U _C)	150 V	275 V	385 V	440 V
Nominal discharge current (8/20 μs) (I _n)	15 kA	20 kA	20 kA	20 kA
Max. discharge current (8/20 μs) (I _{max})	40 kA	40 kA	40 kA	40 kA
Voltage protection level (U _p)	≤ 0.7 kV	≤ 1.25 kV	≤ 1.75 kV	≤ 2 kV
Voltage protection level at 5 kA (U _p)	≤ 0.55 kV	≤ 1 kV	≤ 1.35 kV	≤ 1.7 kV
Response time (t _A)	≤ 25 ns	≤ 25 ns	≤ 25 ns	≤ 25 ns
Max. mains-side overcurrent protection	125 A gL/gG	125 A gL/gG	125 A gL/gG	125 A gL/gG
Short-circuit withstand capability for max. mains-side overcurrent protection	50 kA _{rms}	50 kA _{rms}	25 kA _{rms}	25 kA _{rms}
Temporary overvoltage (TOV) (U _T)	175 V / 5 sec.	335 V / 5 sec.	385 V / 5 sec.	580 V / 5 sec.
TOV characteristics	withstand	withstand	withstand	withstand
Operating temperature range (T _U)	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C
Operating state/fault indication	green / red	green / red	green / red	green / red
Number of ports	1	1	1	1
Cross-sectional area (min.)	1.5 mm ² solid/flexible			
Cross-sectional area (max.)	35 mm ² stranded/25 mm ² flexible			
For mounting on	35 mm DIN rail acc. to EN 60715			
Enclosure material	thermoplastic, red, UL 94 V-0			
Place of installation	indoor installation	indoor installation	indoor installation	indoor installation
Degree of protection	IP 20	IP 20	IP 20	IP 20
Capacity	3 modules, DIN 43880	3 modules, DIN 43880	3 modules, DIN 43880	3 modules, DIN 43880
Approvals	KEMA, UL	KEMA, VDE, UL, VdS	KEMA, UL	KEMA, UL, VdS
Type of remote signalling contact	changeover contact	changeover contact	changeover contact	changeover contact
a.c. switching capacity	250 V/0.5 A	250 V/0.5 A	250 V/0.5 A	250 V/0.5 A
d.c. switching capacity	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A			
Cross-sectional area for remote signalling terminals	max. 1.5 mm ² solid/flexible			

Surge Arresters Type 2

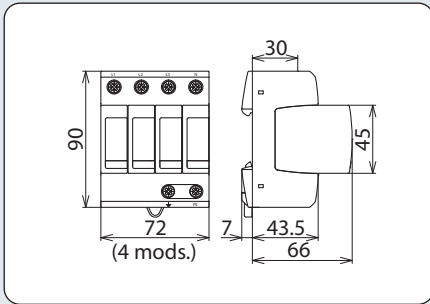
Accessory for DEHNgard® modular

Varistor-Based Protection Module

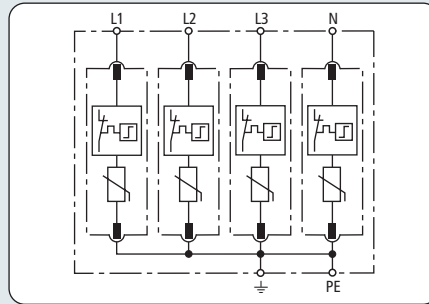
Varistor-based protection module for DEHNgard M ... and DEHNgard S ... surge arresters



Type DG MOD ...	150	275	385	440
Part No.	952 012	952 010	952 014	952 015
Max. continuous operating a.c. voltage (U _C)	150 V	275 V	385 V	440 V



Dimension drawing DG M TNS ...



Basic circuit diagram DG M TNS ...



- **Prewired complete unit consisting of a base part and plug-in protection modules**
- **High discharge capacity due to heavy-duty zinc oxide varistors/spark gaps**
- **High reliability due to "Thermo Dynamic Control" SPD monitoring device**

Modular surge arrester for use in TN-S systems

Type	DG M TNS 150	DG M TNS 275	DG M TNS 385
Part No.	952 403	952 400	952 404
SPD according to EN 61643-11	Type 2	Type 2	Type 2
SPD according to IEC 61643-1/-11	Class II	Class II	Class II
Nominal a.c. voltage (U _N)	120/240 V	230/400 V	230/400 V
Max. continuous operating a.c. voltage (U _C)	150 V	275 V	385 V
Nominal discharge current (8/20 μs) (I _n)	15 kA	20 kA	20 kA
Max. discharge current (8/20 μs) (I _{max})	40 kA	40 kA	40 kA
Voltage protection level (U _p)	≤ 0.7 kV	≤ 1.25 kV	≤ 1.75 kV
Voltage protection level at 5 kA (U _p)	≤ 0.55 kV	≤ 1 kV	≤ 1.35 kV
Response time (t _A)	≤ 25 ns	≤ 25 ns	≤ 25 ns
Max. mains-side overcurrent protection	125 A gL/gG	125 A gL/gG	125 A gL/gG
Short-circuit withstand capability for max. mains-side overcurrent protection	50 kA _{rms}	50 kA _{rms}	25 kA _{rms}
Temporary overvoltage (TOV) (U _T)	175 V / 5 sec.	335 V / 5 sec.	385 V / 5 sec.
TOV characteristics	withstand	withstand	withstand
Operating temperature range (T _U)	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C
Operating state/fault indication	green / red	green / red	green / red
Number of ports	1	1	1
Cross-sectional area (min.)	1.5 mm ² solid/flexible	1.5 mm ² solid/flexible	1.5 mm ² solid/flexible
Cross-sectional area (max.)	35 mm ² stranded/25 mm ² flexible	35 mm ² stranded/25 mm ² flexible	35 mm ² stranded/25 mm ² flexible
For mounting on	35 mm DIN rail acc. to EN 60715	35 mm DIN rail acc. to EN 60715	35 mm DIN rail acc. to EN 60715
Enclosure material	thermoplastic, red, UL 94 V-0	thermoplastic, red, UL 94 V-0	thermoplastic, red, UL 94 V-0
Place of installation	indoor installation	indoor installation	indoor installation
Degree of protection	IP 20	IP 20	IP 20
Capacity	4 modules, DIN 43880	4 modules, DIN 43880	4 modules, DIN 43880
Approvals	KEMA, UL	KEMA, VDE, UL, VdS	KEMA, UL

Surge Arresters Type 2

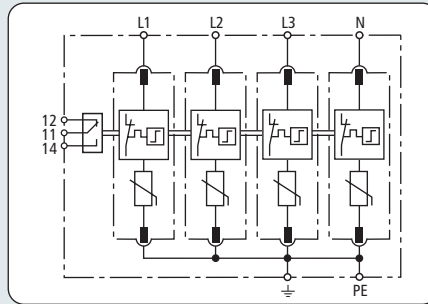
Accessory for DEHNguard® modular

Varistor-Based Protection Module

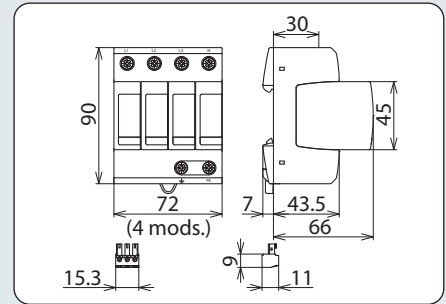
Varistor-based protection module for DEHNguard M ... and DEHNguard S ... surge arresters

Type DG MOD ...	150	275	385
Part No.	952 012	952 010	952 014
Max. continuous operating a.c. voltage (U _C)	150 V	275 V	385 V





Basic circuit diagram DG M TNS ... FM



Dimension drawing DG M TNS ... FM

- Prewired complete unit consisting of a base part and plug-in protection modules
- High discharge capacity due to heavy-duty zinc oxide varistors/spark gaps
- High reliability due to "Thermo Dynamic Control" SPD monitoring device

Modular surge arrester for use in TN-S systems; with floating changeover contact

Type	DG M TNS 150 FM	DG M TNS 275 FM	DG M TNS 385 FM
Part No.	952 408	952 405	952 409
SPD according to EN 61643-11	Type 2	Type 2	Type 2
SPD according to IEC 61643-1/-11	Class II	Class II	Class II
Nominal a.c. voltage (U _N)	120/240 V	230/400 V	230/400 V
Max. continuous operating a.c. voltage (U _C)	150 V	275 V	385 V
Nominal discharge current (8/20 μs) (I _n)	15 kA	20 kA	20 kA
Max. discharge current (8/20 μs) (I _{max})	40 kA	40 kA	40 kA
Voltage protection level (U _p)	≤ 0.7 kV	≤ 1.25 kV	≤ 1.75 kV
Voltage protection level at 5 kA (U _p)	≤ 0.55 kV	≤ 1 kV	≤ 1.35 kV
Response time (t _A)	≤ 25 ns	≤ 25 ns	≤ 25 ns
Max. mains-side overcurrent protection	125 A gL/gG	125 A gL/gG	125 A gL/gG
Short-circuit withstand capability for max. mains-side overcurrent protection	50 kA _{rms}	50 kA _{rms}	25 kA _{rms}
Temporary overvoltage (TOV) (U _T)	175 V / 5 sec.	335 V / 5 sec.	385 V / 5 sec.
TOV characteristics	withstand	withstand	withstand
Operating temperature range (T _U)	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C
Operating state/fault indication	green / red	green / red	green / red
Number of ports	1	1	1
Cross-sectional area (min.)	1.5 mm ² solid/flexible	1.5 mm ² solid/flexible	1.5 mm ² solid/flexible
Cross-sectional area (max.)	35 mm ² stranded/25 mm ² flexible	35 mm ² stranded/25 mm ² flexible	35 mm ² stranded/25 mm ² flexible
For mounting on	35 mm DIN rail acc. to EN 60715	35 mm DIN rail acc. to EN 60715	35 mm DIN rail acc. to EN 60715
Enclosure material	thermoplastic, red, UL 94 V-0	thermoplastic, red, UL 94 V-0	thermoplastic, red, UL 94 V-0
Place of installation	indoor installation	indoor installation	indoor installation
Degree of protection	IP 20	IP 20	IP 20
Capacity	4 modules, DIN 43880	4 modules, DIN 43880	4 modules, DIN 43880
Approvals	KEMA, UL	KEMA, VDE, UL, VdS	KEMA, UL
Type of remote signalling contact	changeover contact	changeover contact	changeover contact
a.c. switching capacity	250 V/0.5 A	250 V/0.5 A	250 V/0.5 A
d.c. switching capacity	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A
Cross-sectional area for remote signalling terminals	max. 1.5 mm ² solid/flexible	max. 1.5 mm ² solid/flexible	max. 1.5 mm ² solid/flexible

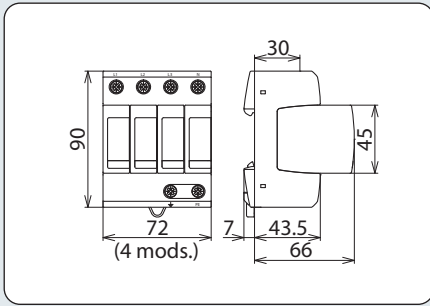
Accessory for DEHNguard® modular

Varistor-Based Protection Module

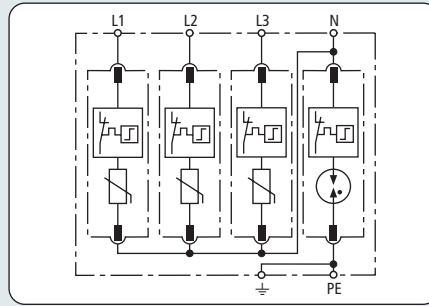
Varistor-based protection module for DEHNguard M ... and DEHNguard S ... surge arresters



Type DG MOD ...	150	275	385
Part No.	952 012	952 010	952 014
Max. continuous operating a.c. voltage (U _C)	150 V	275 V	385 V



Dimension drawing DG M TT ...



Basic circuit diagram DG M TT ...



- **Prewired complete unit consisting of a base part and plug-in protection modules**
- **High discharge capacity due to heavy-duty zinc oxide varistors/spark gaps**
- **High reliability due to "Thermo Dynamic Control" SPD monitoring device**

Modular surge arrester for use in TT and TN-S systems ("3+1" circuit)

Type	DG M TT 150	DG M TT 275	DG M TT 320	DG M TT 385
Part No.	952 323 <small>NEW</small>	952 310	952 320	952 311
SPD according to EN 61643-11	Type 2	Type 2	Type 2	Type 2
SPD according to IEC 61643-1/-11	Class II	Class II	Class II	Class II
Nominal a.c. voltage (U _N)	120/240 V	230/400 V	230/400 V	230/400 V
Max. continuous operating a.c. voltage [L-N] (U _C)	150 V	275 V	320 V	385 V
Max. continuous operating a.c. voltage [N-PE] (U _C)	255 V	255 V	255 V	255 V
Nominal discharge current (8/20 μs) (I _n)	15 kA	20 kA	20 kA	20 kA
Max. discharge current (8/20 μs) (I _{max})	40 kA	40 kA	40 kA	40 kA
Lightning impulse current (10/350 μs) [N-PE] (I _{imp})	12 kA	12 kA	12 kA	12 kA
Voltage protection level [L-N] (U _p)	≤ 0.7 kV	≤ 1.25 kV	≤ 1.5 kV	≤ 1.75 kV
Voltage protection level [L-N] at 5 kA (U _p)	≤ 0.55 kV	≤ 1 kV	≤ 1.2 kV	≤ 1.35 kV
Voltage protection level [N-PE] (U _p)	≤ 1.5 kV	≤ 1.5 kV	≤ 1.5 kV	≤ 1.5 kV
Follow current extinguishing capability [N-PE] (I _f)	100 A _{rms}	100 A _{rms}	100 A _{rms}	100 A _{rms}
Response time [L-N] (t _A)	≤ 25 ns	≤ 25 ns	≤ 25 ns	≤ 25 ns
Response time [N-PE] (t _A)	≤ 100 ns	≤ 100 ns	≤ 100 ns	≤ 100 ns
Max. mains-side overcurrent protection	125 A gL/gG	125 A gL/gG	125 A gL/gG	125 A gL/gG
Short-circuit withstand capability for max. mains-side overcurrent protection	50 kA _{rms}	50 kA _{rms}	25 kA _{rms}	25 kA _{rms}
Temporary overvoltage (TOV) [L-N] (U _T)	175 V / 5 sec.	335 V / 5 sec.	335 V / 5 sec.	385 V / 5 sec.
Temporary overvoltage (TOV) [N-PE] (U _T)	1200 V / 200 ms	1200 V / 200 ms	1200 V / 200 ms	1200 V / 200 ms
TOV characteristics	withstand	withstand	withstand	withstand
Operating temperature range (T _U)	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C
Operating state/fault indication	green / red	green / red	green / red	green / red
Number of ports	1	1	1	1
Cross-sectional area (min.)	1.5 mm ² solid/flexible			
Cross-sectional area (max.)	35 mm ² stranded/25 mm ² flexible			
For mounting on	35 mm DIN rail acc. to EN 60715			
Enclosure material	thermoplastic, red, UL 94 V-0			
Place of installation	indoor installation	indoor installation	indoor installation	indoor installation
Degree of protection	IP 20	IP 20	IP 20	IP 20
Capacity	4 modules, DIN 43880	4 modules, DIN 43880	4 modules, DIN 43880	4 modules, DIN 43880
Approvals	—	KEMA, VDE, UL, VdS	KEMA	KEMA, UL

Accessory for DEHNguard® modular

N-PE Spark-Gap-Based Protection Module for DEHNguard M TT ...

N-PE spark-gap-based protection module for two-pole and four-pole DEHNguard DG M TT ... surge arresters

Type	DG MOD NPE
Part No.	952 050
Max. continuous operating a.c. voltage (U _C)	255 V



Accessory for DEHNguard® modular

Varistor-Based Protection Module

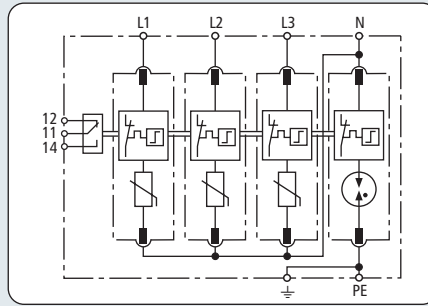
Varistor-base protection module for DEHNguard M ... and DEHNguard S ... surge arresters

Type DG MOD ...	150	275	320	385
Part No.	952 012	952 010	952 013	952 014
Max. continuous operating a.c. voltage (U _C)	150 V	275 V	320 V	385 V

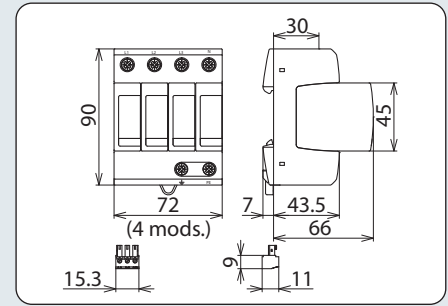


DEHNguard M TT ... FM

Type 2 Surge Arresters



Basic circuit diagram DG M TT ... FM



Dimension drawing DG M TT ... FM

- Prewired complete unit consisting of a base part and plug-in protection modules
- High discharge capacity due to heavy-duty zinc oxide varistors/spark gaps
- High reliability due to "Thermo Dynamic Control" SPD monitoring device

Modular surge arrester for use in TT and TN-S systems ("3+1" circuit); with floating remote signalling contact

Type	DG M TT 150 FM	DG M TT 275 FM	DG M TT 320 FM	DG M TT 385 FM
Part No.	952 328	952 315	952 325	952 316
SPD according to EN 61643-11	Type 2	Type 2	Type 2	Type 2
SPD according to IEC 61643-1/-11	Class II	Class II	Class II	Class II
Nominal a.c. voltage (U _N)	120/240 V	230/400 V	230/400 V	230/400 V
Max. continuous operating a.c. voltage [L-N] (U _C)	150 V	275 V	320 V	385 V
Max. continuous operating a.c. voltage [N-PE] (U _C)	255 V	255 V	255 V	255 V
Nominal discharge current (8/20 μs) (I _n)	15 kA	20 kA	20 kA	20 kA
Max. discharge current (8/20 μs) (I _{max})	40 kA	40 kA	40 kA	40 kA
Lightning impulse current (10/350 μs) [N-PE] (I _{imp})	12 kA	12 kA	12 kA	12 kA
Voltage protection level [L-N] (U _p)	≤ 0.7 kV	≤ 1.25 kV	≤ 1.5 kV	≤ 1.75 kV
Voltage protection level [L-N] at 5 kA (U _p)	≤ 0.55 kV	≤ 1 kV	≤ 1.2 kV	≤ 1.35 kV
Voltage protection level [N-PE] (U _p)	≤ 1.5 kV	≤ 1.5 kV	≤ 1.5 kV	≤ 1.5 kV
Follow current extinguishing capability [N-PE] (I _{fi})	100 A _{rms}	100 A _{rms}	100 A _{rms}	100 A _{rms}
Response time [L-N] (t _A)	≤ 25 ns	≤ 25 ns	≤ 25 ns	≤ 25 ns
Response time [N-PE] (t _A)	≤ 100 ns	≤ 100 ns	≤ 100 ns	≤ 100 ns
Max. mains-side overcurrent protection	125 A gL/gG	125 A gL/gG	125 A gL/gG	125 A gL/gG
Short-circuit withstand capability for max. mains-side overcurrent protection	50 kA _{rms}	50 kA _{rms}	25 kA _{rms}	25 kA _{rms}
Temporary overvoltage (TOV) [L-N] (U _T)	175 V / 5 sec.	335 V / 5 sec.	335 V / 5 sec.	385 V / 5 sec.
Temporary overvoltage (TOV) [N-PE] (U _T)	1200 V / 200 ms	1200 V / 200 ms	1200 V / 200 ms	1200 V / 200 ms
TOV characteristics	withstand	withstand	withstand	withstand
Operating temperature range (T _U)	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C
Operating state/fault indication	green / red	green / red	green / red	green / red
Number of ports	1	1	1	1
Cross-sectional area (min.)	1.5 mm ² solid/flexible			
Cross-sectional area (max.)	35 mm ² stranded/25 mm ² flexible			
For mounting on	35 mm DIN rail acc. to EN 60715			
Enclosure material	thermoplastic, red, UL 94 V-0			
Place of installation	indoor installation	indoor installation	indoor installation	indoor installation
Degree of protection	IP 20	IP 20	IP 20	IP 20
Capacity	4 modules, DIN 43880	4 modules, DIN 43880	4 modules, DIN 43880	4 modules, DIN 43880
Approvals	—	KEMA, VDE, UL, VdS	KEMA	KEMA, UL
Type of remote signalling contact	changeover contact	changeover contact	changeover contact	changeover contact
a.c. switching capacity	250 V/0.5 A	250 V/0.5 A	250 V/0.5 A	250 V/0.5 A
d.c. switching capacity	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A			
Cross-sectional area for remote signalling terminals	max. 1.5 mm ² solid/flexible			

Surge Arresters Type 2

Accessory for DEHNguard® modular

Varistor-Based Protection Module

Varistor-based protection module for DEHNguard M ... and DEHNguard S ... surge arresters



Type DG MOD ...	150	275	320	385
Part No.	952 012	952 010	952 013	952 014
Max. continuous operating a.c. voltage (U _C)	150 V	275 V	320 V	385 V

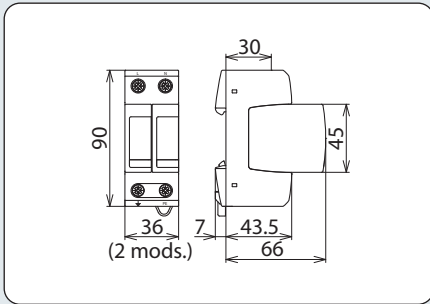
Accessory for DEHNguard® modular

N-PE Spark-Gap-Based Protection Module for DEHNguard M TT ...

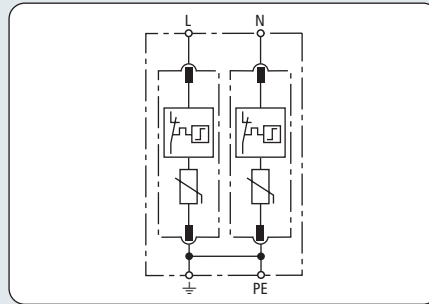
N-PE spark-gap-based protection module for two-pole and four-pole DEHNguard DG M TT ... surge arresters



Type	DG MOD NPE
Part No.	952 050
Max. continuous operating a.c. voltage (U _C)	255 V



Dimension drawing DG M TN ...



Basic circuit diagram DG M TN ...



- **Prewired complete unit consisting of a base part and plug-in protection modules**
- **High discharge capacity due to heavy-duty zinc oxide varistors/spark gaps**
- **High reliability due to "Thermo Dynamic Control" SPD monitoring device**

Modular surge arrester for use in single-phase TN systems

Type	DG M TN 150	DG M TN 275
Part No.	952 011	952 200
SPD according to EN 61643-11	Type 2	Type 2
SPD according to IEC 61643-1/-11	Class II	Class II
Nominal a.c. voltage (U_N)	120 V	230 V
Max. continuous operating a.c. voltage (U_C)	150 V	275 V
Nominal discharge current (8/20 μ s) (I_n)	15 kA	20 kA
Max. discharge current (8/20 μ s) (I_{max})	40 kA	40 kA
Voltage protection level (U_p)	≤ 0.7 kV	≤ 1.25 kV
Voltage protection level at 5 kA (U_p)	≤ 0.55 kV	≤ 1 kV
Response time (t_A)	≤ 25 ns	≤ 25 ns
Max. mains-side overcurrent protection	125 A gL/gG	125 A gL/gG
Short-circuit withstand capability for max. mains-side overcurrent protection	50 kA _{rms}	50 kA _{rms}
Temporary overvoltage (TOV) (U_T)	175 V / 5 sec.	335 V / 5 sec.
TOV characteristics	withstand	withstand
Operating temperature range (T_U)	-40°C...+80°C	-40°C...+80°C
Operating state/fault indication	green / red	green / red
Number of ports	1	1
Cross-sectional area (min.)	1.5 mm ² solid/flexible	1.5 mm ² solid/flexible
Cross-sectional area (max.)	35 mm ² stranded/25 mm ² flexible	35 mm ² stranded/25 mm ² flexible
For mounting on	35 mm DIN rail acc. to EN 60715	35 mm DIN rail acc. to EN 60715
Enclosure material	thermoplastic, red, UL 94 V-0	thermoplastic, red, UL 94 V-0
Place of installation	indoor installation	indoor installation
Degree of protection	IP 20	IP 20
Capacity	2 modules, DIN 43880	2 modules, DIN 43880
Approvals	KEMA, UL	KEMA, VDE, UL, VdS

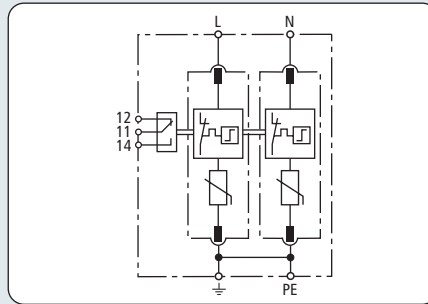
Accessory for DEHNguard® modular

Varistor-Based Protection Module

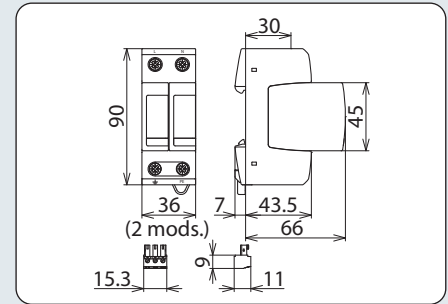
Varistor-based protection module for DEHNguard M ... and DEHNguard S ... surge arresters

Type DG MOD ...	150	275
Part No.	952 012	952 010
Max. continuous operating a.c. voltage (U_C)	150 V	275 V





Basic circuit diagram DG M TN ... FM



Dimension drawing DG M TN ... FM

- Prewired complete unit consisting of a base part and plug-in protection modules
- High discharge capacity due to heavy-duty zinc oxide varistors/spark gaps
- High reliability due to "Thermo Dynamic Control" SPD monitoring device

Modular surge arrester for use in single-phase TN systems; with floating remote signalling contact

Type	DG M TN 150 FM	DG M TN 275 FM
Part No.	952 206	952 205
SPD according to EN 61643-11	Type 2	Type 2
SPD according to IEC 61643-1/-11	Class II	Class II
Nominal a.c. voltage (U _N)	120 V	230 V
Max. continuous operating a.c. voltage (U _C)	150 V	275 V
Nominal discharge current (8/20 μs) (I _n)	15 kA	20 kA
Max. discharge current (8/20 μs) (I _{max})	40 kA	40 kA
Voltage protection level (U _p)	≤ 0.7 kV	≤ 1.25 kV
Voltage protection level at 5 kA (U _p)	≤ 0.55 kV	≤ 1 kV
Response time (t _A)	≤ 25 ns	≤ 25 ns
Max. mains-side overcurrent protection	125 A gL/gG	125 A gL/gG
Short-circuit withstand capability for max. mains-side overcurrent protection	50 kA _{rms}	50 kA _{rms}
Temporary overvoltage (TOV) (U _T)	175 V / 5 sec.	335 V / 5 sec.
TOV characteristics	withstand	withstand
Operating temperature range (T _{ij})	-40°C...+80°C	-40°C...+80°C
Operating state/fault indication	green / red	green / red
Number of ports	1	1
Cross-sectional area (min.)	1.5 mm ² solid/flexible	1.5 mm ² solid/flexible
Cross-sectional area (max.)	35 mm ² stranded/25 mm ² flexible	35 mm ² stranded/25 mm ² flexible
For mounting on	35 mm DIN rail acc. to EN 60715	35 mm DIN rail acc. to EN 60715
Enclosure material	thermoplastic, red, UL 94 V-0	thermoplastic, red, UL 94 V-0
Place of installation	indoor installation	indoor installation
Degree of protection	IP 20	IP 20
Capacity	2 modules, DIN 43880	2 modules, DIN 43880
Approvals	KEMA, UL	KEMA, VDE, UL, VdS
Type of remote signalling contact	changeover contact	changeover contact
a.c. switching capacity	250 V/0.5 A	250 V/0.5 A
d.c. switching capacity	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A
Cross-sectional area for remote signalling terminals	max. 1.5 mm ² solid/flexible	max. 1.5 mm ² solid/flexible

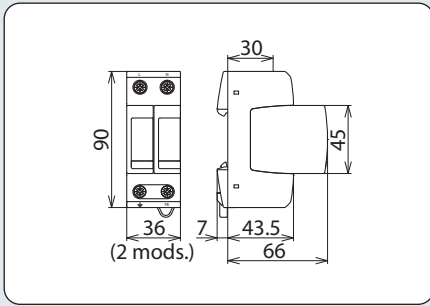
Accessory for DEHNguard® modular

Varistor-Based Protection Module

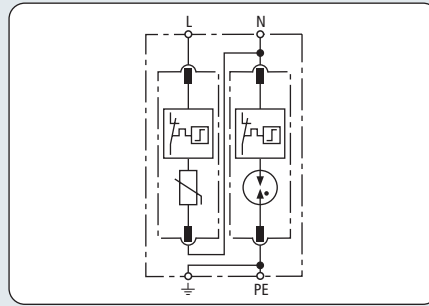
Varistor-based protection module for DEHNguard M ... and DEHNguard S ... surge arresters



Type DG MOD ...	150	275
Part No.	952 012	952 010
Max. continuous operating a.c. voltage (U _C)	150 V	275 V



Dimension drawing DG M TT 2P ...



Basic circuit diagram DG M TT 2P ...



- **Prewired complete unit consisting of a base part and plug-in protection modules**
- **High discharge capacity due to heavy-duty zinc oxide varistors/spark gaps**
- **High reliability due to "Thermo Dynamic Control" SPD monitoring device**

Modular surge arrester for use in single-phase TT and TN systems ("1+1" circuit)

Type	DG M TT 2P 275	DG M TT 2P 320	DG M TT 2P 385
Part No.	952 110	952 130	952 111
SPD according to EN 61643-11	Type 2	Type 2	Type 2
SPD according to IEC 61643-1/-11	Class II	Class II	Class II
Nominal a.c. voltage (U _N)	230 V	230 V	230 V
Max. continuous operating a.c. voltage [L-N] (U _C)	275 V	320 V	385 V
Max. continuous operating a.c. voltage [N-PE] (U _C)	255 V	255 V	255 V
Nominal discharge current (8/20 μs) (I _n)	20 kA	20 kA	20 kA
Max. discharge current (8/20 μs) (I _{max})	40 kA	40 kA	40 kA
Lightning impulse current (10/350 μs) [N-PE] (I _{imp})	12 kA	12 kA	12 kA
Voltage protection level [L-N] (U _p)	≤ 1.25 kV	≤ 1.5 kV	≤ 1.75 kV
Voltage protection level [L-N] at 5 kA (U _p)	≤ 1 kV	≤ 1.2 kV	≤ 1.35 kV
Voltage protection level [N-PE] (U _p)	≤ 1.5 kV	≤ 1.5 kV	≤ 1.5 kV
Follow current extinguishing capability [N-PE] (I _f)	100 A _{rms}	100 A _{rms}	100 A _{rms}
Response time [L-N] (t _A)	≤ 25 ns	≤ 25 ns	≤ 25 ns
Response time [N-PE] (t _A)	≤ 100 ns	≤ 100 ns	≤ 100 ns
Max. mains-side overcurrent protection	125 A gL/gG	125 A gL/gG	125 A gL/gG
Short-circuit withstand capability for max. mains-side overcurrent protection	50 kA _{rms}	25 kA _{rms}	25 kA _{rms}
Temporary overvoltage (TOV) [L-N] (U _T)	335 V / 5 sec.	335 V / 5 sec.	385 V / 5 sec.
Temporary overvoltage (TOV) [N-PE] (U _T)	1200 V / 200 ms	1200 V / 200 ms	1200 V / 200 ms
TOV characteristics	withstand	withstand	withstand
Operating temperature range (T _U)	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C
Operating state/fault indication	green / red	green / red	green / red
Number of ports	1	1	1
Cross-sectional area (min.)	1.5 mm ² solid/flexible	1.5 mm ² solid/flexible	1.5 mm ² solid/flexible
Cross-sectional area (max.)	35 mm ² stranded/25 mm ² flexible	35 mm ² stranded/25 mm ² flexible	35 mm ² stranded/25 mm ² flexible
For mounting on	35 mm DIN rail acc. to EN 60715	35 mm DIN rail acc. to EN 60715	35 mm DIN rail acc. to EN 60715
Enclosure material	thermoplastic, red, UL 94 V-0	thermoplastic, red, UL 94 V-0	thermoplastic, red, UL 94 V-0
Place of installation	indoor installation	indoor installation	indoor installation
Degree of protection	IP 20	IP 20	IP 20
Capacity	2 modules, DIN 43880	2 modules, DIN 43880	2 modules, DIN 43880
Approvals	KEMA, VDE, UL, VdS	KEMA	KEMA

Accessory for DEHNguard® modular

N-PE Spark-Gap-Based Protection Module for DEHNguard M TT ...

N-PE spark-gap-based protection module for two-pole and four-pole DEHNguard DG M TT ... surge arresters

Type	DG MOD NPE
Part No.	952 050
Max. continuous operating a.c. voltage (U _C)	255 V



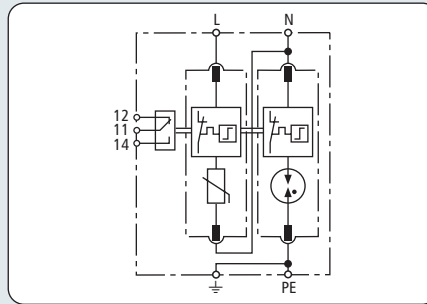
Accessory for DEHNguard® modular

Varistor-Based Protection Module

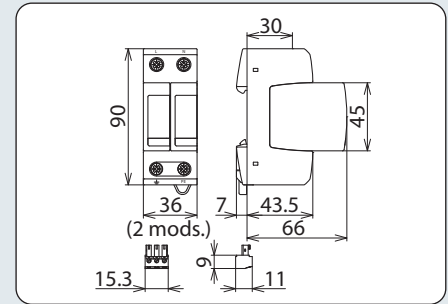
Varistor-based protection module for DEHNguard M ... and DEHNguard S ... surge arresters

Type DG MOD ...	275	320	385
Part No.	952 010	952 013	952 014
Max. continuous operating a.c. voltage (U _C)	275 V	320 V	385 V





Basic circuit diagram DG M TT 2P ... FM



Dimension drawing DG M TT 2P ... FM

- Prewired complete unit consisting of a base part and plug-in protection modules
- High discharge capacity due to heavy-duty zinc oxide varistors/spark gaps
- High reliability due to "Thermo Dynamic Control" SPD monitoring device

Modular surge arrester for use in single-phase TT and TN systems ("1+1" circuit); with floating remote signalling contact

Type	DG M TT 2P 275 FM	DG M TT 2P 320 FM	DG M TT 2P 385 FM
Part No.	952 115	952 135	952 116
SPD according to EN 61643-11	Type 2	Type 2	Type 2
SPD according to IEC 61643-1/-11	Class II	Class II	Class II
Nominal a.c. voltage (U _N)	230 V	230 V	230 V
Max. continuous operating a.c. voltage [L-N] (U _C)	275 V	320 V	385 V
Max. continuous operating a.c. voltage [N-PE] (U _C)	255 V	255 V	255 V
Nominal discharge current (8/20 μs) (I _n)	20 kA	20 kA	20 kA
Max. discharge current (8/20 μs) (I _{max})	40 kA	40 kA	40 kA
Lightning impulse current (10/350 μs) [N-PE] (I _{imp})	12 kA	12 kA	12 kA
Voltage protection level [L-N] (U _p)	≤ 1.25 kV	≤ 1.5 kV	≤ 1.75 kV
Voltage protection level [L-N] at 5 kA (U _p)	≤ 1 kV	≤ 1.2 kV	≤ 1.35 kV
Voltage protection level [N-PE] (U _p)	≤ 1.5 kV	≤ 1.5 kV	≤ 1.5 kV
Follow current extinguishing capability [N-PE] (I _{fi})	100 A _{rms}	100 A _{rms}	100 A _{rms}
Response time [L-N] (t _A)	≤ 25 ns	≤ 25 ns	≤ 25 ns
Response time [N-PE] (t _A)	≤ 100 ns	≤ 100 ns	≤ 100 ns
Max. mains-side overcurrent protection	125 A gL/gG	125 A gL/gG	125 A gL/gG
Short-circuit withstand capability for max. mains-side overcurrent protection	50 kA _{rms}	25 kA _{rms}	25 kA _{rms}
Temporary overvoltage (TOV) [L-N] (U _T)	335 V / 5 sec.	335 V / 5 sec.	385 V / 5 sec.
Temporary overvoltage (TOV) [N-PE] (U _T)	1200 V / 200 ms	1200 V / 200 ms	1200 V / 200 ms
TOV characteristics	withstand	withstand	withstand
Operating temperature range (T _U)	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C
Operating state/fault indication	green / red	green / red	green / red
Number of ports	1	1	1
Cross-sectional area (min.)	1.5 mm ² solid/flexible	1.5 mm ² solid/flexible	1.5 mm ² solid/flexible
Cross-sectional area (max.)	35 mm ² stranded/25 mm ² flexible	35 mm ² stranded/25 mm ² flexible	35 mm ² stranded/25 mm ² flexible
For mounting on	35 mm DIN rail acc. to EN 60715	35 mm DIN rail acc. to EN 60715	35 mm DIN rail acc. to EN 60715
Enclosure material	thermoplastic, red, UL 94 V-0	thermoplastic, red, UL 94 V-0	thermoplastic, red, UL 94 V-0
Place of installation	indoor installation	indoor installation	indoor installation
Degree of protection	IP 20	IP 20	IP 20
Capacity	2 modules, DIN 43880	2 modules, DIN 43880	2 modules, DIN 43880
Approvals	KEMA, VDE, UL, VdS	KEMA	KEMA
Type of remote signalling contact	changeover contact	changeover contact	changeover contact
a.c. switching capacity	250 V/0.5 A	250 V/0.5 A	250 V/0.5 A
d.c. switching capacity	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A
Cross-sectional area for remote signalling terminals	max. 1.5 mm ² solid/flexible	max. 1.5 mm ² solid/flexible	max. 1.5 mm ² solid/flexible

Accessory for DEHNguard® modular

Varistor-Based Protection Module

Varistor-based protection module for DEHNguard M ... and DEHNguard S ... surge arresters



Type DG MOD ...	275	320	385
Part No.	952 010	952 013	952 014
Max. continuous operating a.c. voltage (U _C)	275 V	320 V	385 V

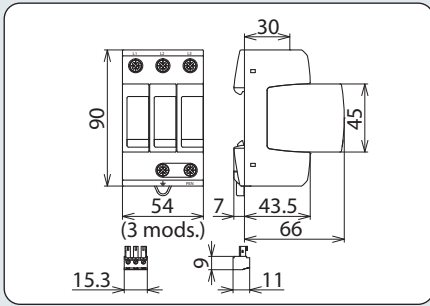
Accessory for DEHNguard® modular

N-PE Spark-Gap-Based Protection Module for DEHNguard M TT ...

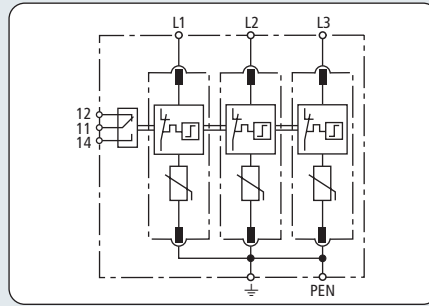
N-PE spark-gap-based protection module for two-pole and four-pole DEHNguard DG M TT ... surge arresters



Type	DG MOD NPE
Part No.	952 050
Max. continuous operating a.c. voltage (U _C)	255 V



Dimension drawing DG M WE ... FM



Basic circuit diagram DG M WE ... FM



- **Prewired complete unit consisting of a base part and plug-in protection modules**
- **High discharge capacity due to heavy-duty zinc oxide varistors/spark gaps**
- **High reliability due to "Thermo Dynamic Control" SPD monitoring device**

Three-pole modular surge arrester for use in wind turbines with a rated varistor voltage $U_{mov} = 750$ V a.c.; FM version with floating remote signalling contact

Type	DG M WE 600	DG M WE 600 FM
Part No.	952 302	952 307
SPD according to EN 61643-11	Type 2	Type 2
SPD according to IEC 61643-1/-11	Class II	Class II
Nominal a.c. voltage (U_N)	600 V	600 V
Max. continuous operating a.c. voltage (U_C)	600 V	600 V
Rated varistor voltage (U_{mov})	750 V	750 V
Nominal discharge current (8/20 μ s) (I_n)	15 kA	15 kA
Max. discharge current (8/20 μ s) (I_{max})	25 kA	25 kA
Voltage protection level (U_p)	≤ 3 kV	≤ 3 kV
Voltage protection level at 5 kA (U_p)	≤ 2.5 kV	≤ 2.5 kV
Response time (t_A)	≤ 25 ns	≤ 25 ns
Max. mains-side overcurrent protection	100 A gL/gG	100 A gL/gG
Short-circuit withstand capability for max. mains-side overcurrent protection	25 kA _{rms}	25 kA _{rms}
Temporary overvoltage (TOV) (U_T)	900 V / 5 sec.	900 V / 5 sec.
TOV characteristics	withstand	withstand
Operating temperature range (T_U)	-40°C...+80°C	-40°C...+80°C
Operating state/fault indication	green / red	green / red
Number of ports	1	1
Cross-sectional area (min.)	1.5 mm ² solid/flexible	1.5 mm ² solid/flexible
Cross-sectional area (max.)	35 mm ² stranded/25 mm ² flexible	35 mm ² stranded/25 mm ² flexible
For mounting on	35 mm DIN rail acc. to EN 60715	35 mm DIN rail acc. to EN 60715
Enclosure material	thermoplastic, red, UL 94 V-0	thermoplastic, red, UL 94 V-0
Place of installation	indoor installation	indoor installation
Degree of protection	IP 20	IP 20
Capacity	3 modules, DIN 43880	3 modules, DIN 43880
Approvals	KEMA, UL, VdS	KEMA, UL, VdS
Type of remote signalling contact	—	changeover contact
a.c. switching capacity	—	250 V/0.5 A
d.c. switching capacity	—	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A
Cross-sectional area for remote signalling terminals	—	max. 1.5 mm ² solid/flexible

Accessory for DEHNGuard® modular

Varistor-Based Protection Module for DEHNGuard M (S) WE

Varistor-based protection module for DEHNGuard M WE ... and DEHNGuard S WE ... surge arresters with a rated varistor voltage $U_{mov} = 750$ V a.c.

Type	DG MOD 750
Part No.	952 017
Max. continuous operating a.c. voltage (U_C)	600 V





For protecting low-voltage consumer's installations against surges. For installation in conformity with the lightning protection zones concept at the boundaries from $O_B - 1$ and higher.

- Multi-purpose surge arrester consisting of a base element and plug-in protection module
- High discharge capacity due to heavy-duty zinc oxide varistor
- High reliability due to "Thermo Dynamic Control" SPD monitoring device
- Energy coordination with other arresters of the Red/Line product family
- Operating state/fault indication by indicator flag in the inspection window
- Narrow (modular) design acc. to DIN 43880
- Multifunctional terminals for connecting conductors and busbars
- Easy replacement of protection modules due to module locking system with module release button
- Vibration and shock-tested according to EN 60068-2

DEHNGuard S ...: Pluggable surge arrester consisting of a base part and plug-in protection module
 DEHNGuard S ... FM: With remote signalling contact for monitoring device (floating changeover contact)

The single-pole devices of the DEHNGuard S product family distinguish themselves thanks to their universal features. Be it as a single device or in combination with other devices – DEHNGuard S surge arresters always provide adequate protection. Their modern Red/Line family design and universal features ensure safety and user-friendliness. The module release button and the proven "Thermo Dynamic Control" SPD monitoring device with dual tripping performance are key elements of the devices of the DEHNGuard S series.

Experience of decades in the world market of surge arresters has further improved the latest DEHNGuard generation compared to its predecessor.

The unique module locking system fixes the protection module to the base part. Neither vibration during transport nor the enormous electromagnetic forces of discharge can loosen this connection. Nevertheless, the modules can be easily replaced without tools by simply pressing the user-friendly module release button of the protection modules.

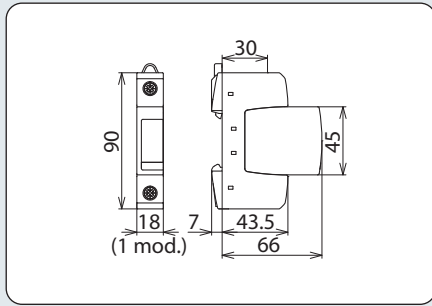
Every base part and protection module is mechanically coded to ensure against installing an incorrect replacement module.

As with all DEHNGuard surge arresters, the user of DEHNGuard S can rely on the dual "Thermo Dynamic Control" SPD monitoring device. It ensures a maximum degree of safety, even under harsh environmental conditions. The green and red indicator flags show the operating state of DEHNGuard S surge arresters. Apart from this standard visual indication, DEHNGuard S ... FM features a three-pole remote signalling terminal. With its floating changeover contact, the remote signal can be used as a break or make contact according to the particular circuit concept. The multifunctional terminals of DEHNGuard S surge arresters are suitable for connecting conductors and busbars, allowing easy wiring with other DIN rail mounted devices. Series connection according to IEC 60364-5-53 for optimal protection is therefore possible for a wide range of applications.

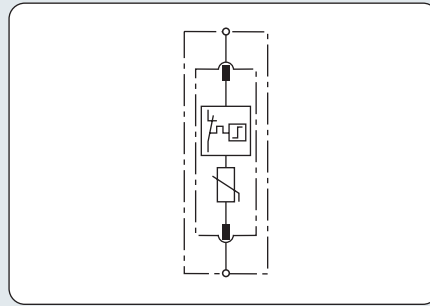


Type 2 Surge Arresters

DEHNgard S ...



Dimension drawing DG S ...



Basic circuit diagram DG S ...



Pluggable single-pole surge arrester consisting of a base part and plug-in protection module

- Multi-purpose surge arrester consisting of a base element and plug-in protection module
- High discharge capacity due to heavy-duty zinc oxide varistor
- High reliability due to "Thermo Dynamic Control" SPD monitoring device

Type	DG S 48	DG S 75	DG S 150	DG S 275	DG S 320	DG S 385	DG S 440	DG S 600
Part No.	952 078	952 071	952 072	952 070	952 073	952 074	952 075	952 076
SPD according to EN 61643-11	Type 2	Type 2	Type 2	Type 2	Type 2	Type 2	Type 2	Type 2
SPD according to IEC 61643-1/-11	Class II	Class II	Class II	Class II	Class II	Class II	Class II	Class II
Max. continuous operating a.c. voltage (U _c)	48 V	75 V	150 V	275 V	320 V	385 V	440 V	600 V
Max. continuous operating d.c. voltage (U _c)	60 V	100 V	200 V	350 V	420 V	500 V	585 V	600 V
Nominal discharge current (8/20 μs) (I _n)	10 kA	10 kA	15 kA	20 kA	20 kA	20 kA	20 kA	15 kA
Max. discharge current (8/20 μs) (I _{max})	25 kA	40 kA	40 kA	40 kA	40 kA	40 kA	40 kA	30 kA
Voltage protection level (U _p)	≤ 0.3 kV	≤ 0.4 kV	≤ 0.7 kV	≤ 1.25 kV	≤ 1.5 kV	≤ 1.75 kV	≤ 2 kV	≤ 2.5 kV
Voltage protection level at 5 kA (U _p)	≤ 0.25 kV	≤ 0.35 kV	≤ 0.55 kV	≤ 1 kV	≤ 1.2 kV	≤ 1.35 kV	≤ 1.7 kV	≤ 2 kV
Response time (t _d)	≤ 25 ns	≤ 25 ns	≤ 25 ns	≤ 25 ns	≤ 25 ns	≤ 25 ns	≤ 25 ns	≤ 25 ns
Max. mains-side overcurrent protection	125 A gL/gG	125 A gL/gG	125 A gL/gG	125 A gL/gG	125 A gL/gG	125 A gL/gG	125 A gL/gG	100 A gL/gG
Short-circuit withstand capability for max. mains-side overcurrent protection	50 kA _{rms}	50 kA _{rms}	50 kA _{rms}	50 kA _{rms}	25 kA _{rms}	25 kA _{rms}	25 kA _{rms}	25 kA _{rms}
Temporary overvoltage (TOV) (U _T)	70 V / 5 sec.	90 V / 5 sec.	175 V / 5 sec.	335 V / 5 sec.	335 V / 5 sec.	385 V / 5 sec.	580 V / 5 sec.	600 V / 5 sec.
TOV characteristics	withstand	withstand	withstand	withstand	withstand	withstand	withstand	withstand
Operating temperature range (T _U)	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C
Operating state/fault indication	green / red	green / red	green / red	green / red	green / red	green / red	green / red	green / red
Number of ports	1	1	1	1	1	1	1	1
Cross-sectional area (min.)	1.5 mm ² solid/flexible							
Cross-sectional area (max.)	35 mm ² stranded/25 mm ² flexible							
For mounting on	35 mm DIN rail acc. to EN 60715							
Enclosure material	thermoplastic, red, UL 94 V-0							
Place of installation	indoor installation							
Degree of protection	IP 20	IP 20	IP 20	IP 20	IP 20	IP 20	IP 20	IP 20
Capacity	1 modules, DIN 43880	1 modules, DIN 43880	1 modules, DIN 43880	1 modules, DIN 43880	1 modules, DIN 43880	1 modules, DIN 43880	1 modules, DIN 43880	1 modules, DIN 43880
Approvals	—	KEMA, VDE, UL, CSA	KEMA, VDE, UL, VdS, CSA	KEMA, VDE, UL, VdS, CSA	KEMA, VDE, UL, VdS, CSA	KEMA, VDE, UL, VdS, CSA	KEMA, VDE, UL, VdS, CSA	KEMA, VDE, UL, VdS, CSA

Surge Arresters Type 2

Accessory for DEHNgard® S / DEHNgard® S FM

Varistor-Based Protection Module

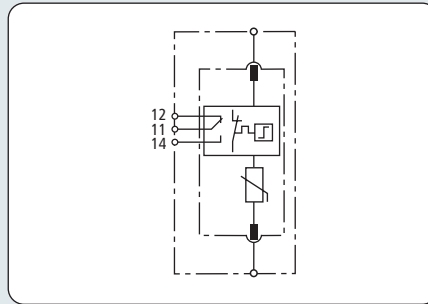
Varistor-based protection module for DEHNgard M ... and DEHNgard S ... surge arresters

Type DG MOD ...	48	75	150	275	320	385	440	600
Part No.	952 018	952 011	952 012	952 010	952 013	952 014	952 015	952 016
Max. continuous operating a.c. voltage (U _c)	48 V	75 V	150 V	275 V	320 V	385 V	440 V	600 V

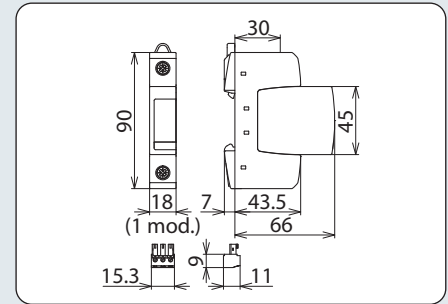


DEHNGuard S ... FM

Type 2 Surge Arresters



Basic circuit diagram DG S ... FM



Dimension drawing DG S ... FM

- Multi-purpose surge arrester consisting of a base element and plug-in protection module
- High discharge capacity due to heavy-duty zinc oxide varistor
- High reliability due to "Thermo Dynamic Control" SPD monitoring device

Pluggable single-pole surge arrester consisting of a base part and plug-in protection module; with floating remote signalling contact

Type	DG S 48 FM	DG S 75 FM	DG S 150 FM	DG S 275 FM	DG S 320 FM	DG S 385 FM	DG S 440 FM	DG S 600 FM
Part No.	952 098	952 091	952 092	952 090	952 093	952 094	952 095	952 096
SPD according to EN 61643-11	Type 2	Type 2	Type 2	Type 2	Type 2	Type 2	Type 2	Type 2
SPD according to IEC 61643-1/-11	Class II	Class II	Class II	Class II	Class II	Class II	Class II	Class II
Max. continuous operating a.c. voltage (U _c)	48 V	75 V	150 V	275 V	320 V	385 V	440 V	600 V
Max. continuous operating d.c. voltage (U _c)	60 V	100 V	200 V	350 V	420 V	500 V	585 V	600 V
Nominal discharge current (8/20 μs) (I _n)	10 kA	10 kA	15 kA	20 kA	20 kA	20 kA	20 kA	15 kA
Max. discharge current (8/20 μs) (I _{max})	25 kA	40 kA	40 kA	40 kA	40 kA	40 kA	40 kA	30 kA
Voltage protection level (U _p)	≤ 0.3 kV	≤ 0.4 kV	≤ 0.7 kV	≤ 1.25 kV	≤ 1.5 kV	≤ 1.75 kV	≤ 2 kV	≤ 2.5 kV
Voltage protection level at 5 kA (U _p)	≤ 0.25 kV	≤ 0.35 kV	≤ 0.55 kV	≤ 1 kV	≤ 1.2 kV	≤ 1.35 kV	≤ 1.7 kV	≤ 2 kV
Response time (t _A)	≤ 25 ns	≤ 25 ns	≤ 25 ns	≤ 25 ns	≤ 25 ns	≤ 25 ns	≤ 25 ns	≤ 25 ns
Max. mains-side overcurrent protection	125 A gL/gG	125 A gL/gG	125 A gL/gG	125 A gL/gG	125 A gL/gG	125 A gL/gG	125 A gL/gG	100 A gL/gG
Short-circuit withstand capability for max. mains-side overcurrent protection	50 kA _{rms}	50 kA _{rms}	50 kA _{rms}	50 kA _{rms}	25 kA _{rms}	25 kA _{rms}	25 kA _{rms}	25 kA _{rms}
Temporary overvoltage (TOV) (U _T)	70 V / 5 sec.	90 V / 5 sec.	175 V / 5 sec.	335 V / 5 sec.	335 V / 5 sec.	385 V / 5 sec.	580 V / 5 sec.	600 V / 5 sec.
TOV characteristics	withstand	withstand	withstand	withstand	withstand	withstand	withstand	withstand
Operating temperature range (T _U)	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C
Operating state/fault indication	green / red	green / red	green / red	green / red	green / red	green / red	green / red	green / red
Number of ports	1	1	1	1	1	1	1	1
Cross-sectional area (min.)	1.5 mm ² solid/flexible							
Cross-sectional area (max.)	35 mm ² stranded/25 mm ² flexible							
For mounting on	35 mm DIN rail acc. to EN 60715							
Enclosure material	thermoplastic, red, UL 94 V-0							
Place of installation	indoor installation							
Degree of protection	IP 20	IP 20	IP 20	IP 20	IP 20	IP 20	IP 20	IP 20
Capacity	1 modules, DIN 43880	1 modules, DIN 43880	1 modules, DIN 43880	1 modules, DIN 43880	1 modules, DIN 43880	1 modules, DIN 43880	1 modules, DIN 43880	1 modules, DIN 43880
Approvals	—	KEMA, VDE, UL, CSA	KEMA, VDE, UL, VdS, CSA	KEMA, VDE, UL, VdS, CSA	KEMA, VDE, UL, VdS, CSA	KEMA, VDE, UL, VdS, CSA	KEMA, VDE, UL, VdS, CSA	KEMA, VDE, UL, VdS, CSA
Type of remote signalling contact	changeover contact							
a.c. switching capacity	250 V/0.5 A							
d.c. switching capacity	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A							
Cross-sectional area for remote signalling terminals	max. 1.5 mm ² solid/flexible							

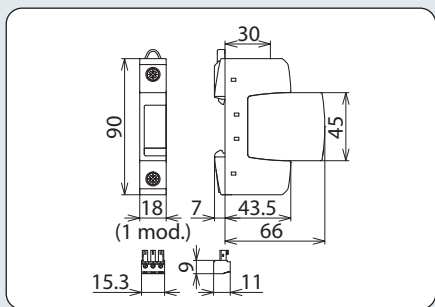
Accessory for DEHNGuard® S / DEHNGuard® S FM

Varistor-Based Protection Module

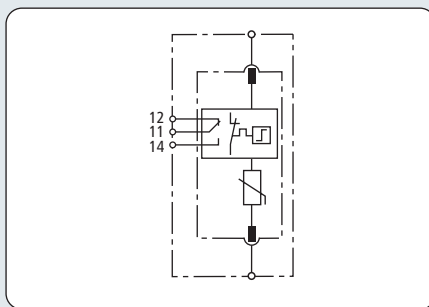
Varistor-based protection module for DEHNGuard M ... and DEHNGuard S ... surge arresters



Type DG MOD ...	48	75	150	275	320	385	440	600
Part No.	952 018	952 011	952 012	952 010	952 013	952 014	952 015	952 016
Max. continuous operating a.c. voltage (U _c)	48 V	75 V	150 V	275 V	320 V	385 V	440 V	600 V



Dimension drawing DG S WE 600 FM



Basic circuit diagram DG S WE 600 FM



Pluggable single-pole surge arrester with a rated varistor voltage $U_{mov} = 750$ V a.c., consisting of base part and plug-in protection module; FM version with floating remote signalling contact

- Multi-purpose surge arrester consisting of a base element and plug-in protection module
- High discharge capacity due to heavy-duty zinc oxide varistor
- High reliability due to "Thermo Dynamic Control" SPD monitoring device

Type	DG S WE 600	DG S WE 600 FM
Part No.	952 077	952 097
SPD according to EN 61643-11	Type 2	Type 2
SPD according to IEC 61643-1/-11	Class II	Class II
Max. continuous operating a.c. voltage (U_c)	600 V	600 V
Rated varistor voltage a.c. (U_{mov})	750 V	750 V
Nominal discharge current (8/20 μ s) (I_n)	15 kA	15 kA
Max. discharge current (8/20 μ s) (I_{max})	25 kA	25 kA
Voltage protection level (U_p)	≤ 3 kV	≤ 3 kV
Voltage protection level at 5 kA (U_p)	≤ 2.5 kV	≤ 2.5 kV
Response time (t_d)	≤ 25 ns	≤ 25 ns
Max. mains-side overcurrent protection	100 A gL/gG	100 A gL/gG
Short-circuit withstand capability for max. mains-side overcurrent protection	25 kA _{rms}	25 kA _{rms}
Temporary overvoltage (TOV) (U_T)	900 V / 5 sec.	900 V / 5 sec.
TOV characteristics	withstand	withstand
Operating temperature range (T_U)	-40°C...+80°C	-40°C...+80°C
Operating state/fault indication	green / red	green / red
Number of ports	1	1
Cross-sectional area (min.)	1.5 mm ² solid/flexible	1.5 mm ² solid/flexible
Cross-sectional area (max.)	35 mm ² stranded/25 mm ² flexible	35 mm ² stranded/25 mm ² flexible
For mounting on	35 mm DIN rail acc. to EN 60715	35 mm DIN rail acc. to EN 60715
Enclosure material	thermoplastic, red, UL 94 V-0	thermoplastic, red, UL 94 V-0
Place of installation	indoor installation	indoor installation
Degree of protection	IP 20	IP 20
Capacity	1 modules, DIN 43880	1 modules, DIN 43880
Approvals	KEMA, UL, CSA, VdS	KEMA, UL, CSA, VdS
Type of remote signalling contact	—	changeover contact
a.c. switching capacity	—	250 V/0.5 A
d.c. switching capacity	—	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A
Cross-sectional area for remote signalling terminals	—	max. 1.5 mm ² solid/flexible

Accessory for DEHNGuard® S / DEHNGuard® S FM

Varistor-Based Protection Module for DEHNGuard M (S) WE

Varistor-based protection module for DEHNGuard M WE ... and DEHNGuard S WE ... surge arresters with a rated varistor voltage $U_{mov} = 750$ V a.c.

Type	DG MOD 750
Part No.	952 017
Max. continuous operating a.c. voltage (U_c)	600 V



Surge Arresters Type 2



For protecting low-voltage consumer's installations against surges. For installation in conformity with the lightning protection zones concept at the boundaries from $O_B - 1$ and higher.

DEHNGuard S ... VA: Modular single-pole surge arrester with a varistor and a spark gap connected in series in the pluggable protection module

DEHNGuard S ... VA FM: Modular single-pole surge arrester with a varistor and a spark gap connected in series in the pluggable protection module; with remote signalling contact for monitoring device (floating changeover contact)

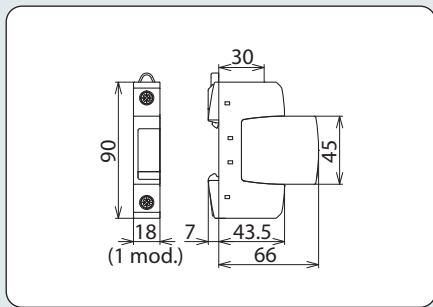
The single-pole DEHNGuard S ... VA surge arresters are an ideal supplement to the proven DEHNGuard product families. The special series connection of a spark gap and a varistor module in the protection module opens up new fields of application. It is advisable to use DEHNGuard S ... VA devices to protect, for example, systems with permanent insulation monitoring and the traction power supply of signal lines which have to be free of leakage currents. DEHNGuard S ... VA surge arresters are also suited for protecting power line communication systems.

Multifunctional terminals allow almost unlimited flexibility in terms of connection to one another, but also to other DIN rail mounted devices in a distribution board. However, it is not only flexibility that characterises the DEHNGuard S ... VA family. Its distinctive performance parameters set standards worldwide:

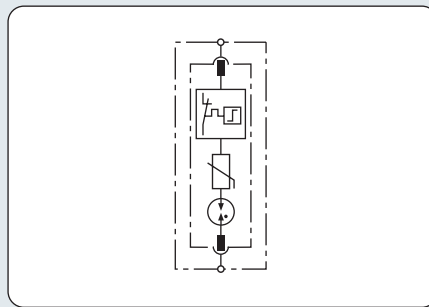
- Multi-purpose surge arrester consisting of a base part and plug-in protection module
- Leakage-current-free series connection of a varistor and a spark gap in the pluggable protection module
- High reliability due to "Thermo Dynamic Control" SPD monitoring device
- Energy coordination with other arresters of the Red/Line product family
- Easy replacement of protection modules without tools due to module locking system with module release button
- Narrow (modular) design according to DIN 43880
- Multifunctional terminal for connecting conductors and busbars

A high discharge capacity, complete absence of leakage currents, a low voltage protection level and the dual "Thermo Dynamic Control" monitoring and disconnection device describe the high degree of reliability.

It is the DEHN-specific "Thermo Dynamic Control" disconnecter that ensures that the arresters change into a safe, isolated state, even in case of extreme overloads. For this purpose, the intensity of the discharge current and the surface temperature of the heavy-duty varistor are evaluated. In addition to the standard visual indication with red and green indicator flags, the DEHNGuard S VA ... FM devices feature a three-pole remote signalling terminal. With its floating changeover contact, the remote signal can be used as break or make contact according to the particular protection concept.



Dimension drawing DG S ... VA



Basic circuit diagram DG S ... VA



Modular single-pole surge arrester with a varistor and spark gap connected in series in the plug-gable protection module

- Multi-purpose surge arrester consisting of a base part and plug-in protection module
- Leakage-current-free series connection of a varistor and a spark gap in the pluggable protection module
- High reliability due to "Thermo Dynamic Control" SPD monitoring device

Type	DG S 75 VA	DG S 275 VA	DG S 385 VA
Part No.	952 080	952 082	952 084
SPD according to EN 61643-11	Type 2	Type 2	Type 2
SPD according to IEC 61643-1/-11	Class II	Class II	Class II
Max. continuous operating a.c. voltage (U_C)	75 V	275 V	385 V
Max. continuous operating d.c. voltage (U_C)	100 V	350 V	500 V
Nominal discharge current (8/20 μ s) (I_n)	10 kA	10 kA	10 kA
Maximum discharge current (8/20 μ s) (I_{max})	20 kA	20 kA	20 kA
Voltage protection level (U_P)	≤ 1.1 kV	≤ 1.5 kV	≤ 1.75 kV
Response time (t_A)	≤ 100 ns	≤ 100 ns	≤ 100 ns
Maximum mains-side overcurrent protection	100 A gL/gG	100 A gL/gG	100 A gL/gG
Short-circuit withstand capability for max. mains-side overcurrent protection	25 kA _{rms}	25 kA _{rms}	25 kA _{rms}
Temporary overvoltage (TOV) (U_T)	75 V / 5 sec.	335 V / 5 sec.	385 V / 5 sec.
TOV characteristics	withstand	withstand	withstand
Operating temperature range (T_U)	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C
Operating state/fault indication	green / red	green / red	green / red
Number of ports	1	1	1
Cross-sectional area (min.)	1.5 mm ² solid/flexible	1.5 mm ² solid/flexible	1.5 mm ² solid/flexible
Cross-sectional area (max.)	35 mm ² stranded/25 mm ² flexible	35 mm ² stranded/25 mm ² flexible	35 mm ² stranded/25 mm ² flexible
For mounting on	35 mm DIN rail acc. to EN 60715	35 mm DIN rail acc. to EN 60715	35 mm DIN rail acc. to EN 60715
Enclosure material	thermoplastic, red, UL 94 V-0	thermoplastic, red, UL 94 V-0	thermoplastic, red, UL 94 V-0
Place of installation	indoor installation	indoor installation	indoor installation
Degree of protection	IP 20	IP 20	IP 20
Capacity	1 modules, DIN 43880	1 modules, DIN 43880	1 modules, DIN 43880

Surge Arresters Type 2

Accessory for DEHNguard® S ... VA (FM)

Varistor-Based Protection Module for DEHNguard S ... VA

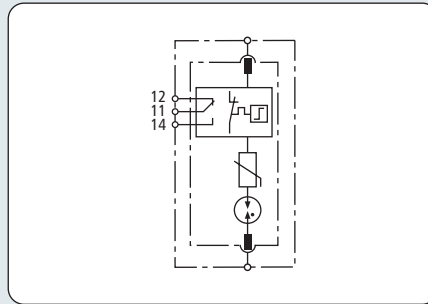
Protection module for DEHNguard S ... VA arresters comprising a varistor connected in series with a spark gap

Type DG MOD ...	75 VA	275 VA	385 VA
Part No.	952 025	952 027	952 029
Max. continuous operating a.c. voltage (U_C)	75 V	275 V	385 V

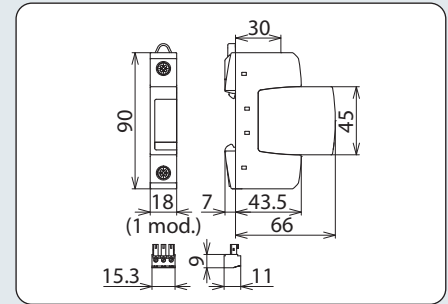


DEHNgard S VA FM

Type 2 Surge Arresters



Basic circuit diagram DG S ... VA FM



Dimension drawing DG S ... VA FM

- Multi-purpose surge arrester consisting of a base part and plug-in protection module
- Leakage-current-free series connection of a varistor and a spark gap in the pluggable protection module
- High reliability due to "Thermo Dynamic Control" SPD monitoring device

Modular single-pole surge arrester with a varistor and a spark gap connected in series in the plug-gable protection module; with floating remote signalling contact

Type	DG S 75 VA FM	DG S 275 VA FM	DG S 385 VA FM
Part No.	952 085	952 087	952 089
SPD according to EN 61643-11	Type 2	Type 2	Type 2
SPD according to IEC 61643-1/-11	Class II	Class II	Class II
Max. continuous operating a.c. voltage (U_c)	75 V	275 V	385 V
Max. continuous operating d.c. voltage (U_c)	100 V	350 V	500 V
Nominal discharge current (8/20 μ s) (I_n)	10 kA	10 kA	10 kA
Maximum discharge current (8/20 μ s) (I_{max})	20 kA	20 kA	20 kA
Voltage protection level (U_p)	≤ 1.1 kV	≤ 1.5 kV	≤ 1.75 kV
Response time (t_A)	≤ 100 ns	≤ 100 ns	≤ 100 ns
Maximum mains-side overcurrent protection	100 A gL/gG	100 A gL/gG	100 A gL/gG
Short-circuit withstand capability for max. mains-side overcurrent protection	25 kA _{rms}	25 kA _{rms}	25 kA _{rms}
Temporary overvoltage (TOV) (U_T)	75 V / 5 sec.	335 V / 5 sec.	385 V / 5 sec.
TOV characteristics	withstand	withstand	withstand
Operating temperature range (T_U)	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C
Operating state/fault indication	green / red	green / red	green / red
Number of ports	1	1	1
Cross-sectional area (min.)	1.5 mm ² solid/flexible	1.5 mm ² solid/flexible	1.5 mm ² solid/flexible
Cross-sectional area (max.)	35 mm ² stranded/25 mm ² flexible	35 mm ² stranded/25 mm ² flexible	35 mm ² stranded/25 mm ² flexible
For mounting on	35 mm DIN rail acc. to EN 60715	35 mm DIN rail acc. to EN 60715	35 mm DIN rail acc. to EN 60715
Enclosure material	thermoplastic, red, UL 94 V-0	thermoplastic, red, UL 94 V-0	thermoplastic, red, UL 94 V-0
Place of installation	indoor installation	indoor installation	indoor installation
Degree of protection	IP 20	IP 20	IP 20
Capacity	1 modules, DIN 43880	1 modules, DIN 43880	1 modules, DIN 43880
Type of remote signalling contact	changeover contact	changeover contact	changeover contact
a.c. switching capacity	250 V/0.5 A	250 V/0.5 A	250 V/0.5 A
d.c. switching capacity	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A
Cross-sectional area for remote signalling terminals	max. 1.5 mm ² solid/flexible	max. 1.5 mm ² solid/flexible	max. 1.5 mm ² solid/flexible

Accessory for DEHNgard® S ... VA (FM)

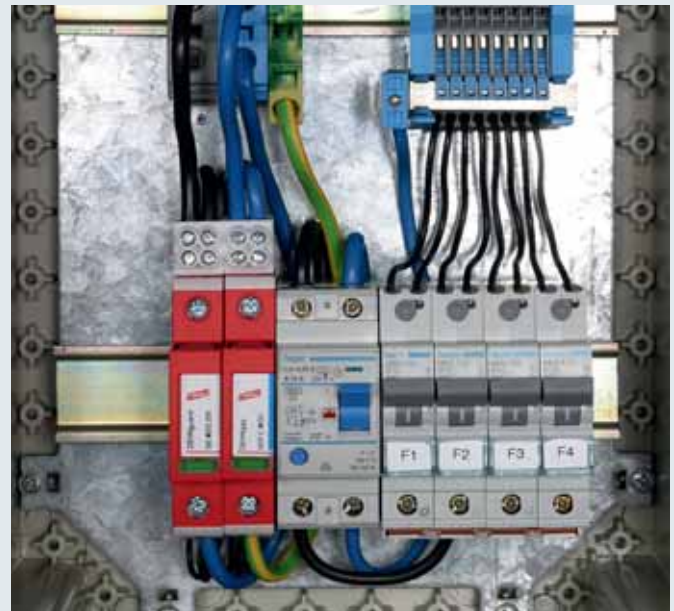
Varistor-Based Protection Module for DEHNgard S ... VA

Protection module for DEHNgard S ... VA arresters comprising a varistor connected in series with a spark gap



Type DG MOD ...	75 VA	275 VA	385 VA
Part No.	952 025	952 027	952 029
Max. continuous operating a.c. voltage (U_c)	75 V	275 V	385 V

- Specifically designed for use in "3+1" and "1+1" circuits of TT systems acc. to IEC 60364-5-53 between neutral conductor N and protective conductor PE
- High discharge capacity
- Two-part surge arrester consisting of a base part and a pluggable spark-gap-based protection module
- Energy coordination with other arresters of the Red/Line product family
- Operating state/fault indication by indicator flag in the inspection window
- With remote signalling contact for SPD monitoring device
- Easy replacement of protection modules without tools due to module locking system with module release button
- Vibration and shock-tested according to EN 60068-2



For protecting low-voltage consumer's installations against surges. For installation in conformity with the lightning protection zones concept at the boundaries from $0_B - 1$ and higher.

DEHNgap C S: N-PE surge arrester consisting of a base part and plug-in protection module
 DEHNgap C S FM: With remote signalling contact for monitoring device (floating changeover contact)

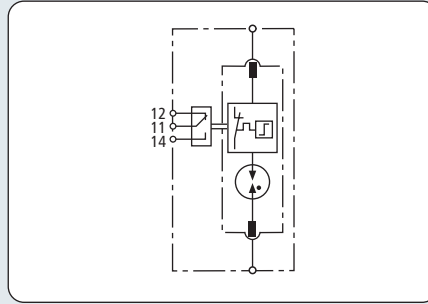
The N-PE surge arresters of type DEHNgap C S are an ideal supplement to the single-pole DEHNgard S surge protective devices. Being total current arresters between the neutral and protective conductor in TT systems, DEHNgap C S surge arresters help to ensure fulfilling the requirements for protection of personnel and equipment in "3+1" and "1+1" circuits.

With their modern Red/Line design, DEHNgap C S surge arresters have exactly the same user-friendly safety features as the DEHNgard S devices. The unique module locking system combines the spark-gap-based protection module and the base part to a powerful unit. Neither vibration during transport nor the enormous electromagnetic forces of discharge can loosen this connection. Nevertheless, the protection modules can be easily replaced without tools by simply pressing the user-friendly module release button of the protection module. The mechanical coding of protection module and base part ensures against installing an incorrect module.

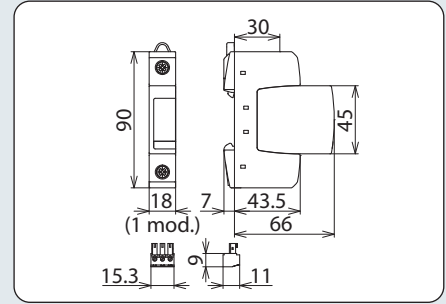
Safety of DEHNgap C S surge arresters is increased by monitoring the arrester temperature and an integrated disconnecter connected in series with the surge arrester.

The green and red indicator flags show the operating state of DEHNgap C S surge arresters.

Apart from this standard visual indication, DEHNgap C S ... FM features a three-pole remote signalling terminal. With its floating changeover contact, the remote signal can be used as a break or make contact according to the particular circuit concept. The N-PE surge arresters of type DEHNgap C S incorporate multifunctional terminals for connecting conductors and busbars, allowing easy wiring with other DIN rail mounted devices. Thus, a variety of applications can be easily connected in series according to IEC 60364-5-53 for optimal protection.



Basic circuit diagram DGP C S FM



Dimension drawing DGP C S FM

- Specifically designed for use in "3+1" and "1+1" circuits of TT systems acc. to IEC 60364-5-53 between neutral conductor N and protective conductor PE
- High discharge capacity
- Two-part surge arrester consisting of a base part and a pluggable spark-gap-based protection module

N-PE surge arrester; FM version with floating remote signalling contact

Type	DGP C S	DGP C S FM
Part No.	952 030	952 035
SPD according to EN 61643-11	Type 2	Type 2
SPD according to IEC 61643-1/-11	Class II	Class II
Max. continuous operating a.c. voltage (U_c)	255 V	255 V
Nominal discharge current (8/20 μ s) (I_n)	20 kA	20 kA
Max. discharge current (8/20 μ s) (I_{max})	40 kA	40 kA
Follow current extinguishing capability (I_{fi})	100 A _{rms}	100 A _{rms}
Lightning impulse current (10/350 μ s) (I_{imp})	12 kA	12 kA
Voltage protection level (U_p)	≤ 1.5 kV	≤ 1.5 kV
Response time (t_A)	≤ 100 ns	≤ 100 ns
Temporary overvoltage (TOV) (U_T)	1200 V / 200 ms	1200 V / 200 ms
TOV characteristics	withstand	withstand
Operating temperature range (T_U)	-40°C...+80°C	-40°C...+80°C
Operating state/fault indication	green / red	green / red
Number of ports	1	1
Cross-sectional area (min.)	1.5 mm ² solid/flexible	1.5 mm ² solid/flexible
Cross-sectional area (max.)	35 mm ² stranded/25 mm ² flexible	35 mm ² stranded/25 mm ² flexible
For mounting on	35 mm DIN rail acc. to EN 60715	35 mm DIN rail acc. to EN 60715
Enclosure material	thermoplastic, red, UL 94 V-0	thermoplastic, red, UL 94 V-0
Place of installation	indoor installation	indoor installation
Degree of protection	IP 20	IP 20
Capacity	1 modules, DIN 43880	1 modules, DIN 43880
Approvals	KEMA, VDE, UL, VdS	KEMA, VDE, UL, VdS
Type of remote signalling contact	—	changeover contact
a.c. switching capacity	—	250 V/0.5 A
d.c. switching capacity	—	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A
Cross-sectional area for remote signalling terminals	—	max. 1.5 mm ² solid/flexible

Accessory for DEHNgap C S

N-PE Spark-Gap-Based Protection Module for DEHNgap C S

N-PE spark-gap-based protection module for single-pole N-PE surge arresters of type DEHNgap DGP C S ...



Type	DGP C MOD
Part No.	952 060
Max. continuous operating a.c. voltage (U_c)	255 V

Surge Arresters Type 2

- Prewired modular complete unit for use in photovoltaic systems consisting of a base part and plug-in protection modules
- Combined disconnection and short-circuiting device with safe electrical isolation in the protection module prevents fire damage due to d.c. switching arcs (patented SCI principle)
- Approved fault-resistant Y circuit of the DEHNguard M YPV SCI ... (FM) prevents damage to the surge protective devices in case of insulation faults in the generator circuit
- Integrated d.c. fuse allows safe replacement of protection modules without arc formation
- Tested to prEN 50539-11
- Suitable for use in all PV systems in accordance with IEC 60364-7-712



For protecting low-voltage consumer's installations against surges. For use in accordance with IEC 60364-7-712:2002-05 (installation of photovoltaic power supply systems)

DEHNguard M YPV SCI 150/600/1000/1200:	Modular multipole surge arrester with three-step d.c. switching device; for photovoltaic systems up to 150/600/1000/1200 V
DEHNguard M YPV SCI ... FM:	With remote signalling contact for monitoring device (floating changeover contact)
DEHNguard S PV SCI 150/600:	For photovoltaic systems up to 150/600 V hard grounded on the d.c. side
DEHNguard S PV SCI ... FM:	With remote signalling contact for monitoring device (floating changeover contact)

The modular DEHNguard modular (Y)PV SCI ... (FM) surge arresters were specifically designed for protecting equipment in photovoltaic systems. The innovative patented three-step d.c. switching device (SCI principle) makes these arresters particularly safe so that they fulfil all requirements in modern photovoltaic systems. The devices are available as 150 V, 600 V, 1000 V and 1200 V versions, thus covering the most common voltage levels.

The application features of the modular Red/Line family design are similarly unique as the three-step d.c. switching device. The module locking system firmly fixes the protection modules to the base part. Neither shock nor vibration nor the enormous forces of discharge affect the safe connection to the protection module. Nevertheless, the protection modules can be easily replaced without tools by simply pressing the user-friendly module release button of the protection modules. Every protective circuit of DEHNguard modular (Y)PV SCI ... (FM) and every protection module is mechanically coded to ensure against installing the incorrect module.

To fulfil the special requirements in photovoltaic systems, a fault-resistant Y circuit consisting of three varistor-based protective circuits and a combined disconnection and short-circuiting device are integrated in a single device.

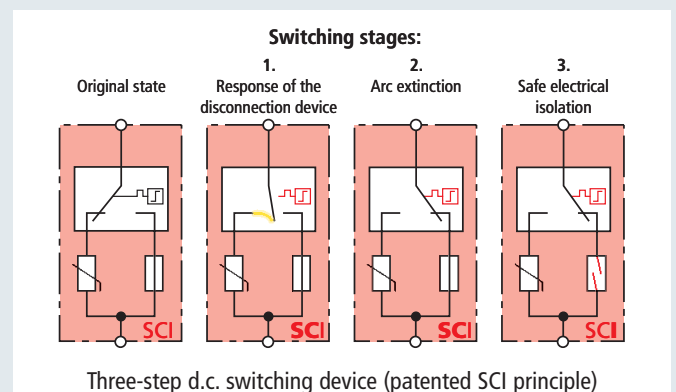
This synergy further reduces the probability of an arrester failure in case of the operating and fault states which have to be considered in photovoltaic systems. This ensures that the arrester is protected in case of overload without presenting a risk of fire to the system. Even in case of voltages up to 1200 V d.c., a switching arc, which is likely to occur when a conventional disconnector of a surge protective device is triggered, is quenched immediately without risk. Fire protection is the top priority for DEHNguard modular (Y)PV SCI ... (FM) surge arresters.

A fuse which was particularly developed for photovoltaic systems was integrated into the short-circuit path. This ensures safe electrical isolation in case of a faulty surge protection module, allowing safe replacement of the protection module without arc formation. This unique design combines surge, fire and personal protection. Due to this innovative and

unique design, DEHNguard modular (Y)PV SCI ... (FM) can be used in all low, medium and high-performance photovoltaic systems with no need for an additional backup fuse.

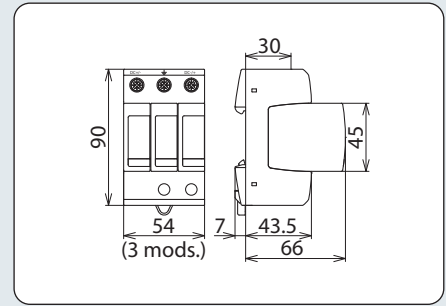
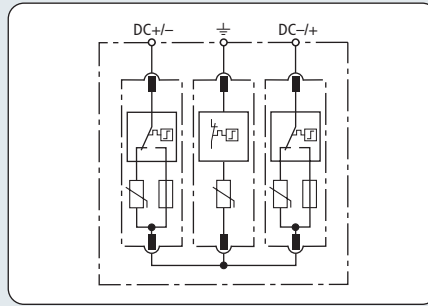
DG S PV SCI ... (FM) arresters are specifically designed for systems hard grounded on the d.c. side; this type of earthing is meanwhile required among others by manufacturers of special thin-film modules or also for legal or normative reasons in some regions. Since either the positive or the negative pole of the PV generator is hard grounded, the space-saving and thus cost-effective DG S PV SCI ... (FM) arresters (one protection module was removed from the Y circuit) may be used if the distance from the earthing point does not exceed 5 m.

The green and red indicator flags show the availability of every protective circuit. Apart from this visual indication, DEHNguard (Y)PV SCI ... (FM) arresters also feature a three-pole remote signalling terminal. With its floating changeover contact, the remote signal can be used as make or break contact according to the particular circuit concept. As with all surge arresters of the modular DEHNguard modular family, DEHNguard modular (Y)PV SCI ... (FM) arresters incorporate multifunctional terminals on a standardised spacing of 1 module for connecting conductors and busbars, allowing easy wiring with other DIN rail mounted devices.



DEHNguard M YPV SCI ...

Type 2 Surge Arresters for Use in PV Systems



Basic circuit diagram DG M YPV SCI ...

Dimension drawing DG M YPV SCI ...

- Prewired modular complete unit for use in photovoltaic systems consisting of a base part and plug-in protection modules
- Combined disconnection and short-circuiting device with safe electrical isolation in the protection module prevents fire damage caused by d.c. switching arcs (patented SCI principle)
- Safe replacement of protection modules without arc formation due to integrated d.c. fuse

Modular multipole surge arrester with three-step d.c. switching device for use in PV systems

Type	DG M YPV SCI 150	DG M YPV SCI 600	DG M YPV SCI 1000	DG M YPV SCI 1200
Part No.	952 513 NEW	952 511	952 510	952 512
Conformity with prEN 50539-11	yes	yes	yes	yes
SPD classification according to EN 61643-11	Type 2	Type 2	Type 2	Typ 2
SPD classification according to IEC 61643-1/-11	Class II	Class II	Class II	Class II
Max. PV voltage (U _{CPV})	≤ 150 V	≤ 600 V	≤ 1000 V	≤ 1200 V
Short-circuit withstand capacity (I _{SCWPV})	1000 A	1000 A	1000 A	1000 A
Max. continuous operating d.c. voltage [(DC+/DC-) --> PE] (U _C)	75 V	300 V	500 V	600 V
Total discharge current (8/20 μs) (I _{total})	40 kA	40 kA	40 kA	30 kA
Nominal discharge current (8/20 μs) [(DC+/DC-) --> PE] (I _n)	10 kA	12.5 kA	12.5 kA	12.5 kA
Max. discharge current (8/20 μs) [(DC+/DC-) --> PE] (I _{max})	20 kA	25 kA	25 kA	25 kA
Voltage protection level (U _p)	≤ 0.8 kV	≤ 2.5 kV	≤ 4 kV	≤ 4.5 kV
Voltage protection level at 5 kA (U _p)	≤ 0.6 kV	≤ 2 kV	≤ 3.5 kV	≤ 4 kV
Response time (t _A)	≤ 25 ns	≤ 25 ns	≤ 25 ns	≤ 25 ns
Operating temperature range (T _U)	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C
Operating state/fault indication	green / red	green / red	green / red	green / red
Number of ports	1	1	1	1
Cross-sectional area (min.)	1.5 mm ² solid/flexible			
Cross-sectional area (max.)	35 mm ² stranded/25 mm ² flexible			
For mounting on	35 mm DIN rail acc. to EN 60715			
Enclosure material	thermoplastic, red, UL 94 V-0			
Place of installation	indoor installation	indoor installation	indoor installation	indoor installation
Degree of protection	IP 20	IP 20	IP 20	IP 20
Capacity	3 modules, DIN 43880	3 modules, DIN 43880	3 modules, DIN 43880	3 modules, DIN 43880
Approvals	UL	UL, CSA	UL, CSA	UL

Surge Arresters Type 2

Accessory for DEHNguard® modular (Y)PV SCI ... (FM)

Varistor-Based Protection Module for DEHNguard M (Y)PV SCI

Protection module for DEHNguard M (Y)PV SCI ... arresters comprising a varistor connected in parallel with a short-circuiting device with integrated back-up fuse



Type DG MOD PV ...	SCI 75	SCI 300	SCI 500	SCI 600
Part No.	952 055	952 053	952 051	952 054
Max. continuous operating d.c. voltage (U _C)	75 V	300 V	500 V	600 V

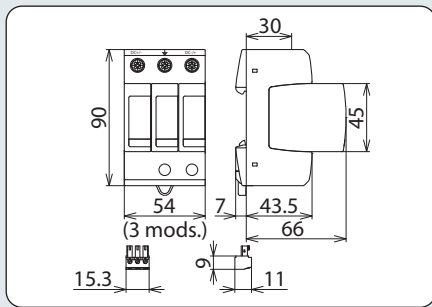
Accessory for DEHNguard® modular (Y)PV SCI ... (FM)

Varistor-Based Protection Module for DEHNguard M (Y)PV SCI

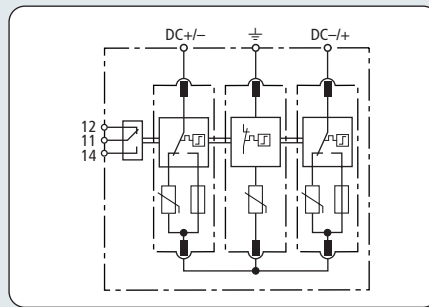
Varistor-based protection module for DEHNguard M YPV SCI ... and DEHNguard S PV SCI ... arresters



Type DG MOD PV ...	75	300	500	600
Part No.	952 045	952 043	952 041	952 044
Max. continuous operating d.c. voltage (U _C)	75 V	300 V	500 V	600 V



Dimension drawing DG M YPV SCI ... FM



Basic circuit diagram DG M YPV SCI ... FM



Modular multipole surge arrester with three-step d.c. switching device for use in PV systems with remote signalling contact for monitoring device (floating changeover contact)

- Prewired modular complete unit for use in photovoltaic systems consisting of a base part and plug-in protection modules
- Combined disconnection and short-circuiting device with safe electrical isolation in the protection module prevents fire damage caused by d.c. switching arcs (patented SCI principle)
- Safe replacement of protection modules without arc formation due to integrated d.c. fuse

Type	DG M YPV SCI 150 FM	DG M YPV SCI 600 FM	DG M YPV SCI 1000 FM	DG M YPV SCI 1200 FM
Part No.	952 518 ^{NEW}	952 516	952 515	952 517
Conformity with prEN 50539-11	yes	yes	yes	yes
SPD classification according to EN 61643-11	Type 2	Type 2	Type 2	Type 2
SPD classification according to IEC 61643-1/-11	Class II	Class II	Class II	Class II
Max. PV voltage (U _{CPV})	≤ 150 V	≤ 600 V	≤ 1000 V	≤ 1200 V
Short-circuit withstand capacity (I _{SCWPV})	1000 A	1000 A	1000 A	1000 A
Max. continuous operating d.c. voltage [(DC+/DC-) --> PE] (U _C)	75 V	300 V	500 V	600 V
Total discharge current (8/20 μs) (I _{total})	40 kA	40 kA	40 kA	30 kA
Nominal discharge current (8/20 μs) [(DC+/DC-) --> PE] (I _n)	10 kA	12.5 kA	12.5 kA	12.5 kA
Max. discharge current (8/20 μs) [(DC+/DC-) --> PE] (I _{max})	20 kA	25 kA	25 kA	25 kA
Voltage protection level (U _p)	≤ 0.8 kV	≤ 2.5 kV	≤ 4 kV	≤ 4.5 kV
Voltage protection level at 5 kA (U _p)	≤ 0.6 kV	≤ 2 kV	≤ 3.5 kV	≤ 4 kV
Response time (t _d)	≤ 25 ns	≤ 25 ns	≤ 25 ns	≤ 25 ns
Operating temperature range (T _U)	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C
Operating state/fault indication	green / red	green / red	green / red	green / red
Number of ports	1	1	1	1
Cross-sectional area (min.)	1.5 mm ² solid/flexible			
Cross-sectional area (max.)	35 mm ² stranded/25 mm ² flexible			
For mounting on	35 mm DIN rail acc. to EN 60715			
Enclosure material	thermoplastic, red, UL 94 V-0			
Place of installation	indoor installation	indoor installation	indoor installation	indoor installation
Degree of protection	IP 20	IP 20	IP 20	IP 20
Capacity	3 modules, DIN 43880	3 modules, DIN 43880	3 modules, DIN 43880	3 modules, DIN 43880
Approvals	UL	UL, CSA	UL, CSA	UL
Type of remote signalling contact	changeover contact	changeover contact	changeover contact	changeover contact
a.c. switching capacity	250 V/0.5 A	250 V/0.5 A	250 V/0.5 A	250 V/0.5 A
d.c. switching capacity	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A			
Cross-sectional area for remote signalling terminals	max. 1.5 mm ² solid/flexible			

Accessory for DEHNgard® modular (Y)PV SCI ... (FM)

Varistor-Based Protection Module for DEHNgard M (Y)PV SCI

Varistor-based protection module for DEHNgard M YPV SCI ... and DEHNgard S PV SCI ... arresters



Type DG MOD PV ...	75	300	500	600
Part No.	952 045	952 043	952 041	952 044
Max. continuous operating d.c. voltage (U _C)	75 V	300 V	500 V	600 V

Accessory for DEHNgard® modular (Y)PV SCI ... (FM)

Varistor-Based Protection Module for DEHNgard M (Y)PV SCI

Protection module for DEHNgard M (Y)PV SCI ... arresters comprising a varistor connected in parallel with a short-circuiting device with integrated back-up fuse

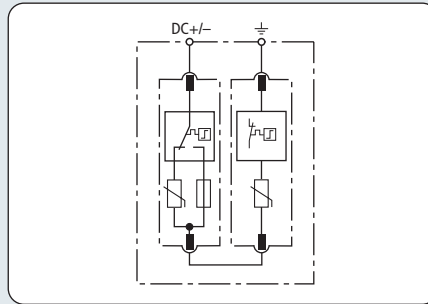


Type DG MOD PV ...	SCI 75	SCI 300	SCI 500	SCI 600
Part No.	952 055	952 053	952 051	952 054
Max. continuous operating d.c. voltage (U _C)	75 V	300 V	500 V	600 V

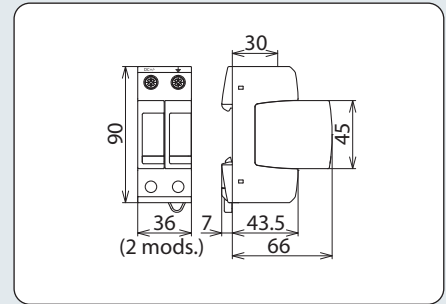
DEHNguard S PV SCI ...

Type 2 Surge Arresters for Use in PV Systems

NEW



Basic circuit diagram DG S PV SCI ...



Dimension drawing DG S PV SCI ...

- **Prewired modular complete unit for use in photovoltaic systems consisting of a base part and plug-in protection modules**
- **Combined disconnection and short-circuiting device with safe electrical isolation in the protection module prevents fire damage caused by d.c. switching arcs (patented SCI principle)**
- **Safe replacement of protection modules without arc formation due to integrated d.c. fuse**

Modular single-pole surge arrester with three-step d.c. switching device for PV systems

Type	DG S PV SCI 150	DG S PV SCI 600
Part No.	952 551	952 550
Conformity with prEN 50539-11	yes	yes
SPD classification according to EN 61643-11	Type 2	Type 2
SPD classification according to IEC 61643-1/-11	Class II	Class II
Max. PV voltage (U_{PV})	≤ 150 V	≤ 600 V
Short-circuit withstand capacity (I_{SCWPV})	1000 A	1000 A
Max. continuous operating d.c. voltage [(DC+/DC-) --> PE] (U_C)	150 V	600 V
Nominal discharge current (8/20 μ s) [(DC+/DC-) --> PE] (I_n)	10 kA	12.5 kA
Max. discharge current (8/20 μ s) [(DC+/DC-) --> PE] (I_{max})	20 kA	25 kA
Voltage protection level (U_p)	≤ 0.8 kV	≤ 2.5 kV
Voltage protection level at 5 kA (U_p)	≤ 0.6 kV	≤ 2 kV
Response time (t_A)	≤ 25 ns	≤ 25 ns
Operating temperature range (T_U)	-40°C...+80°C	-40°C...+80°C
Operating state/fault indication	green / red	green / red
Number of ports	1	1
Cross-sectional area (min.)	1.5 mm ² solid/flexible	1.5 mm ² solid/flexible
Cross-sectional area (max.)	35 mm ² stranded/25 mm ² flexible	35 mm ² stranded/25 mm ² flexible
For mounting on	35 mm DIN rail acc. to EN 60715	35 mm DIN rail acc. to EN 60715
Enclosure material	thermoplastic, red, UL 94 V-0	thermoplastic, red, UL 94 V-0
Place of installation	indoor installation	indoor installation
Degree of protection	IP 20	IP 20
Capacity	2 modules, DIN 43880	2 modules, DIN 43880
Approvals	UL	UL

Accessory for DEHNguard® modular (Y)PV SCI ... (FM)

Varistor-Based Protection Module for DEHNguard M (Y)PV SCI

Protection module for DEHNguard M (Y)PV SCI ... arresters comprising a varistor connected in parallel with a short-circuiting device with integrated back-up fuse



Type DG MOD PV ...	SCI 75	SCI 300
Part No.	952 055	952 053
Max. continuous operating d.c. voltage (U_C)	75 V	300 V

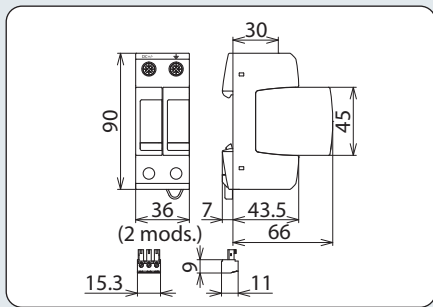
Accessory for DEHNguard® modular (Y)PV SCI ... (FM)

Varistor-Based Protection Module for DEHNguard M (Y)PV SCI

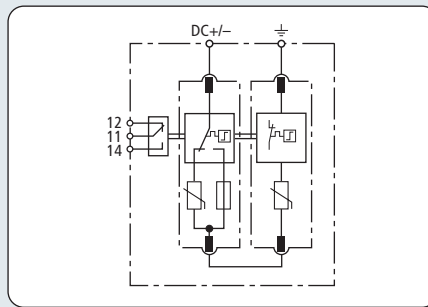
Varistor-based protection module for DEHNguard M YPV SCI ... and DEHNguard S PV SCI ... arresters



Type DG MOD PV ...	75	300
Part No.	952 045	952 043
Max. continuous operating d.c. voltage (U_C)	75 V	300 V



Dimension drawing DG S PV SCI ... FM



Basic circuit diagram DG S PV SCI ... FM



NEW

Modular single-pole surge arrester with three-step d.c. switching device for PV systems; with remote signalling contact for monitoring device (floating changeover contact)

- **Prewired modular complete unit for use in photovoltaic systems consisting of a base part and plug-in protection modules**
- **Combined disconnection and short-circuiting device with safe electrical isolation in the protection module prevents fire damage caused by d.c. switching arcs (patented SCI principle)**
- **Safe replacement of protection modules without arc formation due to integrated d.c. fuse**

Type	DG S PV SCI 150 FM	DG S PV SCI 600 FM
Part No.	952 556	952 555
Conformity with prEN 50539-11	yes	yes
SPD classification according to EN 61643-11	Type 2	Type 2
SPD classification according to IEC 61643-1/-11	Class II	Class II
Max. PV voltage (U _{CPV})	≤ 150 V	≤ 600 V
Short-circuit withstand capacity (I _{SCWPV})	1000 A	1000 A
Max. continuous operating d.c. voltage [(DC+/DC-) --> PE] (U _C)	150 V	600 V
Nominal discharge current (8/20 μs) [(DC+/DC-) --> PE] (I _n)	10 kA	12.5 kA
Max. discharge current (8/20 μs) [(DC+/DC-) --> PE] (I _{max})	20 kA	25 kA
Voltage protection level (U _p)	≤ 0.8 kV	≤ 2.5 kV
Voltage protection level at 5 kA (U _p)	≤ 0.6 kV	≤ 2 kV
Response time (t _A)	≤ 25 ns	≤ 25 ns
Operating temperature range (T _U)	-40°C...+80°C	-40°C...+80°C
Operating state/fault indication	green / red	gren / red
Number of ports	1	1
Cross-sectional area (min.)	1.5 mm ² solid/flexible	1.5 mm ² solid/flexible
Cross-sectional area (max.)	35 mm ² stranded/25 mm ² flexible	35 mm ² stranded/25 mm ² flexible
For mounting on	35 mm DIN rail acc. to EN 60715	35 mm DIN rail acc. to EN 60715
Enclosure material	thermoplastic, red, UL 94 V-0	thermoplastic, red, UL 94 V-0
Place of installation	indoor installation	indoor installation
Degree of protection	IP 20	IP 20
Capacity	2 modules, DIN 43880	2 modules, DIN 43880
Approvals	UL	UL
Type of remote signalling contact	changeover contact	changeover contact
a.c. switching capacity	250 V/0.5 A	250 V/0.5 A
d.c. switching capacity	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A
Cross-sectional area for remote signalling terminals	max. 1.5 mm ² solid/flexible	max. 1.5 mm ² solid/flexible

Accessory for DEHNguard® modular (Y)PV SCI ... (FM)

Varistor-Based Protection Module for DEHNguard M (Y)PV SCI

Varistor-based protection module for DEHNguard M YPV SCI ... and DEHNguard S PV SCI ... arresters



Type DG MOD PV ...	75	300
Part No.	952 045	952 043
Max. continuous operating d.c. voltage (U _C)	75 V	300 V

Accessory for DEHNguard® modular (Y)PV SCI ... (FM)

Varistor-Based Protection Module for DEHNguard M (Y)PV SCI

Protection module for DEHNguard M (Y)PV SCI ... arresters comprising a varistor connected in parallel with a short-circuiting device with integrated back-up fuse



Type DG MOD PV ...	SCI 75	SCI 300
Part No.	952 055	952 053
Max. continuous operating d.c. voltage (U _C)	75 V	300 V



- High discharge capacity due to heavy-duty zinc oxide varistors/spark gaps
- High reliability due to "Thermo Dynamic Control" SPD monitoring device
- Energy coordination with other arresters of the Red/Line product family
- Operating state/fault indication by indication flag in the inspection window
- Easy replacement of protection modules without tools due to module locking system with module release button
- The plug-in protection module can be replaced without the need to de-energise and without removing the distribution board cover
- Vibration and shock-tested according to EN 60068-2

For protecting low-voltage consumer's installations against surges. For installation in conformity with the lightning protection zones concept at the boundaries from $O_B - 1$ and higher.

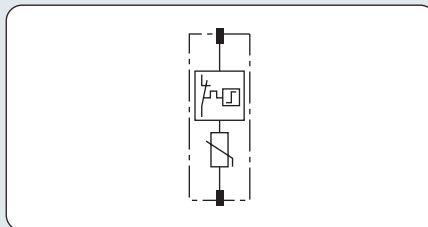
DEHNguard MOD CI 275:	Varistor-based protection module for DEHNguard M CI ... surge arresters
DEHNguard MOD ...:	Varistor-based protection module for DEHNguard M ... and DEHNguard S ... surge arresters
DEHNguard MOD 750:	Varistor-based protection module for DEHNguard M WE 600 and DEHNguard S WE 600 surge arresters
DEHNguard MOD NPE:	N-PE spark-gap-based protection module for two-pole and four-pole DEHNguard M TT ... surge arresters
DEHNgap C MOD:	N-PE spark-gap-based protection module for single-pole N-PE surge arresters of type DEHNgap C S ...
DEHNguard MOD ... VA:	Varistor-based protection module for DEHNguard S ... VA surge arresters
DEHNguard MOD PV SCI ...:	Varistor-based protection module for DEHNguard M YPV SCI and DEHNguard S PV SCI ... surge arresters
DEHNguard MOD PV ...:	Varistor-based protection module for DEHNguard M YPV SCI and DEHNguard S PV SCI ... surge arresters

The varistor and spark-gap-based protection modules of the DEHNguard M, DEHNguard S and DEHNgap C S devices distinguish themselves through their outstanding performance and sophistication. Their compact protection modules include the complete protective circuit as well as the monitoring and disconnection device. The green flag in the inspection window indicates the availability of the protection modules.

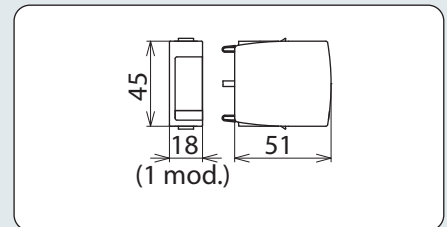
All protection modules are mechanically coded to ensure against installing an incorrect module. The protection modules can be easily replaced without tools by simply pressing the user-friendly module release button.

Protection Module for DEHNguard® M, ... S and DEHNgap C S

Varistor-based Protection Module



Basic circuit diagram DG MOD



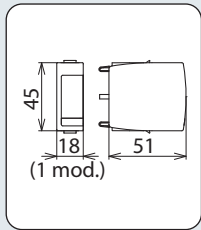
Dimension drawing DG MOD

Varistor-based protection module for DEHNguard M ... and DEHNguard S ... surge arresters

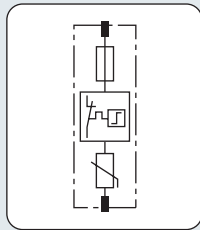
Type	DG MOD 48	DG MOD 75	DG MOD 150	DG MOD 275	DG MOD 320	DG MOD 385	DG MOD 440	DG MOD 600
Part No.	952 018	952 011	952 012	952 010	952 013	952 014	952 015	952 016
Nominal discharge current (8/20 μs) (I_n)	10 kA	10 kA	15 kA	20 kA	20 kA	20 kA	20 kA	15 kA
Max. discharge current (8/20 μs) (I_{max})	25 kA	40 kA	40 kA	40 kA	40 kA	40 kA	40 kA	30 kA
Max. continuous operating a.c. voltage (U_C)	48 V	75 V	150 V	275 V	320 V	385 V	440 V	600 V
Max. continuous operating d.c. voltage (U_C)	60 V	100 V	200 V	350 V	420 V	500 V	585 V	600 V

Type 2 Surge Arresters

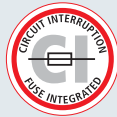
Varistor-based Protection Module for DEHNguard M CI



Dimension drawing
DG MOD CI 275



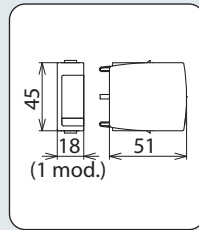
Basic circuit diagram
DG MOD CI 275



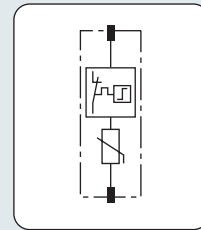
Protection module for DEHNguard M ... CI 275 surge arresters comprising a varistor connected in series with the integrated backup fuse

Type	DG MOD CI 275
Part No.	952 020
Nominal discharge current (8/20 μs) (I _n)	12.5 kA
Max. discharge current (8/20 μs) (I _{max})	25 kA
Max. continuous operating a.c. voltage (U _C)	275 V

Varistor-based Protection Module for DEHNguard M (S) WE



Dimension drawing
DG MOD 750



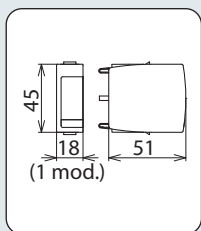
Basic circuit diagram
DG MOD 750



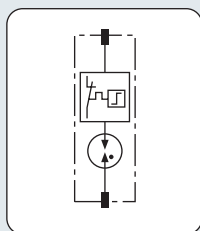
Varistor-based protection module for DEHNguard M WE ... and DEHNguard S WE ... surge arresters with a rated varistor voltage U_{mov} = 750 V a.c.

Type	DG MOD 750
Part No.	952 017
Nominal discharge current (8/20 μs) (I _n)	15 kA
Max. discharge current (8/20 μs) (I _{max})	25 kA
Max. continuous operating a.c. voltage (U _C)	600 V
Max. continuous operating d.c. voltage (U _C)	600 V
Rated varistor voltage (U _{mov})	750 V

N-PE Spark-Gap-Based Protection Module for DEHNguard M TT ...



Dimension drawing
DG MOD NPE



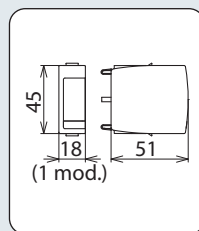
Basic circuit diagram
DG MOD NPE



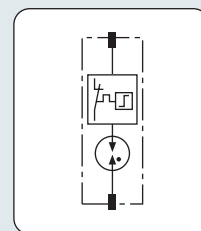
N-PE spark-gap-based protection module for two-pole and four-pole DEHNguard DG M TT ... surge arresters

Type	DG MOD NPE
Part No.	952 050
Nominal discharge current (8/20 μs) (I _n)	20 kA
Max. discharge current (8/20 μs) (I _{max})	40 kA
Max. continuous operating a.c. voltage (U _C)	255 V

N-PE Spark-Gap-Based Protection Module for DEHNgap C S



Dimension drawing
DGP C MOD



Basic circuit diagram
DGP C MOD

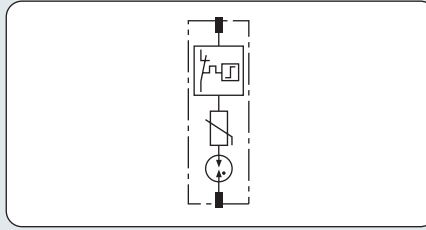


N-PE spark-gap-based protection module for single-pole N-PE surge arresters of type DEHNgap DGP C S ...

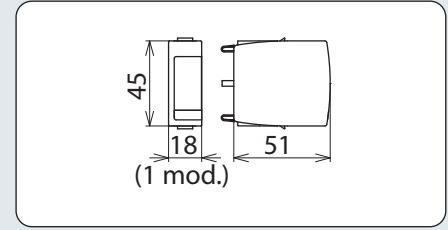
Type	DGP C MOD
Part No.	952 060
Nominal discharge current (8/20 μs) (I _n)	20 kA
Max. discharge current (8/20 μs) (I _{max})	40 kA
Max. continuous operating a.c. voltage (U _C)	255 V

Varistor and Spark-Gap-Based Protection Module for DEHNguard S ... VA

Type 2 Surge Arresters



Basic circuit diagram DG MOD ... VA

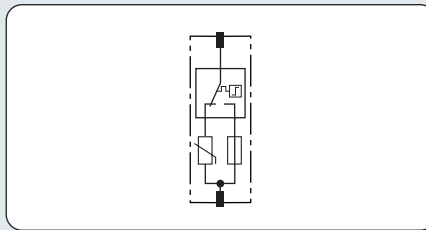


Dimension drawing DG MOD ... VA

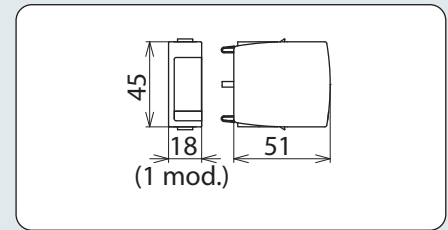
Protection module for DEHNguard S ... VA surge arresters comprising a varistor connected in series with a spark gap

Type	DG MOD 75 VA	DG MOD 275 VA	DG MOD 385 VA
Part No.	952 025	952 027	952 029
Nominal discharge current (8/20 μs) (I _n)	10 kA	10 kA	10 kA
Max. discharge current (8/20 μs) (I _{max})	20 kA	20 kA	20 kA
Max. continuous operating a.c. voltage (U _c)	75 V	275 V	385 V
Max. continuous operating d.c. voltage (U _c)	100 V	350 V	500 V

Varistor-based Protection Module for DEHNguard M YPV SCI and DEHNguard S PV SCI



Basic circuit diagram DG MOD PV SCI



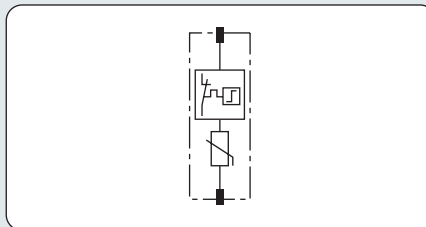
Dimension drawing DG MOD PV SCI

Protection module for DEHNguard M (Y)PV SCI ... surge arresters comprising a varistor connected in parallel with a short-circuiting device with integrated backup fuse

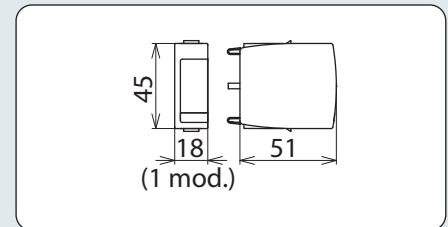
Type	DG MOD PV SCI 75	DG MOD PV SCI 300	DG MOD PV SCI 500	DG MOD PV SCI 600
Part No.	952 055 NEW	952 053	952 051	952 054
Nominal discharge current (8/20 μs) (I _n)	10 kA	12.5 kA	12.5 kA	12.5 kA
Max. discharge current (8/20 μs) (I _{max})	20 kA	25 kA	25 kA	25 kA
Max. continuous operating d.c. voltage (U _c)	75 V	300 V	500 V	600 V

Varistor-based Protection Module for DEHNguard M YPV SCI and DEHNguard S PV SCI

NEW



Basic circuit diagram DG MOD PV



Dimension drawing DG MOD PV

Varistor-based protection module for DEHNguard M YPV SCI ... and DEHNguard S PV SCI ... surge arresters

Type	DG MOD PV 75	DG MOD PV 300	DG MOD PV 500	DG MOD PV 600
Part No.	952 045	952 043	952 041	952 044
Nominal discharge current (8/20 μs) (I _n)	10 kA	20 kA	20 kA	15 kA
Max. discharge current (8/20 μs) (I _{max})	40 kA	40 kA	40 kA	30 kA
Max. continuous operating d.c. voltage (U _c)	75 V	300 V	500 V	600 V

- High discharge capacity due to heavy-duty zinc oxide varistor
- Quick response
- High reliability due to "Thermo Dynamic Control" disconnecter
- Fault indication by red indicator flag in the inspection window
- Specifically designed for high system voltages



For protecting low voltage consumer's installations against surges. For installation in conformity with the lightning protection zones concept at the boundaries from $0_B - 1$ and higher.

DEHNguard 1000: Compact single-pole surge arrester with a rated voltage $U_C = 1000$ V a.c.

DEHNguard ... FM: With remote signalling contact for monitoring device (floating changeover contact)

With rated voltages up to 1000 V, the compact and powerful DEHNguard 1000 (FM) single-pole surge arresters can be used for a wide range of applications.

The DEHNguard family is not only characterised by its high degree of flexibility, but also by its distinctive performance parameters which set standards worldwide: The high discharge capacity, low voltage protection level and dual "Thermo Dynamic Control" monitoring and disconnection device stand for maximum reliability.

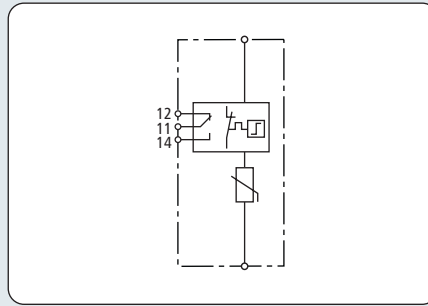
It is the DEHN-specific "Thermo Dynamic Control" disconnecter that ensures that the arresters change into a safe, isolated state even in case of extreme overload. For this purpose, the surface temperature of the heavy-duty varistor and the intensity of the discharge current is evaluated.

The external design of the device reflects its field of application. DEHNguard 1000 (FM), with a width of two modules, entirely fulfils all mechanical requirements resulting from the high system voltages.

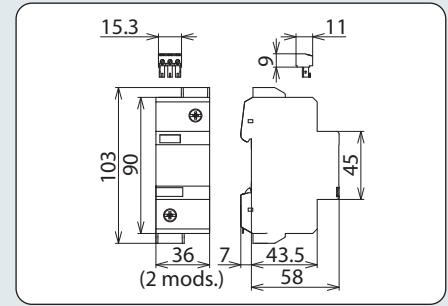
Apart from the standard visual indication with green and red indicator flags, DEHNguard 1000 (FM) arresters feature a three-pole remote signalling terminal. With its floating changeover contact, the remote signal can be used as a break or make contact according to the particular circuit concept.

Earthing brackets of type EB DG 1000 1 3 and EB 1 4 9 can be used to connect earth terminals of several DEHNguard 1000 (FM) surge arresters to earth.





Basic circuit diagram DG 1000 FM



Dimension drawing DG 1000 FM

- High discharge capacity due to heavy-duty zinc oxide varistor
- High reliability due to "Thermo Dynamic Control" disconnecter
- Specifically designed for high system voltages

Compact single-pole surge arrester with a rated voltage $U_C = 1000$ V a.c.; FM version with floating remote signalling contact

Type	DG 1000	DG 1000 FM
Part No.	950 102	950 112
SPD according to EN 61643-11	Type 2	Type 2
SPD according to IEC 61643-1/-11	Class II	Class II
Max. continuous operating a.c. voltage (U_C)	1000 V	1000 V
Max. continuous operating d.c. voltage (U_C)	1000 V	1000 V
Nominal discharge current (8/20 μ s) (I_n)	15 kA	15 kA
Max. discharge current (8/20 μ s) (I_{max})	30 kA	30 kA
Voltage protection level (U_p)	≤ 4.2 kV	≤ 4.2 kV
Voltage protection level at 5 kA (U_p)	≤ 3.5 kV	≤ 3.5 kV
Response time (t_A)	≤ 25 ns	≤ 25 ns
Max. overcurrent protection	100 A aM	100 A aM
Max. overcurrent protection for $U \leq 690$ V a.c.	125 A gL/gG	125 A gL/gG
Short-circuit withstand capability for max. backup fuse	25 kA _{rms}	25 kA _{rms}
Operating temperature range (T_U)	-40°C...+80°C	-40°C...+80°C
Operating state/fault indication	green / red	green / red
Number of ports	1	1
Cross-sectional area (min.)	1.5 mm ² solid/flexible	1.5 mm ² solid/flexible
Cross-sectional area (max.)	35 mm ² stranded/25 mm ² flexible	35 mm ² stranded/25 mm ² flexible
For mounting on	35 mm DIN rail acc. to EN 60715	35 mm DIN rail acc. to EN 60715
Enclosure material	thermoplastic, red, UL 94 V-0	thermoplastic, red, UL 94 V-0
Place of installation	indoor installation	indoor installation
Degree of protection	IP 20	IP 20
Capacity	2 modules, DIN 43880	2 modules, DIN 43880
Approvals	UL	UL
Type of remote signalling contact	—	changeover contact
a.c. switching capacity	—	250 V/0.5 A
d.c. switching capacity	—	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A
Cross-sectional area for remote signalling terminals	—	max. 1.5 mm ² solid/flexible

Accessory for DEHNgard® 1000 (FM)

Earthing Clip DG, three-pole, single-phase

Earthing clip for connecting the earth terminals of e.g. 3 Type 1 SPDs in a two-module enclosure with multi-functional terminal to earth

Type	EB DG 1000 1 3
Part No.	900 411
Dimensions	34 x 112 x 3 mm
Terminal	up to 25 mm ²



Accessory for DEHNgard® 1000 (FM)

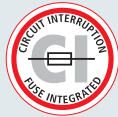
Earthing Clip, four-pole, single-phase

Earthing clip for connecting the earth terminals of e.g. 4 Type 1 SPDs in a two-module enclosure with multi-functional terminal to earth

Type	EB 1 4 9
Part No.	900 417
Dimensions	34 x 148 x 3 mm
Terminal	up to 25 mm ²



- Surge arrester for use in size 00 and 1 NH fuse holders
- Zinc oxide varistor with monitoring device, disconnecter and integrated backup fuse (VA NH with additional spark gap connected in series)
- Energy coordination with other arresters of the Red/Line product family
- Fault indication by tripping indicator



For protecting low voltage consumer's installations against surges. For installation in conformity with the lightning protection zones concept at the boundaries from $O_B - 1$ and higher. German patented design.

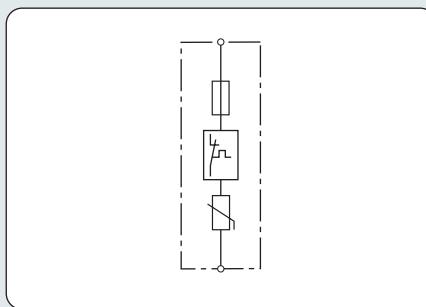
- V(A) NH00 280: Surge arrester for use in size 00 NH fuse holders
- V(A) NH1 280: Surge arrester for use in size 1 NH fuse holders
- V(A) NH00 280 FM: With fault indicator for remote signalling; allows for use of NH fuse holders with microswitch (max. tripping distance of indicator of 7 mm)

The single-pole V NH and VA NH surge arresters show that surge protective devices do not necessarily have to be designed for DIN rails or socket outlets. Adapted to the requirements in industrial sub-circuit distribution boards, V NH and VA NH surge arresters are designed in the form of an NH fuse holder. This allows to easily integrate them into busbar systems, which are frequently used in the environment of utility operators or in industrial plants. Thus, these surge protective devices offer all the advantages of busbar systems such as easy installation, low installation time and reduced wiring. The idea of such a busbar system is consistently continued with arresters in NH design. V NH and VA NH surge arresters can be installed and removed by means of a fuse switch-disconnector and a fuse handle. This considerably facilitates insulation measurements in the installation as the arrester does not have to be disconnected any more.

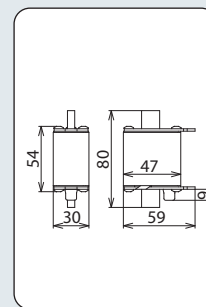


Another considerable advantage of the V NH / VA NH family is that a backup fuse is already integrated in the arrester. In case of earth-fault and short-circuit-proof wiring, this considerably saves costs and reduces space require-

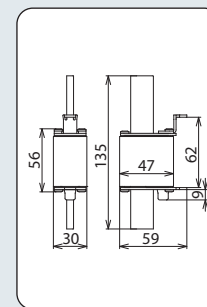
ments in distribution boards. In case of the VA NH version, a spark gap was connected in series with the heavy-duty zinc oxide varistor with thermal monitoring and disconnection device of the V NH surge arresters. VA NH devices are used to reliably protect large-scale systems with permanent insulation monitoring. Apart from the standard visual indication by a tripping indicator, V(A) NH ... FM surge arresters feature a microswitch integrated in the NH fuse holder for remote signalling.



Basic circuit diagram V NH00 (FM), N NH1



Dimension drawing V NH00 (FM)



Dimension drawing V NH1

- Surge arrester for use in size 00 and 1 NH fuse holders
- Zinc oxide varistor with monitoring device, disconnecter and integrated backup fuse (VA, NH with additional spark gap connected in series)
- Fault indication by tripping indicator

V NH00 (FM): Surge arrester for use in size 00 NH fuse holders, optionally available with special indicator for remote signalling

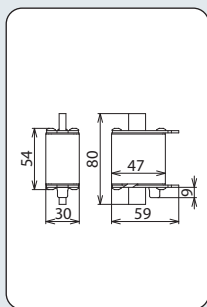
V NH1: Surge arrester for use in size 1 NH fuse holders

Type	V NH00 280	V NH00 280 FM
Part No.	900 261	900 263
SPD according to EN 61643-11	Type 2	Type 2
SPD according to IEC 61643-1/-11	Class II	Class II
Max. continuous operating a.c. voltage (U_c)	280 V	280 V
Nominal discharge current (8/20 μ s) (I_n)	15 kA	15 kA
Max. discharge current (8/20 μ s) (I_{max})	30 kA	30 kA
Voltage protection level (U_p)	≤ 1.25 kV	≤ 1.25 kV
Voltage protection level at 5 kA (U_p)	≤ 1 kV	≤ 1 kV
Response time (t_A)	≤ 25 ns	≤ 25 ns
Maximum mains-side overcurrent protection	not required	not required
Short-circuit withstand capability	25 kA _{rms}	25 kA _{rms}
Temporary overvoltage (TOV) (U_T)	335 V / 5 sec.	335 V / 5 sec.
TOV characteristics	withstand	withstand
Indication of the disconnecter	red indicator	red indicator
Indicator for remote signalling	—	tripping distance of 7 mm
Number of ports	1	1
Operating temperature range (T_U)	-40 °C...+80 °C	-40 °C...+80 °C
For mounting on	size 00 NH fuse holders	size 00 NH fuse holders
Enclosure material	thermoplastic, red, UL 94 V-0	thermoplastic, red, UL 94 V-0
Place of installation	indoor installation	indoor installation
Degree of protection	IPX4W	IPX4W

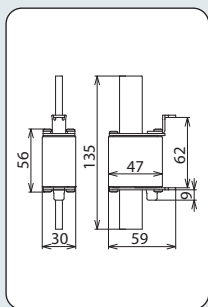
Type	V NH1 280
Part No.	900 270
SPD according to EN 61643-11	Type 2
SPD according to IEC 61643-1/-11	Class II
Max. continuous operating a.c. voltage (U_c)	280 V
Nominal discharge current (8/20 μ s) (I_n)	15 kA
Max. discharge current (8/20 μ s) (I_{max})	30 kA
Voltage protection level (U_p)	≤ 1.25 kV
Voltage protection level at 5 kA (U_p)	≤ 1 kV
Response time (t_A)	≤ 25 ns
Maximum mains-side overcurrent protection	not required
Short-circuit withstand capability	25 kA _{rms}
Temporary overvoltage (TOV) (U_T)	335 V / 5 sec.
TOV characteristics	withstand
Indication of the disconnecter	red indicator
Number of ports	1
Operating temperature range (T_U)	-40 °C...+80 °C
For mounting on	size 1 NH fuse holders
Enclosure material	thermoplastic, red, UL 94 V-0
Place of installation	indoor installation
Degree of protection	IPX4W

Type 2 Surge Arresters

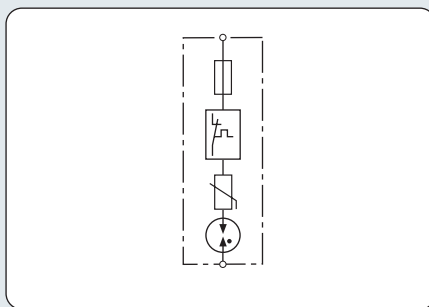
VA NH00 (FM) / VA NH1



Dimension drawing
VA NH00 (FM)



Dimension drawing
VA NH1



Basic circuit diagram VA NH00 (FM), VA NH1



- Surge arrester for use in size 00 and 1 NH fuse holders
- Zinc oxide varistor with monitoring device, disconnecter and integrated backup fuse (VA NH with additional spark gap connected in series)
- Fault indication by tripping indicator

VA NH00 (FM): Surge arrester with a varistor and a spark gap connected in series; for use in size 00 NH fuse holders, optionally available with special indicator for remote signalling

VA NH1: Surge arrester with a varistor and a spark gap connected in series; for use in size 1 NH fuse holders

Type	VA NH00 280	VA NH00 280 FM
Part No.	900 262	900 264
SPD according to EN 61643-11	Type 2	Type 2
SPD according to IEC 61643-1/-11	Class II	Class II
Max. continuous operating a.c. voltage (U _c)	280 V	280 V
Nominal discharge current (8/20 μs) (I _n)	10 kA	10 kA
Max. discharge current (8/20 μs) (I _{max})	20 kA	20 kA
Voltage protection level (U _p)	≤ 1.5 kV	≤ 1.5 kV
Response time (t _d)	≤ 100 ns	≤ 100 ns
Maximum mains-side overcurrent protection	not required	not required
Short-circuit withstand capability	25 kA _{rms}	25 kA _{rms}
Temporary overvoltage (TOV) (U _T)	335 V / 5 sec.	335 V / 5 sec.
TOV characteristics	withstand	withstand
Indication of the disconnecter	red indicator	red indicator
Indicator for remote signalling	—	tripping distance of 7 mm
Number of ports	1	1
Operating temperature range (T _U)	-40 °C...+80 °C	-40 °C...+80 °C
For mounting on	size 00 NH fuse holders	size 00 NH fuse holders
Enclosure material	thermoplastic, red, UL 94 V-0	thermoplastic, red, UL 94 V-0
Place of installation	indoor installation	indoor installation
Degree of protection	IPX4W	IPX4W

Type	VA NH1 280
Part No.	900 271
SPD according to EN 61643-11	Type 2
SPD according to IEC 61643-1/-11	Class II
Max. continuous operating a.c. voltage (U _c)	280 V
Nominal discharge current (8/20 μs) (I _n)	10 kA
Max. discharge current (8/20 μs) (I _{max})	20 kA
Voltage protection level (U _p)	≤ 1.5 kV
Response time (t _d)	≤ 100 ns
Maximum mains-side overcurrent protection	not required
Short-circuit withstand capability	25 kA _{rms}
Temporary overvoltage (TOV) (U _T)	335 V / 5 sec.
TOV characteristics	withstand
Indication of the disconnecter	red indicator
Number of ports	1
Operating temperature range (T _U)	-40 °C...+80 °C
For mounting on	size 1 NH fuse holders
Enclosure material	thermoplastic, red, UL 94 V-0
Place of installation	indoor installation
Degree of protection	IPX4W

- Two-pole surge arrester consisting of a base part and plug-in protection module
- High discharge capacity due to heavy-duty zinc oxide varistor/spark gap combination
- Energy coordination with other arresters of the Red/Line product family
- Operating state/fault indication by indicator flag in the inspection window
- Narrow (modular) design according to DIN 43880
- Easy replacement of protection modules due to module locking system with module release button
- Vibration and shock-tested according to EN 60068-2



For protecting the power supply circuit of industrial electronics equipment against transient surges in switchgear cabinets. For installation in conformity with the lightning protection zones concept at the boundaries from 1 – 2 and higher.

DEHNrail M 2P ...: Two-pole surge arrester consisting of a base part and plug-in protection module
DEHNrail M 2P ... FM: With remote signalling contact for monitoring device (floating changeover contact)

The modular devices of the DEHNrail M product family stand out due to their high performance parameters and their new straightforward Red/Line design and combine safety and user-friendliness in a single module. The low voltage protection level and the comprehensive common and differential mode protection make them ideal for protecting terminal equipment in industrial electronics environments. The input and output terminals for series connection and the protective circuit designed for high load currents underline this concept.

Compact in design, DEHNrail M surge arresters feature a distinctive Y protection circuit and a combined SPD monitoring and disconnection device.

The base part and protection module are coded to ensure against installing an incorrect module.

The new module locking system of the DEHNrail M product family is unique for surge protective devices. It fixes the protection module to the base part. Neither vibration during transport nor the electromagnetic forces of discharge can loosen the connection.

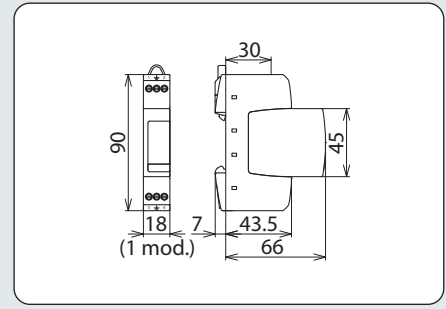
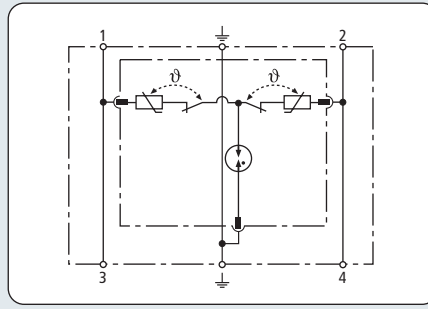
In the event of the protective circuit being overloaded, the protection modules can be easily replaced without tools by simply pressing the module release button.



In addition to the standard visual indication with green and red indicator flags, DEHNrail M ... FM devices feature a three-pole remote signalling terminal. With its floating changeover contact, the remote signal can be used as a break or make contact according to the particular circuit concept.

DEHNrail M 2P ...

Type 3 Surge Arresters



Basic circuit diagram DR M 2P ...

Dimension drawing DR M 2P ...

- Two-pole surge arrester consisting of a base element and plug-in protection module
- High discharge capacity due to heavy-duty zinc oxide varistor/spark gap combination
- Energy coordination with other arresters of the Red/Line product family

Two-pole surge arrester consisting of a base part and plug-in protection module

Type	DR M 2P 30	DR M 2P 60	DR M 2P 75	DR M 2P 150	DR M 2P 255
Part No.	953 201	953 202	953 203	953 204	953 200
SPD according to EN 61643-11	Type 3	Type 3	Type 3	Type 3	Type 3
SPD according to IEC 61643-1/-11	Class III	Class III	Class III	Class III	Class III
Nominal a.c. voltage (U_N)	24 V	48 V	60 V	120 V	230 V
Max. continuous operating a.c. voltage (U_C)	30 V	60 V	75 V	150 V	255 V
Max. continuous operating d.c. voltage (U_C)	30 V	60 V	75 V	150 V	255 V
Nominal load current a.c. (I_L)	25 A	25 A	25 A	25 A	25 A
Nominal discharge current (8/20 μ s) (I_n)	1 kA	1 kA	2 kA	2 kA	3 kA
Total discharge current (8/20 μ s) [L+N-PE] (I_{total})	2 kA	2 kA	4 kA	4 kA	5 kA
Combined impulse (U_{OC})	2 kV	2 kV	4 kV	4 kV	6 kV
Combined impulse [L+N-PE] ($U_{OC total}$)	4 kV	4 kV	8 kV	8 kV	10 kV
Voltage protection level [L-N] (U_p)	≤ 180 V	≤ 350 V	≤ 400 V	≤ 640 V	≤ 1250 V
Voltage protection level [L/N-PE] (U_p)	≤ 630 V	≤ 730 V	≤ 730 V	≤ 800 V	≤ 1500 V
Response time [L-N] (t_A)	≤ 25 ns	≤ 25 ns	≤ 25 ns	≤ 25 ns	≤ 25 ns
Response time [L/N-PE] (t_A)	≤ 100 ns	≤ 100 ns	≤ 100 ns	≤ 100 ns	≤ 100 ns
Max. mains-side overcurrent protection	25 A gL/gG or B 25 A	25 A gL/gG or B 25 A	25 A gL/gG or B 25 A	25 A gL/gG or B 25 A	25 A gL/gG or B 25 A
Short-circuit withstand capability for mains-side overcurrent protection with 25 A gL/gG	6 kA _{rms}	6 kA _{rms}	6 kA _{rms}	6 kA _{rms}	6 kA _{rms}
Temporary overvoltage (TOV) [L-N] (U_T)	—	—	—	—	335 V / 5 sec.
Temporary overvoltage (TOV) [L/N-PE] (U_T)	—	—	—	—	400 V / 5 sec.
Temporary overvoltage (TOV) [L+N-PE] (U_T)	—	—	—	—	1200 V + U_{CS} / 200 ms
TOV characteristics [L-N]	—	—	—	—	withstand
TOV characteristics [L/N-PE]	—	—	—	—	withstand
TOV characteristics [L+N-PE]	—	—	—	—	withstand
Operating temperature range (T_U)	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C
Operating state/fault indication	green / red	green / red	green / red	green / red	green / red
Number of ports	1	1	1	1	1
Cross-sectional area (min.)	0.5 mm ² solid/flexible				
Cross-sectional area (max.)	4 mm ² solid/2.5 mm ² flexible				
For mounting on	35 mm DIN rail acc. to EN 60715				
Enclosure material	thermoplastic, red, UL 94 V-0				
Place of installation	indoor installation	indoor installation	indoor installation	indoor installation	indoor installation
Degree of protection	IP 20	IP 20	IP 20	IP 20	IP 20
Capacity	1 module, DIN 43880	1 module, DIN 43880	1 module, DIN 43880	1 module, DIN 43880	1 module, DIN 43880
Approvals	KEMA, VDE, UL, VdS, CSA	KEMA, VDE, UL, VdS, CSA	KEMA, VDE, UL, VdS, CSA	KEMA, VDE, UL, VdS, CSA	KEMA, VDE, UL, VdS, CSA

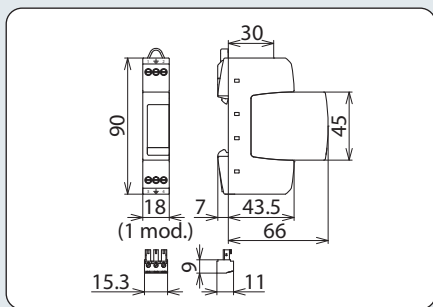
Accessory for DEHNrail modular

Protection Module for DEHNrail M 2P

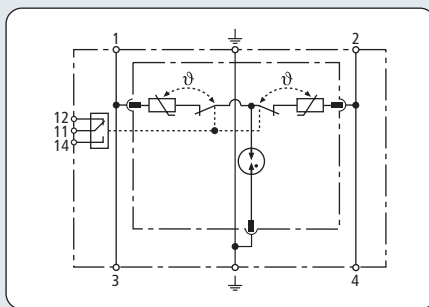
Protection module with integrated Y protection circuit



Type DR MOD ...	30	60	75	150	255
Part No.	953 011	953 012	953 013	953 014	953 010
Max. continuous operating a.c. voltage (U_C)	30 V	60 V	75 V	150 V	255 V



Dimension drawing DR M 2P ... FM



Basic circuit diagram DR M 2P ... FM



- Two-pole surge arrester consisting of a base element and plug-in protection module
- High discharge capacity due to heavy-duty zinc oxide varistor/spark gap combination
- Energy coordination with other arresters of the Red/Line product family

Two-pole surge arrester consisting of a base part and plug-in protection module; with floating remote signalling contact

Type	DR M 2P 30 FM	DR M 2P 60 FM	DR M 2P 75 FM	DR M 2P 150 FM	DR M 2P 255 FM
Part No.	953 206	953 207	953 208	953 209	953 205
SPD according to EN 61643-11	Type 3	Type 3	Type 3	Type 3	Type 3
SPD according to IEC 61643-1/-11	Class III	Class III	Class III	Class III	Class III
Nominal a.c. voltage (U_N)	24 V	48 V	60 V	120 V	230 V
Max. continuous operating a.c. voltage (U_C)	30 V	60 V	75 V	150 V	255 V
Max. continuous operating d.c. voltage (U_C)	30 V	60 V	75 V	150 V	255 V
Nominal load current a.c. (I_n)	25 A	25 A	25 A	25 A	25 A
Nominal discharge current (8/20 μ s) (I_n)	1 kA	1 kA	2 kA	2 kA	3 kA
Total discharge current (8/20 μ s) [L+N-PE] (I_{total})	2 kA	2 kA	4 kA	4 kA	5 kA
Combined impulse (U_{OC})	2 kV	2 kV	4 kV	4 kV	6 kV
Combined impulse [L+N-PE] ($U_{OC total}$)	4 kV	4 kV	8 kV	8 kV	10 kV
Voltage protection level [L-N] (U_P)	≤ 180 V	≤ 350 V	≤ 400 V	≤ 640 V	≤ 1250 V
Voltage protection level [L/N-PE] (U_P)	≤ 630 V	≤ 730 V	≤ 730 V	≤ 800 V	≤ 1500 V
Response time [L-N] (t_A)	≤ 25 ns	≤ 25 ns	≤ 25 ns	≤ 25 ns	≤ 25 ns
Response time [L/N-PE] (t_A)	≤ 100 ns	≤ 100 ns	≤ 100 ns	≤ 100 ns	≤ 100 ns
Max. mains-side overcurrent protection	25 A gL/gG or B 25 A	25 A gL/gG or B 25 A	25 A gL/gG or B 25 A	25 A gL/gG or B 25 A	25 A gL/gG or B 25 A
Short-circuit withstand capability for mains-side overcurrent protection with 25 A gL/gG	6 kA _{rms}	6 kA _{rms}	6 kA _{rms}	6 kA _{rms}	6 kA _{rms}
Temporary overvoltage (TOV) [L-N] (U_T)	—	—	—	—	335 V / 5 sec.
Temporary overvoltage (TOV) [L/N-PE] (U_T)	—	—	—	—	400 V / 5 sec.
Temporary overvoltage (TOV) [L+N-PE] (U_T)	—	—	—	—	1200 V + U_{CS} / 200 ms
TOV characteristics [L-N]	—	—	—	—	withstand
TOV characteristics [L/N-PE]	—	—	—	—	withstand
TOV characteristics [L+N-PE]	—	—	—	—	safe
Operating temperature range (T_U)	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C
Operating state/fault indication	green / red	green / red	green / red	green / red	green / red
Number of ports	1	1	1	1	1
Cross-sectional area (min.)	0.5 mm ² solid/flexible				
Cross-sectional area (max.)	4 mm ² solid/2.5 mm ² flexible				
For mounting on	35 mm DIN rail acc. to EN 60715				
Enclosure material	thermoplastic, red, UL 94 V-0				
Place of installation	indoor installation	indoor installation	indoor installation	indoor installation	indoor installation
Degree of protection	IP 20	IP 20	IP 20	IP 20	IP 20
Capacity	1 module, DIN 43880	1 module, DIN 43880	1 module, DIN 43880	1 module, DIN 43880	1 module, DIN 43880
Approvals, Certifications	KEMA, VDE, UL, VdS, CSA	KEMA, VDE, UL, VdS, CSA	KEMA, VDE, UL, VdS, CSA	KEMA, VDE, UL, VdS, CSA	KEMA, VDE, UL, VdS, CSA
Type of remote signalling contact	changeover contact	changeover contact	changeover contact	changeover contact	changeover contact
a.c. switching capacity	250 V/0.5 A	250 V/0.5 A	250 V/0.5 A	250 V/0.5 A	250 V/0.5 A
d.c. switching capacity	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A				
Cross-sectional area for remote signalling terminals	max. 1.5 mm ² solid/flexible				

Protection Module for DEHNrail M 2P

Protection module with integrated Y protection circuit

Type DR MOD ...	30	60	75	150	255
Part No.	953 011	953 012	953 013	953 014	953 010
Max. continuous operating a.c. voltage (U_C)	30 V	60 V	75 V	150 V	255 V





For protecting the power supply circuit of industrial electronics equipment against transient surges in switchgear cabinets. For installation in conformity with the lightning protection zones concept at the boundaries from 1 – 2 and higher.

DEHNrail M 4P ...: Four-pole surge arrester consisting of a base part and plug-in protection module
DEHNrail M 4P ... FM: With remote signalling contact for monitoring device (floating changeover contact)

The four-pole, modular DEHNrail M 4P ... (FM) surge arresters were specifically developed for protecting three-phase industrial electronics terminal equipment. Adapted to this environment, the arresters with the new Red/Line design are designed for mounting on 35 mm DIN rails. The low voltage protection level and the comprehensive common and differential mode protection are characteristic of DEHNrail M 4P ... (FM). In order to optimally provide the low voltage protection levels for the terminal equipment to be protected, the device features input and output terminals for series connection. Therefore, DEHNrail M 4P ... (FM) devices ideally adapt themselves to the cable run upstream of the terminal equipment without requiring additional terminal blocks for outgoing cables. Compact in design, the DEHNrail M 4P ... (FM) already incorporates the tried and tested disconnecter. It disconnects an overloaded arrester circuit from the power supply without interrupting the supply circuit.

The base part and protection module are coded to ensure against installing the incorrect module.

The new module locking system of the DEHNrail M family is unique for surge protective devices. It fixes the protection modules to the base part. Neither vibrations during transport nor the electrodynamic forces of discharge can loosen the connection.

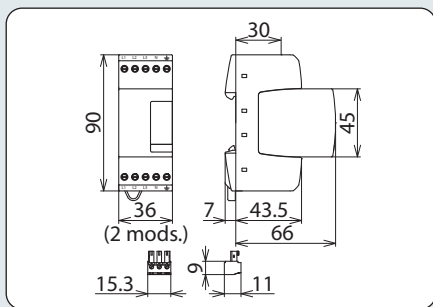
- Four-pole surge arrester consisting of a base part and plug-in protection module
- High discharge capacity due to heavy-duty zinc oxide varistor/spark gap combination
- Energy coordination with other arresters of the Red/Line product family
- Operating state/fault indication by indicator flag in the inspection window
- Easy replacement of protection modules without tools due to module locking system with module release button
- Nominal load currents up to 25 A
- Vibration and shock-tested in accordance with EN 60068-2

In the event of the protective circuit, which is rated for high load currents up to 25 A, being overloaded despite of the powerful designs of the surge arrester, the protection modules can be easily replaced without tools by simply pressing the module release button.

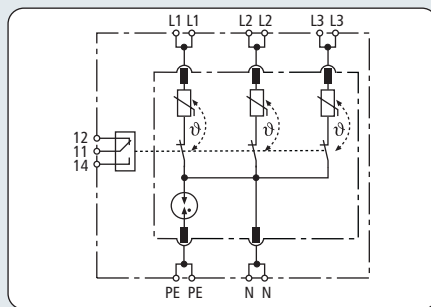
Apart from the standard visual indication with green and red indicator flags, DEHNrail M 4P ... FM devices feature a three-pole remote signalling terminal. With its floating changeover contact, the remote signal can be used as a break or make contact according to the particular circuit concept.



Type 3 Surge Arresters



Dimension drawing DR M 4P ... FM



Basic circuit diagram DR M 4P ... FM



Four-pole surge arrester consisting of a base part and plug-in protection module; FM version with floating remote signalling contact

- Four-pole surge arrester consisting of a base element and plug-in protection module
- High discharge capacity due to heavy-duty zinc oxide varistor/spark gap combination
- Energy coordination with other arresters of the Red/Line product family

Type	DR M 4P 255	DR M 4P 255 FM
Part No.	953 400	953 405
SPD according to EN 61643-11	Type 3	Type 3
SPD according to 61643-1/-11	Class III	Class III
Nominal a.c. voltage (U_N)	230/400 V	230/400 V
Max. continuous operating a.c. voltage (U_C)	255/440 V	255/440 V
Nominal load current a.c. (I_L)	25 A	25 A
Nominal discharge current (8/20 μ s) (I_n)	3 kA	3 kA
Total discharge current (8/20 μ s) [L1+L2+L3+N-PE] (I_{total})	8 kA	8 kA
Combined impulse (U_{OC})	6 kV	6 kV
Combined impulse [L1+L2+L3+N-PE] ($U_{OC total}$)	16 kV	16 kV
Voltage protection level [L-N] (U_p)	≤ 1000 V	≤ 1000 V
Voltage protection level [L/N-PE] (U_p)	≤ 1500 V	≤ 1500 V
Response time [L-N] (t_A)	≤ 25 ns	≤ 25 ns
Response time [L/N-PE] (t_A)	≤ 100 ns	≤ 100 ns
Max. mains-side overcurrent protection	25 A gL/gG or B 25 A	25 A gL/gG or B 25 A
Short-circuit withstand capability for mains-side overcurrent protection with 25 A gL/gG	6 kA _{rms}	6 kA _{rms}
Temporary overvoltage (TOV) [L-N] (U_T)	335 V / 5 sec.	335 V / 5 sec.
Temporary overvoltage (TOV) [L/N-PE] (U_T)	400 V / 5 sec.	400 V / 5 sec.
Temporary overvoltage (TOV) [N-PE] (U_T)	1200 V / 200 ms	1200 V / 200 ms
TOV characteristics [L-N]	withstand	withstand
TOV characteristics [L/N-PE]	withstand	withstand
TOV characteristics [L+N-PE]	safe	safe
Operating temperature range (T_U)	-40°C...+80°C	-40°C...+80°C
Operating state/fault indication	green / red	green / red
Number of ports	1	1
Cross-sectional area (min.)	0.5 mm ² solid/flexible	0.5 mm ² solid/flexible
Cross-sectional area (max.)	4 mm ² stranded/2.5 mm ² flexible	4 mm ² solid/2.5 mm ² flexible
For mounting on	35 mm DIN rail acc. to EN 60715	35 mm DIN rail acc. to EN 60715
Enclosure material	thermoplastic, red, UL 94 V-0	thermoplastic, red, UL 94 V-0
Place of installation	indoor installation	indoor installation
Degree of protection	IP 20	IP 20
Capacity	2 modules, DIN 43880	2 modules, DIN 43880
Approvals, Certifications	KEMA, VDE, UL	KEMA, VDE, UL
Type of remote signalling contact	—	changeover contact
a.c. switching capacity	—	250 V/0.5 A
d.c. switching capacity	—	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A
Cross-sectional area for remote signalling terminals	—	max. 1.5 mm ² solid/flexible

Accessory for DEHNrail modular, multipole

Protection Module for DEHNrail M 4P

Four-pole protection module with integrated Y protective circuit

Type	DR MOD 4P 255
Part No.	953 020
Max. continuous operating a.c. voltage (U_C)	255 V





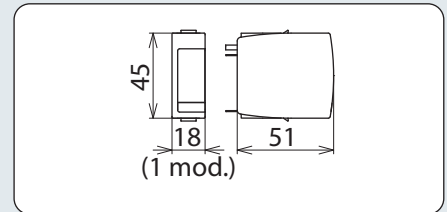
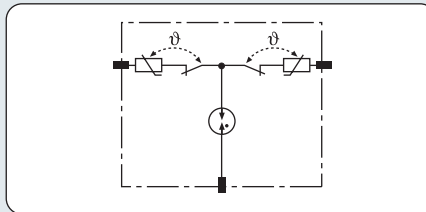
- High discharge capacity due to powerful zinc oxide varistor/spark gap combination
- High reliability due to "Thermo Dynamic Control" disconnecter with dual monitoring
- Energy coordination with other arresters of the Red/Line product family
- Easy replacement of protection modules without tools due to module locking system with module release button
- Operating state/fault indication by indicator flag in the inspection window
- The plug-in protection module can be replaced without the need to de-energise and without removing the distribution board cover
- Vibration and shock-tested in accordance with EN 60068-2

For protecting the power supply circuit of industrial electronics equipment against surges in switchgear cabinets. For installation in conformity with the lightning protection zones concept at the boundaries from 1 – 2 and higher.

DEHNrail MOD ...: For all types of two-pole DEHNrail M 2P ... surge arresters

DEHNrail MOD 4P...: For all types of four-pole DEHNrail M 4P ... surge arresters

Protection Module for DEHNrail M 2P



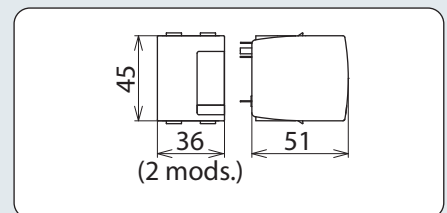
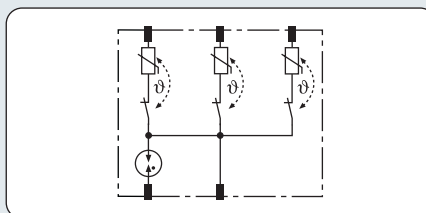
Protection module with integrated Y protection circuit

Basic circuit diagram of a DR MOD protection module

Dimension drawing of a DR MOD protection module

Type	DR MOD 30	DR MOD 60	DR MOD 75	DR MOD 150	DR MOD 255
Part No.	953 011	953 012	953 013	953 014	953 010
Nominal discharge current (8/20 μs) (I _n)	1 kA	1 kA	2 kA	2 kA	3 kA
Total discharge current (8/20 μs) [L+N-PE] (I _{total})	2 kA	2 kA	4 kA	4 kA	5 kA
Max. continuous operating a.c. voltage (U _c)	30 V	60 V	75 V	150 V	255 V
Max. continuous operating d.c. voltage (U _c)	30 V	60 V	75 V	150 V	255 V

Protection Module for DEHNrail M 4P



Four-pole protection module with integrated protective circuit

Basic circuit diagram of a DR MOD 4P protection module

Dimension drawing of a DR MOD 4P protection module

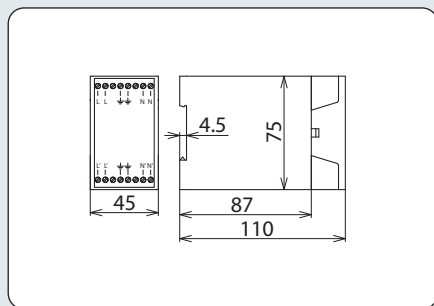
Type	DR MOD 4P 255
Part No.	953 020
Nominal discharge current (8/20 μs) (I _n)	3 kA
Total discharge current (8/20 μs) [L+N-PE] (I _{total})	8 kA
Max. continuous operating a.c. voltage (U _c)	255 V
Max. continuous operating d.c. voltage (U _c)	255 V

- Protection of sensitive industrial electronics equipment against balanced and unbalanced high-frequency interferences
- For use in combination with surge protective devices, e.g. DEHNrail M 2P 255
- Easy installation on DIN rails in switchgear cabinets

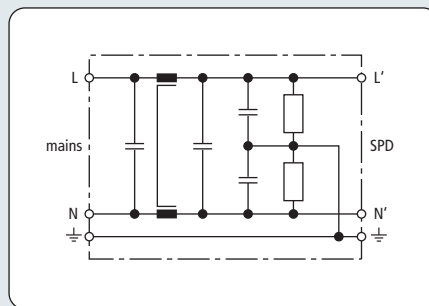


The NF 10 mains filters ideally complements surge protective devices for industrial terminal equipment. The DIN rail mounted mains filters are ideally suited for installation downstream of surge protective devices (e.g. DEHNrail M 2P 255). In addition to surge protection, protection against balanced and unbalanced high-frequency interferences is provided. The

separate input and output terminals of the mains filter ensure optimal protection of the equipment to be protected. Besides surge protection, the mains filter also fulfils electromagnetic compatibility requirements in plant and control systems.



Dimension drawing NF 10



Basic circuit diagram NF 10

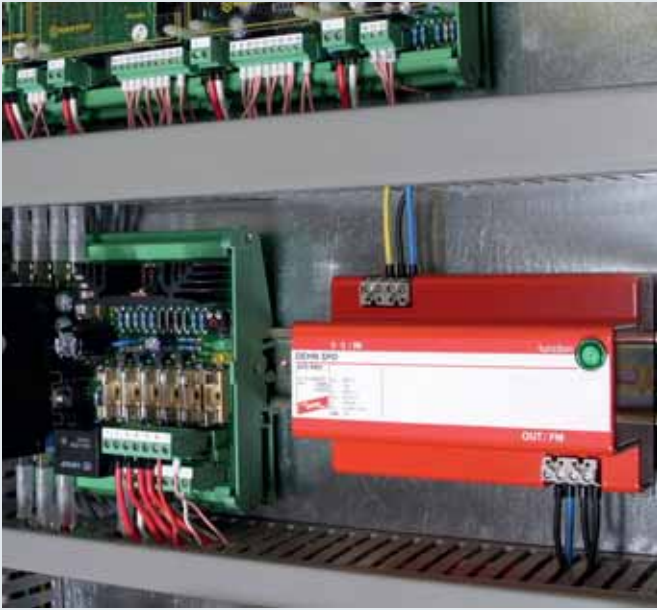


Mains filter for protection against balanced and unbalanced interferences

Type	NF 10
Part No.	912 254
Nominal a.c. voltage (U_N)	230 V
Nominal load current a.c. (I_N)	10 A
Nominal frequency (f_N)	50...60 Hz
Discharge current (for U_N)	≤ 3.5 mA
Attenuation for $f = 1$ MHz, balanced	> 64 dB
Attenuation for $f = 1$ MHz, unbalanced	> 69 dB
Total circuit capacitance [L-N]	660 nF
Total circuit capacitance [L (N)-PE]	66 nF
Total circuit inductance	1.8 mH per path
Backup fuse	10 A gL/gG
Operating temperature range	-25°C...+40°C
Cross-sectional area	min. 2.5 mm ² stranded, max. 4 mm ² flexible
For mounting on	35 mm DIN rail acc. to EN 60715
Enclosure material	thermoplastic GF (polycarbonate)
Degree of protection	IP 20
Dimensions	110 x 45 x 75 mm

Two-pole surge arrester with filter

Type 3 Surge Arresters



For protecting the power supply circuit of industrial electronics equipment (e.g. programmable logic controls (PLCs)) against transient surges and high-frequency interference voltages. For installation in conformity with the lightning protection zones concept at the boundaries from 1 – 2 and higher.

SPS Protector: Two-pole surge arrester with interference suppressor filter

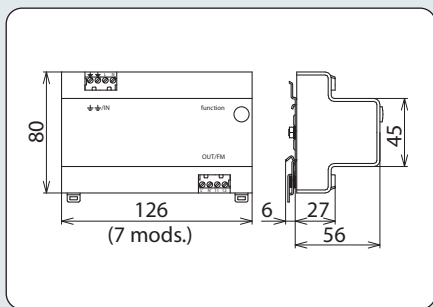
The SPS Protector combines surge protection and interference suppressor filter in a compact device. This makes it ideal for protecting sensitive terminal equipment in industrial automation systems (e.g. programmable logic controls (PLCs)). The coordinated surge protection and filter functions complement one another and prevent core saturation of the filter in the event of energetic transients. The separate input and output terminals provide optimal protection for the device to be protected. The metal

- Combination of surge protection and filter
- Surge protection with monitoring device and disconnecter
- Interference suppressor filter for protecting sensitive industrial electronics equipment against balanced and unbalanced high-frequency interference
- Installation in shielded enclosure
- Visual operating state indication (green) and floating remote signalling contact (break contact) for fault indication

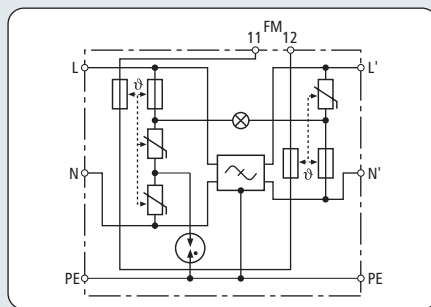
enclosure of the SPS Protector ensures that high-frequency interferences are discharged without interfering with other devices in the immediate vicinity. The compact design of the SPS Protector already houses the proven disconnecter. In case of overload, it disconnects the arrester from the mains without interrupting the power supply circuit. Apart from the green indicator light, SPS Protectors also feature a remote signalling option.



Type 3 Surge Arresters



Dimension drawing SPS PRO



Basic circuit diagram SPS PRO



- Combination of surge protection and filter
- Surge protection with monitoring device and disconnecter
- Interference suppressor filter for protecting sensitive industrial electronics equipment against balanced and unbalanced high-frequency interference

Surge arrester with interference suppressor filter

Type	SPS PRO
Part No.	912 253
SPD according to EN 61643-11	Type 3
SPD according to 61643-1/-11	Class III
Nominal a.c. voltage (U_N)	230 V
Max. continuous operating a.c. voltage (U_C)	255 V
Nominal load current a.c. (I_N)	3 A
Nominal discharge current (8/20 μ s) (I_n)	3 kA
Total discharge current (8/20 μ s) [L+N-PE] (I_{total})	5 kA
Combined impulse (U_{OC})	6 kV
Combined impulse [L+N-PE] ($U_{OC total}$)	10 kV
Voltage protection level [L-N] (U_P)	≤ 0.8 kV
Voltage protection level [L/N-PE] (U_P)	≤ 1.0 kV
Response time [L-N] (t_A)	≤ 25 ns
Response time [L/N-PE] (t_A)	≤ 100 ns
Short-circuit withstand capability for max. mains-side overcurrent protection	6 kA _{rms}
Temporary overvoltage (TOV) [L-N] (U_T)	335 V / 5 sec.
Temporary overvoltage (TOV) [L/N-PE] (U_T)	400 V / 5 sec.
Temporary overvoltage (TOV) [L+N-PE] (U_T)	1200 V + U_{CS} / 200 ms
TOV characteristics [L-N]	withstand
TOV characteristics [L/N-PE]	withstand
TOV characteristics [L+N-PE]	safe
Fault indication	green light off
Operating state indication	green light
Number of ports	2
Operating temperature range (T_U)	-10°C...+40°C
Cross-sectional area (min.)	0.14 mm ² solid/stranded/flexible
Cross-sectional area (max.)	2.5 mm ² solid/stranded/flexible
For mounting on	35 mm DIN rail acc. to EN 60715
Enclosure material	aluminium, red powder coating
Place of installation	indoor installation
Degree of protection	IP 20
Capacity	7 modules, DIN 43880
Type of remote signalling contact	break contact
a.c. switching capacity	250 V/0.5 A
d.c. switching capacity	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A
Cross-sectional area for remote signalling terminals	max. 1.5 mm ² solid/flexible
Mains filter	acc. to DIN VDE 0565 Part 3
Attenuation for f = 1 MHz, balanced	≥ 73 dB
Attenuation for f = 1 MHz, unbalanced	≥ 45 dB

Surge Arresters Type 3

Surge arrester for use in cable ducts

Type 3 Surge Arresters



For protecting electronic devices against surges. For installation in electrical installation systems, e.g. cable ducts or flush-type boxes. For installation in conformity with the lightning protection zones concept at the boundaries from 1 – 2 and higher.

DEHNsafe 230 LA: Surge protective device for use in cable ducts

DEHNsafe surge arresters particularly stand out due to their flexible application options. Due to their small mounting depth of only 31 mm, the two-pole surge protective devices for 230 V terminal equipment can be installed both in cable ducts and in flat flush-type boxes. DEHNsafe incorporates a monitoring device and a thermal disconnecter. In addition to a visual operating state indication, the device features a programmable acoustic fault indication which can be programmed for three different operating states:

- Acoustic fault indication,
- Test function,
- Muting of the acoustic signal.



- Two-pole surge protective device for 230 V terminal equipment
- For use in flush-type boxes and cable ducts
- Enhanced safety due to distinctive Y protection circuit
- Multiple visual operating state indication
- Programmable acoustic function
- Terminals for series connection
- Independent of the socket outlet design



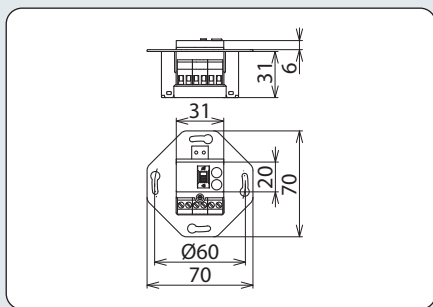
DEHNsafe surge arresters are covered by a triple TAE cover from any switch range manufacturer, thus ideally adapting to any socket outlet design.

The double terminals for L, N and PE allow for series connection to ensure that the surge protection is situated in parallel to the circuit to be protected. For this reason, DEHNsafe does not necessarily interrupt

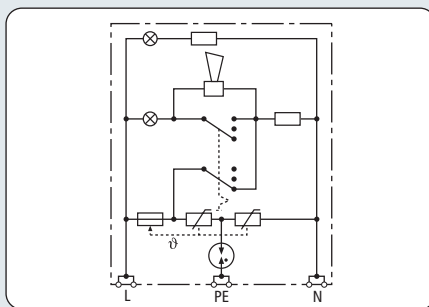
the circuit to be protected in case of overload. They feature a green and red LED for visual inspection.



Type 3 Surge Arresters



Dimension drawing DSA 230 LA



Basic circuit diagram DSA 230 LA



- For use in flush-type boxes and cable ducts
- Multiple visual operating state indication
- Programmable acoustic function

Surge protective device for use in cable ducts and flush-type boxes

Type	DSA 230 LA
Part No.	924 370
SPD according to EN 61643-11	Type 3
SPD according to IEC 61643-1/-11	Class III
Nominal a.c. voltage (U_N)	230 V
Max. continuous operating a.c. voltage (U_C)	255 V
Nominal load current (I_L)	16 A
Nominal discharge current (8/20 μ s) (I_n)	3 kA
Total discharge current (8/20 μ s) [L+N-PE] (I_{total})	5 kA
Combined impulse (U_{OC})	6 kV
Combined impulse [L+N-PE] ($U_{OC total}$)	10 kV
Voltage protection level [L-N] (U_p)	≤ 1.25 kV
Voltage protection level [L/N-PE] (U_p)	≤ 1.5 kV
Response time [L-N] (t_A)	≤ 25 ns
Response time [L/N-PE] (t_A)	≤ 100 ns
Max. mains-side overcurrent protection	16 A gL/gG or B 16 A
Short-circuit withstand capability for mains-side overcurrent protection with 16 A gL/gG	6 kA _{rms}
Temporary overvoltage (TOV) [L-N] (U_T)	335 V / 5 sec.
Temporary overvoltage (TOV) [L/N-PE] (U_T)	400 V / 5 sec.
Temporary overvoltage (TOV) [L+N-PE] (U_T)	1200 V + U_{CS} / 200 ms
TOV characteristics [L-N]	withstand
TOV characteristics [L/N-PE]	withstand
TOV characteristics [L+N-PE]	safe
Fault indication	red light + acoustic signal
Operating state indication	green light
Number of ports	1
Switch	function test / acoustic signal off
Operating temperature range (T_U)	-25°C...+40°C
Cross-sectional area (min.)	0.5 mm ² solid/stranded/flexible
Cross-sectional area (max.)	2.5 mm ² solid/stranded/flexible
For mounting on	retaining rings (Ø60 mm) for installation in switch boxes (40 mm deep)
Enclosure material	thermoplastic, grey, UL 94 V-2
Place of installation	indoor installation
Degree of protection	IP 20
Cover	TAE

Accessory for DEHNsafe

Central Covering Plate

Single unit, alpha exclusive

Type	ZAP STW
Part No.	924 329
Colour	studio white



Accessory for DEHNsafe

Cover Frame

Single unit, alpha exclusive

Type	AR1 STW
Part No.	924 328
Colour	studio white



Socket outlet with integrated surge protection

Type 3 Surge Arresters



For protecting electronic equipment against surges. Earthed socket outlet with surge protective circuit for installation in electrical installation systems. For installation in conformity with the lightning protection zones concept at the boundaries from 1 – 2 and higher. German utility patent.

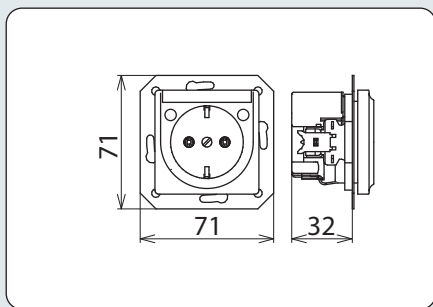
NSM Protector: Earthed socket outlet with integrated surge protection

The devices of the NSM Protector family combine surge protection and earthed socket outlet in a single device. The two-pole surge arresters are specifically designed for protecting electronic consumers in final circuits. Their very compact design incorporates the approved disconnector which disconnects overloaded surge arresters without interrupting the supply circuit. The low voltage protection level as well as the comprehensive

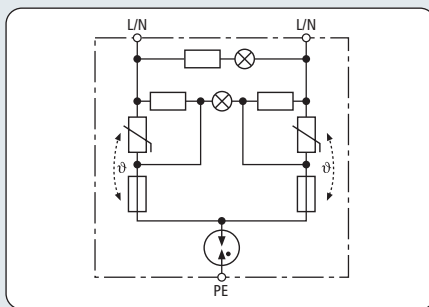
common and differential mode protection are typical of the devices of the NSM Protector family. The distinctive Y protective circuit ensures safety even if the phase and neutral conductors in final circuits cannot be identified. The integrated disconnector ensures reliability of devices and installations. The standard green and red LEDs indicate the operating state of the surge protective devices.



Type 3 Surge Arresters



Dimension drawing NSM PRO ...



Basic circuit diagram NSM PRO ...



Socket outlet with surge protection

- Surge protection with monitoring device and disconnecter
- Visual operating state (green) and fault indication (red)
- With retaining ring (diameter of 60 mm) for installation into switch boxes with a diameter of 60 mm and a depth of 40 mm

Type	NSM PRO TW	NSM PRO SI	NSM PRO AZ	NSM PRO EW
Part No.	924 335	924 337	924 339	924 342
SPD according to EN 61643-11	Type 3	Type 3	Type 3	Type 3
SPD according to IEC 61643-1/-11	Class III	Class III	Class III	Class III
Nominal a.c. voltage (U _N)	230 V	230 V	230 V	230 V
Max. continuous operating a.c. voltage (U _C)	255 V	255 V	255 V	255 V
Nominal discharge current (8/20 μs) (I _n)	3 kA	3 kA	3 kA	3 kA
Total discharge current (8/20 μs) [L+N-PE] (I _{total})	5 kA	5 kA	5 kA	5 kA
Combined impulse (U _{OC})	6 kV	6 kV	6 kV	6 kV
Combined impulse [L+N-PE] (U _{OC total})	10 kV	10 kV	10 kV	10 kV
Voltage protection level [L-N] (U _p)	≤ 1.25 kV	≤ 1.25 kV	≤ 1.25 kV	≤ 1.25 kV
Voltage protection level [L/N-PE] (U _p)	≤ 1.5 kV	≤ 1.5 kV	≤ 1.5 kV	≤ 1.5 kV
Response time [L-N] (t _A)	≤ 25 ns	≤ 25 ns	≤ 25 ns	≤ 25 ns
Response time [L/N-PE] (t _A)	≤ 100 ns	≤ 100 ns	≤ 100 ns	≤ 100 ns
Max. mains-side overcurrent protection	16 A gL/gG or B 16 A	16 A gL/gG or B 16 A	16 A gL/gG or B 16 A	16 A gL/gG or B 16 A
Short-circuit withstand capability for mains-side overcurrent protection with 16 A gL/gG	6 kA _{rms}	6 kA _{rms}	6 kA _{rms}	6 kA _{rms}
Temporary overvoltage (TOV) [L-N] (U _T)	335 V / 5 sec.	335 V / 5 sec.	335 V / 5 sec.	335 V / 5 sec.
Temporary overvoltage (TOV) [L/N-PE] (U _T)	400 V / 5 sec.	400 V / 5 sec.	400 V / 5 sec.	400 V / 5 sec.
Temporary overvoltage (TOV) [L+N-PE] (U _T)	1200 V + U _{CS} / 200 ms	1200 V + U _{CS} / 200 ms	1200 V + U _{CS} / 200 ms	1200 V + U _{CS} / 200 ms
TOV characteristics [L-N]	withstand	withstand	withstand	withstand
TOV characteristics [L/N-PE]	withstand	withstand	withstand	withstand
TOV characteristics [L+N-PE]	safe	safe	safe	safe
Fault indication	red light	red light	red light	red light
Operating state indication	green light	green light	green light	green light
Number of ports	1	1	1	1
Operating temperature range (T _U)	-25°C...+40°C	-25°C...+40°C	-25°C...+40°C	-25°C...+40°C
Cross-sectional area	screwless double terminals up to 2.5 mm ² each, also suitable for series connection			
For mounting on	retaining ring (Ø60 mm) for installation into 32 mm deep switch boxes			
Enclosure material	thermoplastic, UL 94 V-2	thermoplastic, UL 94 V-2	thermoplastic, UL 94 V-2	thermoplastic, UL 94 V-2
Place of installation	indoor installation	indoor installation	indoor installation	indoor installation
Degree of protection	IP 20	IP 20	IP 20	IP 20
DELTA line	DELTA profil, titanium white	DELTA profil, silver	DELTA profil, anthracite	DELTA plus, electrical white

Surge Arresters Type 3

Accessory for NSM Protector

AR1 Cover Frame

Single unit, suitable for NSM Protector

Type	AR1 TW	AR1 SI	AR1 AZ	AR1 EW
Part No.	924 336	924 338	924 340	924 343
Type	DELTA profil, titanium white	DELTA profil, silver	DELTA profil, anthracite	DELTA plus, electrical white



Surge arrester for earthed socket outlets

Type 3 Surge Arresters



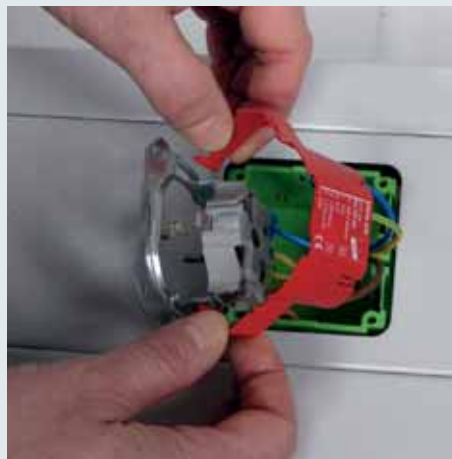
For protecting electronic devices against surges. For use with standard earthed socket outlets. For installation in conformity with the lightning protection zones concept at the boundaries from 1 – 2 and higher.

STC 230: Snap-on module for standard earthed socket outlets

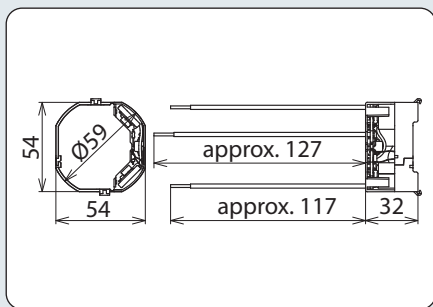
The well received STC surge protection module can be fitted inconspicuously. Being a two-pole surge arrester, the module can be installed on the rear side of standard earthed socket outlets. The STC surge protection module thus adapts to every type of socket outlet. The plastic snap-on retaining ring allows easy installation even in already mounted earthed

- Two-pole surge arrester with monitoring device and disconnecter
- Enhanced safety due to distinctive Y protection circuit
- Acoustic fault indication
- For installation in standard earthed socket outlets
- Independent of the socket outlet design
- Plastic snap-on retaining ring for easy installation in already mounted socket outlets

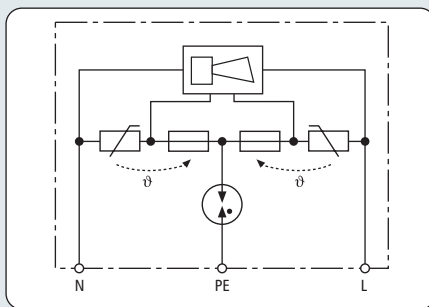
socket outlets. In addition to a thermal disconnecter, the protective device features an acoustic fault indication. As the surge protection module is installed in parallel to the socket outlet, the power supply of the connected consumers remains uninterrupted, even if the surge arrester is overloaded.



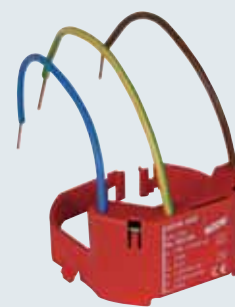
Type 3 Surge Arresters



Dimension drawing STC 230



Basic circuit diagram STC 230



Two-pole surge arrester to be snapped on earthed socket outlets

- Acoustic fault indication
- For installation in standard earthed socket outlets
- Independent of the the socket outlet design

Type	STC 230
Part No.	924 350
SPD according to EN 61643-11	Type 3
SPD according to IEC 61643-1/-11	Class III
Nominal a.c. voltage (U_N)	230 V
Max. continuous operating a.c. voltage (U_C)	255 V
Nominal discharge current (8/20 μ s) (I_n)	3 kA
Total discharge current (8/20 μ s) [L+N-PE] (I_{total})	5 kA
Combined impulse (U_{OC})	6 kV
Combined impulse [L+N-PE] ($U_{OC total}$)	10 kV
Voltage protection level [L-N] (U_P)	≤ 1.25 kV
Voltage protection level [L/N-PE] (U_P)	≤ 1.5 kV
Response time [L-N] (t_A)	≤ 25 ns
Response time [L/N-PE] (t_A)	≤ 100 ns
Max. mains-side overcurrent protection	16 A gL/gG or B 16 A
Short circuit withstand capability for mains-side overcurrent protection with 16 A gL/gG	6 kA _{rms}
Temporary overvoltage (TOV) [L-N] (U_T)	335 V / 5 sec.
Temporary overvoltage (TOV) [L/N-PE] (U_T)	400 V / 5 sec.
Temporary overvoltage (TOV) [L+N-PE] (U_T)	1200 V + U_{CS} / 200 ms
TOV characteristics [L-N]	withstand
TOV characteristics [L/N-PE]	withstand
TOV characteristics [L+N-PE]	safe
Operating temperature range (T_U)	-25°C...+40°C
Fault indication	acoustic signal on
Number of ports	1
Terminal wires	1 mm ² , length: 120 mm
For mounting on	standard earthed socket outlets
Enclosure material	thermoplastic, red, UL 94 V-2
Place of installation	indoor installation
Degree of protection of installed device	IP 20
Dimensions	54 x 54 x 32 mm
Indication of disconnecter	acoustic signal on

Surge Arresters Type 3

Flexible protection of terminal equipment

Type 3 Surge Arresters



For protecting electronic equipment against surges. For installation in electrical installation systems, e.g. flush-mounted systems, cable ducts and flush-type boxes. German utility patent for DEHNflex A / ... D. For installation in conformity with the lightning protection zones concept at the boundaries from 1 – 2 and higher.

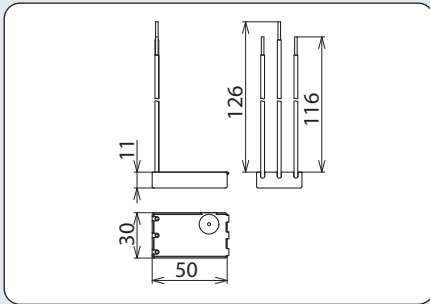
DEHNflex M: Compact design; for use in cable duct systems and flush-type boxes

DEHNflex A: For use in any cable duct systems or flush-type boxes; with test function

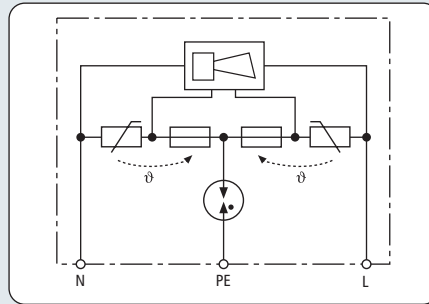
DEHNflex D: Like DEHNflex A, but for series connection of several socket outlets

As the name suggests, the DEHNflex family offers almost unlimited application options. Being two-pole surge arresters, the compact modules are ideally suited for protecting electronic consumers in final circuits. The design was adapted to the most common places of installation, that is cable ducts and flush-type boxes. DEHNflex devices show that small and compact dimensions do not necessarily mean that surge arresters are inefficient. The distinctive Y protection circuit always ensures safety even if the phase and neutral conductors cannot be identified. Apart from the powerful Y circuit, the compact enclosure also houses a disconnecter and an acoustic fault indicator. Be it in cable ducts, flush-mounted systems, branching boxes or device casings – DEHNflex is always installed in the right place close to terminal equipment.

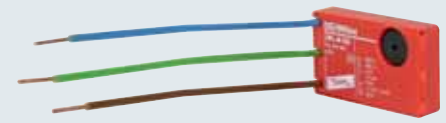




Dimension drawing DFL M



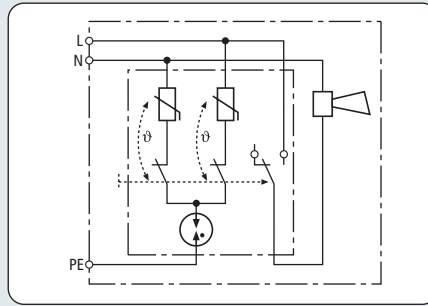
Basic circuit diagram DFL M



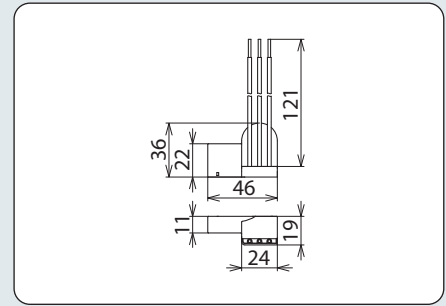
- Acoustic fault indication
- Compact design
- For use in flush-mounted systems, cable ducts and flush-type boxes

Surge arrester for use in all types of installation systems for terminal equipment; compact dimensions

Type	DFL M 255
Part No.	924 396
SPD according to EN 61643-11	Type 3
SPD according to IEC 61643-1/-11	Class III
Nominal a.c. voltage (U_N)	230 V
Max. continuous operating a.c. voltage (U_C)	255 V
Nominal discharge current (8/20 μ s) (I_n)	1.5 kA
Total discharge current (8/20 μ s) [L+N-PE] (I_{total})	3 kA
Combined impulse (U_{OC})	3 kV
Combined impulse [L+N-PE] ($U_{OC total}$)	6 kV
Voltage protection level [L-N] (U_P)	≤ 1.25 kV
Voltage protection level [L/N-PE] (U_P)	≤ 1.5 kV
Response time [L-N] (t_A)	≤ 25 ns
Response time [L/N-PE] (t_A)	≤ 100 ns
Max. mains-side overcurrent protection	32 A gL/gG or B/C 32 A
Short-circuit withstand capability for mains-side overcurrent protection with 32 A gL/gG	6 kA _{rms}
Temporary overvoltage (TOV) [L-N] (U_T)	335 V / 5 sec.
Temporary overvoltage (TOV) [L/N-PE] (U_T)	400 V / 5 sec.
Temporary overvoltage (TOV) [L+N-PE] (U_T)	1200 V + U_{CS} / 200 ms
TOV characteristics [L-N]	withstand
TOV characteristics [L/N-PE]	withstand
TOV characteristics [L+N-PE]	safe
Fault indication	acoustic signal on
Number of ports	1
Operating temperature range (T_U)	-25°C...+40°C
Terminal wires	1 mm ² , length: 120 mm
Enclosure material	thermoplastic, red, UL 94 V-2
Place of installation	indoor installation
Degree of protection of installed device	IP 20
Dimensions	30 x 50 x 11 mm



Basic circuit diagram DFL A



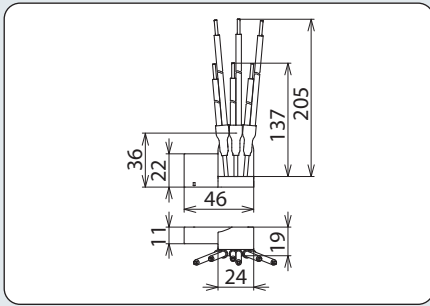
Dimension drawing DFL A

- Acoustic fault indication
- Compact design
- For use in flush-mounted systems, cable ducts and flush-type boxes

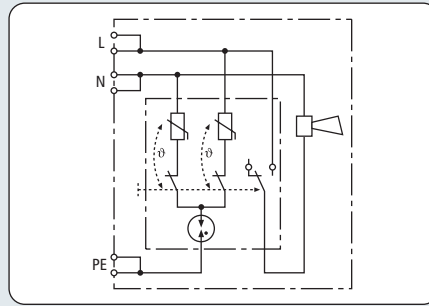
Surge arrester for use in all types of installation systems for terminal equipment; with test function

Type	DFL A 255
Part No.	924 389
SPD according to EN 61643-11	Type 3
SPD according to IEC 61643-1/-11	Class III
Nominal a.c. voltage (U_N)	230 V
Max. continuous operating a.c. voltage (U_C)	255 V
Nominal discharge current (8/20 μ s) (I_n)	3 kA
Total discharge current (8/20 μ s) [L+N-PE] (I_{total})	5 kA
Combined impulse (U_{OC})	6 kV
Combined impulse [L+N-PE] ($U_{OC total}$)	10 kV
Voltage protection level [L-N] (U_P)	≤ 1.25 kV
Voltage protection level [L/N-PE] (U_P)	≤ 1.5 kV
Response time [L-N] (t_A)	≤ 25 ns
Response time [L/N-PE] (t_A)	≤ 100 ns
Max. mains-side overcurrent protection	16 A gL/gG or B 16 A
Short-circuit withstand capability for mains-side overcurrent protection with 16 A gL/gG	6 kA _{rms}
Temporary overvoltage (TOV) [L-N] (U_T)	335 V / 5 sec.
Temporary overvoltage (TOV) [L/N-PE] (U_T)	400 V / 5 sec.
Temporary overvoltage (TOV) [L+N-PE] (U_T)	1200 V + U_{CS} / 200 ms
TOV characteristics [L-N]	withstand
TOV characteristics [L/N-PE]	withstand
TOV characteristics [L+N-PE]	safe
Fault indication	acoustic signal on
Number of ports	1
Operating temperature range (T_U)	-25°C...+40°C
Terminal wires	1 mm ² , length: 120 mm
Enclosure material	thermoplastic, red, UL 94 V-2
Place of installation	indoor installation
Degree of protection of installed device	IP 20
Dimensions	36 x 46 x 19 mm

Surge Arresters Type 3



Dimension drawing DFL D



Basic circuit diagram DFL D



Surge arrester for use in all types of installation systems for terminal equipment; allows for through-wiring; with test function

- Acoustic fault indication
- Compact design
- For use in flush-mounted systems, cable ducts and flush-type boxes

Type	DFL D 255
Part No.	924 395
SPD according to EN 61643-11	Type 3
SPD according to IEC 61643-1/-11	Class III
Nominal a.c. voltage (U_N)	230 V
Max. continuous operating a.c. voltage (U_C)	255 V
Nominal load current a.c. (I_N)	16 A
Nominal discharge current (8/20 μ s) (I_n)	3 kA
Total discharge current (8/20 μ s) [L+N-PE] (I_{total})	5 kA
Combined impulse (U_{OC})	6 kV
Combined impulse [L+N-PE] ($U_{OC total}$)	10 kV
Voltage protection level [L-N] (U_P)	≤ 1.25 kV
Voltage protection level [L/N-PE] (U_P)	≤ 1.5 kV
Response time [L-N] (t_A)	≤ 25 ns
Response time [L/N-PE] (t_A)	≤ 100 ns
Max. mains-side overcurrent protection	16 A gL/gG or B 16 A
Short-circuit withstand capability for mains-side overcurrent protection with 16 A gL/gG	6 kA _{rms}
Temporary overvoltage (TOV) [L-N] (U_T)	335 V / 5 sec.
Temporary overvoltage (TOV) [L/N-PE] (U_T)	400 V / 5 sec.
Temporary overvoltage (TOV) [L+N-PE] (U_T)	1200 V + U_{CS} / 200 ms
TOV characteristics [L-N]	withstand
TOV characteristics [L/N-PE]	withstand
TOV characteristics [L+N-PE]	safe
Fault indication	acoustic signal on
Number of ports	1
Operating temperature range (T_U)	-25°C...+40°C
Terminal wires	2.5 mm ² , length: 120 mm
Enclosure material	thermoplastic, red, UL 94 V-2
Place of installation	indoor installation
Degree of protection of installed device	IP 20
Dimensions	36 x 46 x 19 mm

Compact protection for terminal equipment

Type 3 Surge Arresters



For protecting electronic equipment against surges. For installation in the enclosure or directly in the device to be protected in conformity with the lightning protection zones concept at the boundaries from 1 – 2 and higher. German utility patent.

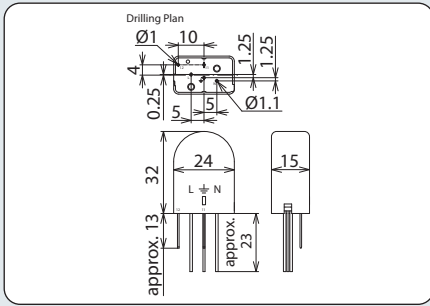
VC 280 2: Mains module with surge protection for installation in the terminal device to be protected

VC 280 2 surge arresters are small, but no less complex. The two-pole module incorporates a distinctive Y protective circuit, a monitoring and disconnection device as well as a floating remote signalling contact, thus ensuring compact dimensions and maximum safety. The surge arresters

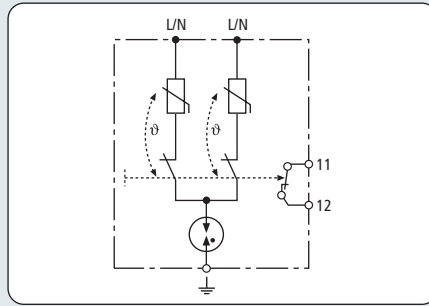
- Two-pole surge arrester with monitoring device and disconnector
- Complete surge protective circuit for devices with a.c. voltage power supply
- Enhanced safety due to distinctive Y protective circuit
- Floating remote signalling contact (break contact) with test option for fault indicator
- For installation onto printed circuit boards

even feature an integrated test option for the fault indicator. VC 280 2 reliably protects electronic equipment against overvoltage. The solder pins of VC 280 2 surge arresters allow to install them directly onto the PCBs of the device to be protected.

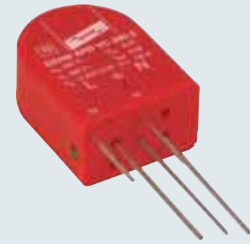
Type 3 Surge Arresters



Dimension drawing VC 280 2



Basic circuit diagram VC 280 2



- Complete surge protective circuit for devices with a.c. voltage power supply
- Floating remote signalling contact (break contact) with test option for fault indicator
- For installation onto printed circuit boards

Mains module with surge protection and floating break contact for installation into terminal equipment to be protected

Type	VC 280 2
Part No.	900 471
SPD according to EN 61643-11	Type 3
SPD according to IEC 61643-1/-11	Class III
Nominal a.c. voltage (U_N)	230 V
Max. continuous operating a.c. voltage (U_C)	280 V
Nominal discharge current (8/20 μ s) (I_n)	3 kA
Total discharge current (8/20 μ s) [L+N-PE] (I_{total})	5 kA
Combined impulse (U_{OC})	6 kV
Combined impulse [L+N-PE] ($U_{OC total}$)	10 kV
Voltage protection level [L-N] (U_p)	≤ 1.25 kV
Voltage protection level [L/N-PE] (U_p)	≤ 1.5 kV
Response time [L-N] (t_A)	≤ 25 ns
Response time [L/N-PE] (t_A)	≤ 100 ns
Max. mains-side overcurrent protection	16 A gL/gG or B 16 A
Short-circuit withstand capability for mains-side overcurrent protection with 16 A gL/gG	6 kA _{rms}
Temporary overvoltage (TOV) [L-N] (U_T)	335 V / 5 sec.
Temporary overvoltage (TOV) [L/N-PE] (U_T)	400 V / 5 sec.
Temporary overvoltage (TOV) [L+N-PE] (U_T)	1200 V + U_{CS} / 200 ms
TOV characteristics [L-N]	withstand
TOV characteristics [L/N-PE]	withstand
TOV characteristics [L+N-PE]	safe
Fault indication	remote signalling contact
Number of ports	1
Operating temperature range (U_T)	-25°C...+40°C
For mounting on	printed circuit boards
Enclosure material	thermoplastic, red, UL 94 V-2
Place of installation	indoor installation
Degree of protection	IP 20
Dimensions	32 x 24 x 15 mm
Type of remote signalling contact	break contact
a.c. switching capacity	250 V/0.5 A
d.c. switching capacity	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A

Surge Arresters Type 3



Adapters for protecting the power supply circuit of electronic equipment against transient overvoltages as well as high-frequency interference voltages (DEHNpro 230 F-Protector). For installation in conformity with the lightning protection zones concept at the boundaries from 1 – 2 and higher.

DEHNpro 230: Protection of terminal equipment

DEHNpro 230 F: Protection of terminal equipment with mains filter

The adapters with integrated surge protection of the DEHNpro family protect electronic consumers connected to final circuits from overvoltage. An interference suppressor filter with a balancing and unbalancing effect was integrated in the powerful surge protective circuit of DEHNpro 230 Protectors. This combination of surge protection and filter prevents a core saturation of the filter in case of energetic transients. The nominal current carrying capability of 16 A for DEHNpro 230 and 10 A for 230 F-Protector allows flexible use of these devices in final circuits. The distinctive Y circuit ensures protection even if the phase and neutral conductors in standard earthed socket outlets cannot be identified. The integrated disconnecter ensures reliability of devices and installations. The standard

- Surge protection with monitoring device and disconnecter
- Visual operating state (green) and fault indication (red)
- Mains filter (DEHNpro 230 F-Protector only)
- Enhanced safety due to distinctive Y protection circuit

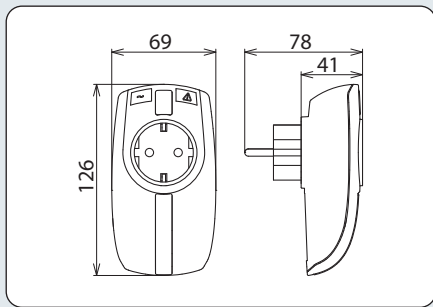
green and red LEDs indicate the operating state of the surge protective devices.

The modern design of the DEHNpro devices and the use of high-quality materials ensure safety in a sophisticated appearance. The DEHNpro devices thus ideally adapt to the installation environment. They create the right technical environment already at the socket outlet for connecting the latest communication and multimedia systems. The curved enclosure surfaces and the smooth surface structure ensure that the DEHNpro devices will not lose their original properties even after several years of application.

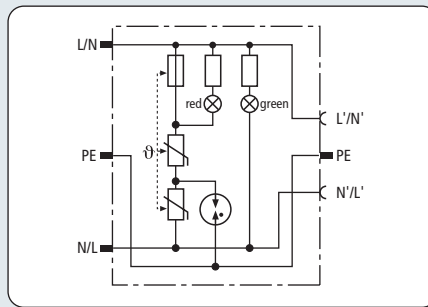
Note:

For further adapters with integrated surge protection for protecting the power supply circuit and the data interface of an electronic device, see pages 343 to 347.





Dimension drawing DPRO 230



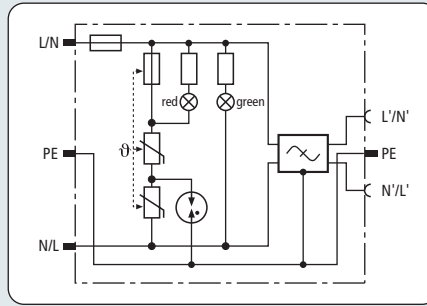
Basic circuit diagram DPRO 230



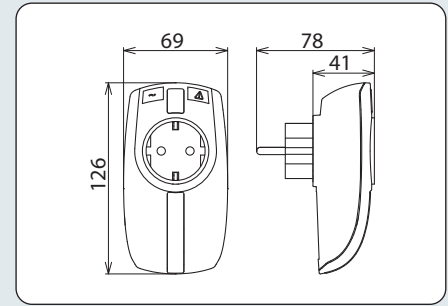
- Surge protection with monitoring device and disconnecter
- Visual operating state (green) and fault indication (red)
- Enhanced safety due to distinctive Y protective circuit

Adapter with integrated surge protection

Type	DPRO 230
Part No.	909 230
SPD according to EN 61643-11	Type 3
SPD according to IEC 61643-1/-11	Class III
Nominal a.c. voltage (U_N)	230 V
Max. continuous operating a.c. voltage (U_C)	255 V
Nominal load current a.c. (I_L)	16 A
Nominal discharge current (8/20 μ s) (I_n)	3 kA
Total discharge current (8/20 μ s) [L+N-PE] (I_{total})	5 kA
Combined impulse (U_{OC})	6 kV
Combined impulse [L+N-PE] ($U_{OC total}$)	10 kV
Voltage protection level [L-N] (U_p)	≤ 1.25 kV
Voltage protection level [L/N-PE] (U_p)	≤ 1.5 kV
Response time [L-N] (t_A)	≤ 25 ns
Response time [L/N-PE] (t_A)	≤ 100 ns
Max. mains-side overcurrent protection	16 A gL/gG or B 16 A
Short-circuit withstand capability for mains-side overcurrent protection with 16 A gL/gG	6 kA _{rms}
Temporary overvoltage (TOV) [L-N] (U_T)	335 V / 5 sec.
Temporary overvoltage (TOV) [L/N-PE] (U_T)	400 V / 5 sec.
Temporary overvoltage (TOV) [L+N-PE] (U_T)	1200 V + U_{CS} / 200 ms
TOV characteristics [L-N]	withstand
TOV characteristics [L/N-PE]	withstand
TOV characteristics [L+N-PE]	safe
Fault indication	red light
Operating state indication	green light
Number of ports	1
Operating temperature range (T_U)	-25°C...+40°C
For mounting on	plug-in systems with earth contact according to DIN 49440 / DIN 49441
Enclosure material	thermoplastic, pure white, UL 94 V-2
Place of installation	indoor installation
Degree of protection	IP 20
Dimensions	126 x 69 x 41 mm



Basic circuit diagram DPRO 230 F



Dimension drawing DPRO 230 F

- Surge protection with monitoring device and disconnecter
- Visual operating state (green) and fault indication (red)
- Enhanced safety due to distinctive Y protective circuit

Adapter with integrated surge protection and mains filter

Type	DPRO 230 F
Part No.	909 240
SPD according to EN 61643-11	Type 3
SPD according to IEC 61643-1/-11	Class III
Nominal a.c. voltage (U_N)	230 V
Max. continuous operating a.c. voltage (U_C)	255 V
Nominal load current a.c. (I_L)	10 A
Nominal discharge current (8/20 μ s) (I_n)	3 kA
Total discharge current (8/20 μ s) [L+N-PE] (I_{total})	5 kA
Combined impulse (U_{OC})	6 kV
Combined impulse [L+N-PE] ($U_{OC total}$)	10 kV
Voltage protection level [L-N] (U_p)	≤ 1.25 kV
Voltage protection level [L/N-PE] (U_p)	≤ 1.5 kV
Response time [L-N] (t_d)	≤ 25 ns
Response time [L/N-PE] (t_d)	≤ 100 ns
Max. mains-side overcurrent protection	16 A gL/gG or B 16 A
Short-circuit withstand capability for mains-side overcurrent protection with 16 A gL/gG	6 kA _{rms}
Temporary overvoltage (TOV) [L-N] (U_T)	335 V / 5 sec.
Temporary overvoltage (TOV) [L/N-PE] (U_T)	400 V / 5 sec.
Temporary overvoltage (TOV) [L+N-PE] (U_T)	1200 V + U_{CS} / 200 ms
TOV characteristics [L-N]	withstand
TOV characteristics [L/N-PE]	withstand
TOV characteristics [L+N-PE]	safe
Fault indication	red light
Operating state indication	green light
Number of Ports	2
Operating temperature range (T_U)	-25°C...+40°C
For mounting on	plug-in systems with earth contact according to DIN 49440 / DIN 49441
Enclosure material	thermoplastic, pure white, UL 94 V-2
Place of installation	indoor installation
Degree of protection	IP 20
Dimensions	126 x 69 x 41 mm
Mains filter	acc. to EN 60939-1
Attenuation for f = 1 MHz, balanced	≥ 40 dB
Attenuation for f = 1 MHz, unbalanced	≥ 30 dB

Surge Arresters Type 3

Type 3 Surge Arresters

- Surge protection with monitoring device and disconnecter
- Interference suppressor filter
- Enhanced safety due to distinctive Y protection circuit
- Mains switch with operating state indication (SFL PRO 6X only)
- 2 m connection cable for flexible use in a wide range of applications
- Visual operating state (green) and fault indicator (red)

Surge protective multiple socket outlet with filter



Multiple socket outlet for protecting the power supply circuit of electronic equipment against transient overvoltages as well as high-frequency interference voltages. For installation in conformity with the lightning protection zones concept at the boundaries from 1 – 2 and higher.

SFL PRO 6X: Surge protective multiple socket outlet with interference suppressor filter

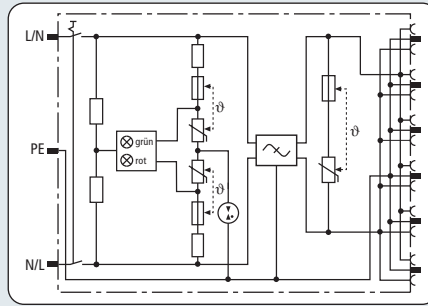
SFL PRO 6X 19": Surge protective multiple socket outlet with mains filter for 482.6 mm (19 inch) data cabinets



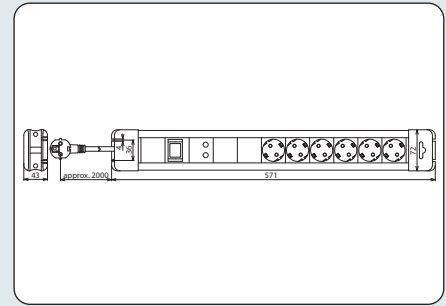
The SFL Protector surge arrester complements the wide range of Red/Line surge protective devices. The combination of surge protection and mains filter makes the six-way socket outlet a powerful device for protecting electronic consumers in final electrical circuits. The harmonised surge protection and filter functions complement one another and prevent a core saturation of the filter in case of energetic transients. The integrated mains filter was optimised for protection against balanced and unbalanced high-frequency interferences. With a nominal current carrying capability of 16 A, the SFL Protector can be flexibly used in final circuits. The distinctive Y protection circuit ensures protection even if the phase and neutral conductors in standard earthed socket outlets cannot be identified. The standard green and red LEDs indicate the operating state of the surge protective device.

The SFL PRO 6X 19" has been specifically developed for use in network cabinets and therefore provides optimal protection of terminal equipment in this critical field of application.

NEW



Basic circuit diagram SFL PRO 6X



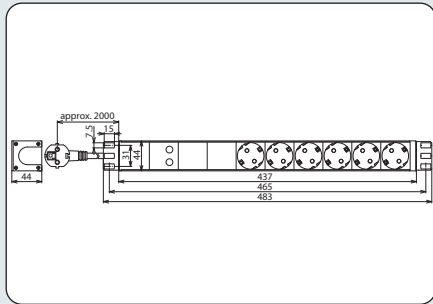
Dimension drawing SFL PRO 6X

- Surge protection with monitoring device and disconnector
- Interference suppressor filter
- Visual operating state (green) and fault indication (red)

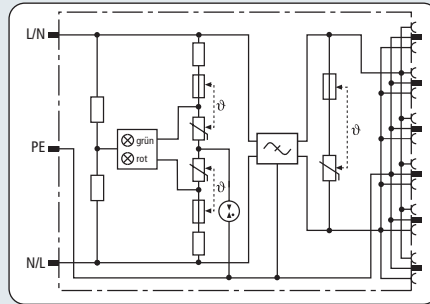
Surge protective multiple socket outlet with mains filter

Type	SFL PRO 6X
Part No.	909 250
SPD according to EN 61643-11	Type 3
SPD according to 61643-1/-11	Class III
Nominal a.c. voltage (U_N)	230 V
Max. continuous operating a.c. voltage (U_C)	255 V
Nominal load current a.c. (I_L)	16 A
Nominal discharge current (8/20 μ s) (I_n)	3 kA
Total discharge current (8/20 μ s) [L+N-PE] (I_{total})	5 kA
Combined impulse (U_{OC})	6 kV
Combined impulse [L+N-PE] ($U_{OC total}$)	10 kV
Voltage protection level (U_p)	≤ 1.5 kV
Response time [L-N] (t_A)	≤ 25 ns
Response time [L/N-PE] (t_A)	≤ 100 ns
Max. mains-side overcurrent protection	16 A gL/gG or B 16 A
Short-circuit withstand capability for mains-side overcurrent protection with 16 A gL/gG	1.5 kA _{rms}
Temporary overvoltage (TOV) [L-N] (U_T)	335 V / 5 sec.
Temporary overvoltage (TOV) [L/N-PE] (U_T)	400 V / 5 sec.
Temporary overvoltage (TOV) [L+N-PE] (U_T)	1200 V + U_{CS} / 200 ms
TOV characteristics [L-N]	withstand
TOV characteristics [L/N-PE]	withstand
TOV characteristics [L+N-PE]	safe
Fault indication	red light
Operating state indication	green light
Number of ports	2
Operating temperature range (T_U)	-20°C...+40°C
Connecting cable	approx. 2000 mm
Number of socket outlets	6
For mounting on	plug-in systems with earth contact according to DIN 49440 / DIN 49441
Enclosure material	thermoplastic, black/silver, UL 94 V-1
Place of installation	indoor installation
Degree of protection	IP 20
Dimensions	571 x 72 x 43 mm
Mains filter	acc. to EN 60939-1
Attenuation for f = 1 MHz, balanced	≥ 32 dB
Attenuation for f = 1 MHz, unbalanced	≥ 30 dB

Surge Arresters Type 3



Dimension drawing SFL PRO 6X 19"



Basic circuit diagram SFL PRO 6X 19"



- Surge protection with monitoring device and disconnecter
- Interference suppressor filter
- Visual operating state (green) and fault indication (red)

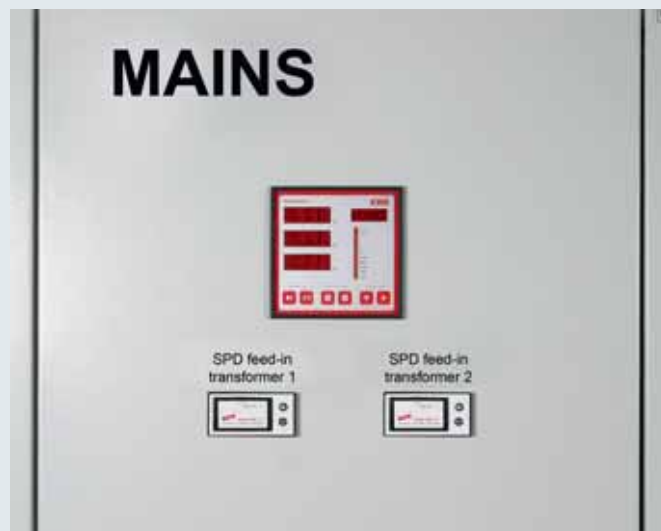
Surge protective multiple socket outlet with mains filter for 482.6 mm (19 inches) data cabinets

Type	SFL PRO 6X 19"
Part No.	909 251
SPD according to EN 61643-11	Type 3
SPD according to 61643-1/-11	Class III
Nominal a.c. voltage (U_N)	230 V
Max. continuous operating a.c. voltage (U_C)	255 V
Nominal load current a.c. (I_L)	16 A
Nominal discharge current (8/20 μ s) (I_n)	3 kA
Total discharge current (8/20 μ s) [L+N-PE] (I_{total})	5 kA
Combined impulse (U_{OC})	6 kV
Combined impulse [L+N-PE] ($U_{OC total}$)	10 kV
Voltage protection level (U_P)	≤ 1.5 kV
Response time [L-N] (t_A)	≤ 25 ns
Response time [L/N-PE] (t_A)	≤ 100 ns
Max. mains-side overcurrent protection	16 A gL/gG or B 16 A
Short-circuit withstand capability for mains-side overcurrent protection with 16 A gL/gG	1.5 kA _{rms}
Temporary overvoltage (TOV) [L-N] (U_T)	335 V / 5 sec.
Temporary overvoltage (TOV) [L/N-PE] (U_T)	400 V / 5 sec.
Temporary overvoltage (TOV) [L+N-PE] (U_T)	1200 V + U_{CS} / 200 ms
TOV characteristics [L-N]	withstand
TOV characteristics [L/N-PE]	withstand
TOV characteristics [L+N-PE]	safe
Fault indication	red light
Operating state indication	green light
Number of ports	2
Operating temperature range (T_U)	-20°C...+40°C
Connecting cable	approx. 2000 mm
Number of socket outlets	6
For mounting on	plug-in systems with earth contact according to DIN 49440 / DIN 49441
Enclosure material	anodised aluminium profile, silver
Place of installation	indoor installation
Degree of protection	IP 20
Dimensions	483 x 44 x 44 mm
Mains filter	according to EN 60939-1
Attenuation for f = 1 MHz, balanced	≥ 32 dB
Attenuation for f = 1 MHz, unbalanced	≥ 30 dB

Surge Arresters Type 3

General Accessory

- Visual remote indicator for surge protective devices (SPDs)
- Easy installation
- For installation into switchgear cabinet doors
- Low energy consumption due to current-saving LEDs
- Supplied by two AA batteries
- Easy battery replacement without opening the switchgear cabinet door
- Wire breakage detection by connecting the break contact of the remote signalling contact



Visual indicator for surge protective devices for installation in switchgear cabinets

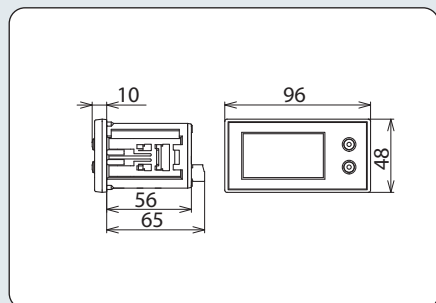
DEHNpanel provides remote indication of the status of surge protective devices with remote signalling contact installed in a switchgear installation.

The status of the surge protective device is clearly indicated by means of high-luminosity LEDs even under difficult lighting conditions. DEHNpanel can be easily integrated into existing switchgear installations, allowing

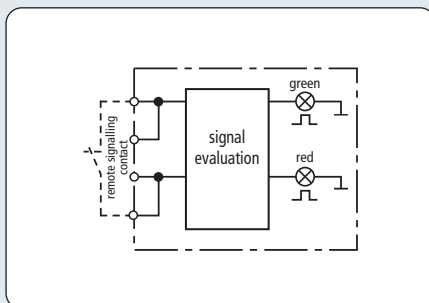
the operator of the installation to easily test the surge protective devices installed without opening the switchgear cabinet.

The current-saving LEDs ensure a long battery service life of several years.

Batteries can be replaced by ordinary persons since the switchgear cabinet does not have to be opened.



Dimension drawing DPAN L



Basic circuit diagram DPAN L



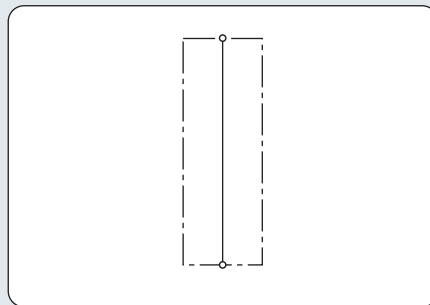
Type	DPAN L
Part No.	910 200
Voltage supply	2x 1.5 V AA batteries
Operating state/fault indication	green LED (flashing) / red LED (flashing)
Flashing frequency	0.1 s on / 1.3 s off
Enclosure material (front / rear side)	noryl
Degree of protection	IP 40 / IP 20
Operating temperature range T _U	-25°C...+60°C
Mounting dimensions	92 x 45 mm
Dimensions	96 x 48 x 75 mm

Accessories

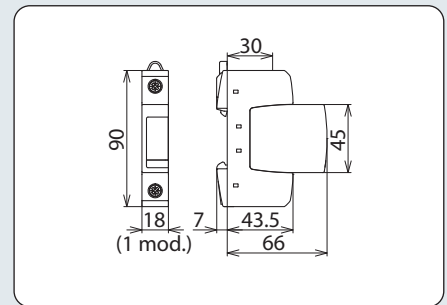


- Allows to change the wiring level
- Supports lightning-current-conform installation of arrester combinations

Uniform wiring level from the top by means of the DK 25 feed-through terminal



Basic circuit diagram DK 25



Dimension drawing DK 25

Feed-through terminal for busbar wiring

Type	DK 25
Part No.	952 699
Nominal a.c./d.c. voltage (U_N)	500 V
Nominal load current a.c. (I_N)	100 A
Lightning impulse current (10/350 μ s)	100 kA
Rated insulation voltage (U_i)	630 V
Rated impulse withstand voltage (U_{imp})	6 kV
Operating temperature range (T_U)	-40°C...+80°C
Cross-sectional area (min.)	1.5 mm ² solid/flexible
Cross-sectional area (max.)	25 mm ² stranded/16 mm ² flexible
For mounting on	35 mm DIN rails according to EN 60715
Enclosure material	thermoplastic, red, UL 94 V-0
Degree of protection	IP 20
Capacity	1 module, DIN 43880

- Allows an EMC-optimised feed-through wiring according to IEC 60364-5-53

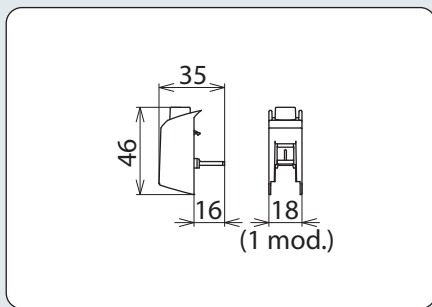


EMC-optimized feed-through wiring of lightning current and surge arresters according to IEC 60364-5-53 by means of STAK 2X16

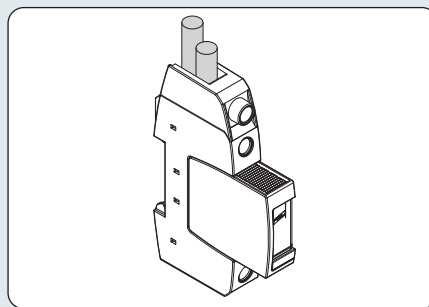


EMC-optimized series connection of string conductors in a PV generator junction box by means of STAK 25

STAK 25 Pin-shaped Terminal



Dimension drawing STAK 25



Use of STAK 25 with DEHNguard S



NEW

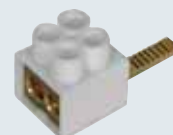
Pin-shaped terminal for EMC-optimized feed-through wiring of lightning current and surge arresters according to IEC 60364-5-53

- Allows series connection (connection of two conductors) of surge protective devices up to 25 mm²

Type	STAK 25
Part No.	952 589
Nominal a.c./d.c. voltage (U _N)	600 V
Max. PV voltage (U _{CPV}) when used with DEHNguard M YPV SCI ..	1200 V
Nominal load current a.c. (I _I)	100 A
Lightning impulse current (10/350 μs)	25 kA
Discharge current (8/20 μs)	50 kA
Rated insulation voltage (U _i)	630 V
Rated impulse withstand voltage (U _{imp})	6 kV
Operating temperature range (T _U)	-40°C...+80°C
Cross-sectional area (min.)	1.5 mm ² solid/flexible
Cross-sectional area (max.)	25 mm ² stranded/16 mm ² flexible
Type of connection	front
Suitable for	DEHNguard S, DEHNguard M, DEHNshield, DK 25 feed-through terminal

STAK 2X16 Pin-shaped Terminal

Pin-shaped terminal for EMC-optimized feed-through wiring of lightning current and surge arresters according to IEC 60364-5-53



Type	STAK 2X16
Part No.	900 589
Cross-sectional area (min.)	2x 1.5 mm ²
Cross-sectional area (max.)	2x max. 16 mm ²
Type of connection	front (double terminal)

- Allows to connect cross-sections that are smaller than the specified minimum terminal cross-section of the surge protective device

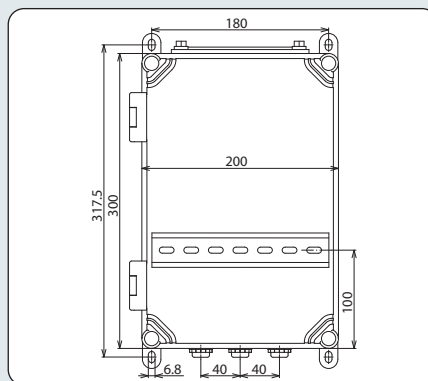


- Lightning-impulse-current-tested arrester enclosure for flush mounting

Application example:
Modular DEHNventil M TNS installed in an IGA 10 V2 IP54 insulating enclosure

Insulating Enclosure

IGA 10 V2 IP54

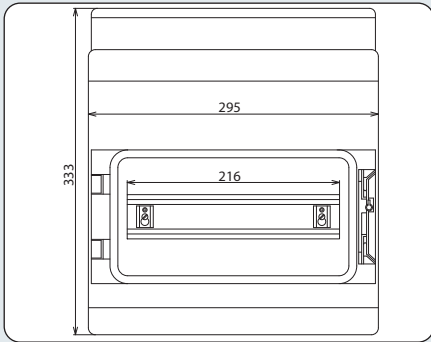


Dimension drawing IGA 10 V2 IP54

- Lightning-impulse-current-tested arrester enclosure for flush mounting

Insulating enclosure for max. ten modules; with membrane flange for five EPDM cables (Ø7-30 mm) and three mounted M20 membrane openings with lock nut; ideally suited for through-wiring

Type	IGA 10 V2 IP54
Part No.	902 315
Degree of protection	IP 54
Type	lightning-current-tested
Cover	transparent
Colour of enclosure	grey
Number of cable entries	1 x for cables Ø7...10 mm; 2x for cables Ø10...14 mm or Ø15...30 mm each; 3 x for cables Ø8...13 mm
Capacity	10 modules, DIN 43880
Dimensions (W x H x D)	200 x 300 x 132 mm
Cover	sealable



Dimension drawing IGA 12 IP54



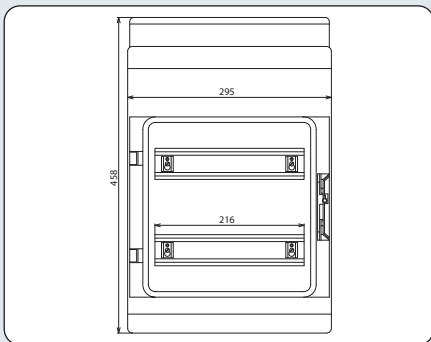
Integrated plug-in terminal technology for PE and N conductors



- Easy visual inspection of the installed arresters through transparent door
- With integrated pluggable three-pole PE and twelve-pole N terminal
- With cable entry cover
- With blanking strips for unused DIN rail openings and labels

Insulating enclosure with a capacity of max. 12 modules, for non-exhausting arresters

Type	IGA 12 IP54
Part No.	902 471
Degree of protection	IP 54
Cover	transparent door
Colour of enclosure	grey, RAL 7035
Cable entry	integrated elastic seal membrane
PE/N quantity x cross-section	3 x 25 mm ² , 12 x 4 mm ² , Cu
Capacity	12 modules, DIN 43880
Dimensions (W x H x D)	295 x 333 x 129 mm



Dimension drawing IGA 24 IP54



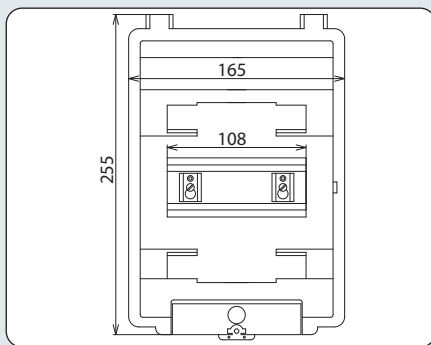
Integrated plug-in terminal technology for PE and N conductors



- Easy visual inspection of the installed arresters through transparent door
- With integrated pluggable six-pole PE and 24-pole N terminal
- With cable entry cover
- With blanking strips for unused DIN rail openings and labels

Insulating enclosure with a capacity of max. 2 x 12 modules, for non-exhausting arresters

Type	IGA 24 IP54
Part No.	902 472
Degree of protection	IP 54
Cover	transparent door
Colour of enclosure	grey, RAL 7035
Cable entry	integrated elastic seal membrane
PE/N quantity x cross-section	6 x 25 mm ² , 24 x 4 mm ² , Cu
Capacity	24 (2x 12) modules, DIN 43880
Dimensions (W x H x D)	295 x 458 x 129 mm



Dimension drawing IGA 6 IP54

- Lightning-impulse-current-tested arrester enclosure for flush mounting

Enclosure for non-exhausting arresters with a capacity of max. six modules

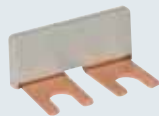
Type	IGA 6 IP54
Part No.	902 485
Degree of protection	IP 54
Cover	transparent
Colour of enclosure	grey
Number of cable entries	2 plug-in glands EST 21 for cables Ø9 ... 21 mm
Capacity	6 modules, DIN 43880
Dimensions (W x H x D)	165 x 255 x 115 mm
Cover	sealable

General Accessory

- Allows compact connection of arresters with each other and with other DIN rail mounted devices

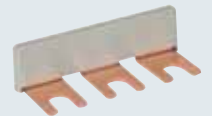


MVS single-phase, two-pole



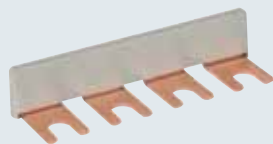
Type	MVS 1 2
Part No.	900 617
Type	single-phase
Number of contact studs	2
Max. installation length	2 module(s)
Nominal cross-section	16 mm ²

MVS single-phase, three-pole



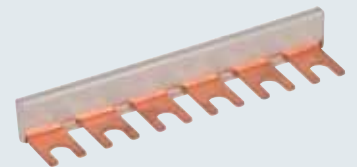
Type	MVS 1 3
Part No.	900 615
Type	single-phase
Number of contact studs	3
Max. installation length	3 module(s)
Nominal cross-section	16 mm ²

MVS single-phase, four-pole



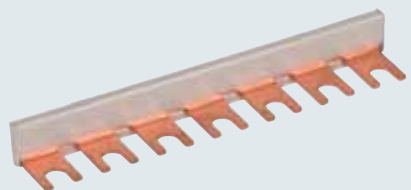
Type	MVS 1 4
Part No.	900 610
Type	single-phase
Number of contact studs	4
Max. installation length	4 module(s)
Nominal cross-section	16 mm ²

MVS single-phase, six-pole



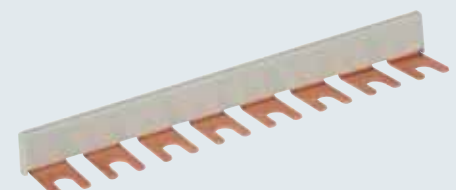
Type	MVS 1 6
Part No.	900 815
Type	single-phase
Number of contact studs	6
Max. installation length	6 module(s)
Nominal cross-section	16 mm ²

MVS single-phase, seven-pole



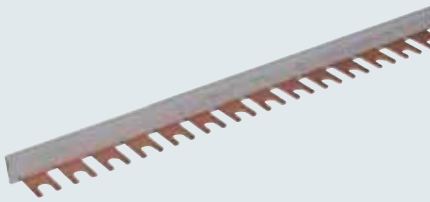
Type	MVS 1 7
Part No.	900 848
Type	single-phase
Number of contact studs	7
Max. installation length	7 module(s)
Nominal cross-section	16 mm ²

MVS single-phase, eight-pole



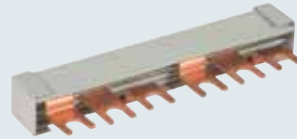
Type	MVS 1 8
Part No.	900 611
Type	single-phase
Number of contact studs	8
Max. installation length	8 module(s)
Nominal cross-section	16 mm ²

MVS single-phase, 57-pole



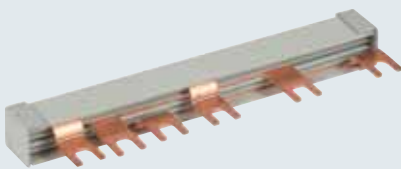
Type	MVS 1 57
Part No.	900 612
Type	single-phase
Number of contact studs	57
Max. installation length	57 module(s)
Nominal cross-section	16 mm ²

MVS three-phase, six-pole, 6 Modules



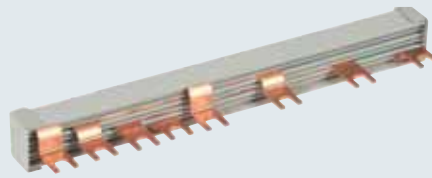
Type	MVS 3 6
Part No.	900 595
Type	three-phase
Number of contact studs	6
Max. installation length	6 module(s)
Nominal cross-section	16 mm ²

MVS three-phase, six-pole, 8 Modules



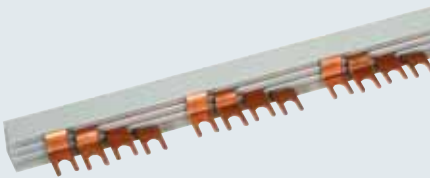
Type	MVS 3 6 8
Part No.	900 813
Type	three-phase
Number of contact studs	6
Max. installation length	8 module(s)
Nominal cross-section	16 mm ²

MVS four-phase, eight-pole



Type	MVS 4 8 11
Part No.	900 814
Type	four-phase
Number of contact studs	8
Max. installation length	11 module(s)
Nominal cross-section	16 mm ²

MVS four-phase, 56-pole



Type	MVS 4 56
Part No.	900 614
Type	four-phase
Number of contact studs	56
Max. installation length	56 module(s)
Nominal cross-section	16 mm ²

EB DG single-phase, three-pole



Type	EB DG 1000 1 3
Part No.	900 411
Type	single-phase
Number of contact studs	3
Dimensions	34 x 112 x 3 mm
Material	copper and tin-plated brass
Terminal	up to 25 mm ²

Earthing Clip, four-pole



Type	EB 1 4 9
Part No.	900 417
Type	single-phase
Number of contact studs	4
Dimensions	34 x 148 x 3 mm
Material	copper and tin-plated brass
Terminal	up to 25 mm ²

Surge protection for INFORMATION TECHNOLOGY SYSTEMS

SPDs for installations and equipment



Yellow / Line

Old / discontinued products		Alternatives	
Part No.	Type	Part No.	Type
Pluggable SPDs for DIN rail mounting			
BLITZDUCTOR CT		BLITZDUCTOR XT	
919 506	BCT BAS	920 300	BXT BAS
919 310	BCT MLC B 110	920 310	BXT ML4 B 180
919 320	BCT MLC BE 5	920 220 920 320	BXT ML2 BE S 5 BXT ML4 BE 5
919 321	BCT MLC BE 12	920 222 920 322	BXT ML2 BE S 12 BXT ML4 BE 12
919 322	BCT MLC BE 15	920 222 920 322	BXT ML2 BE S 12 BXT ML4 BE 12
919 323	BCT MLC BE 24	920 224 920 324	BXT ML2 BE S 24 BXT ML4 BE 24
919 324	BCT MLC BE 30	920 224 920 324	BXT ML2 BE S 24 BXT ML4 BE 24
919 325	BCT MLC BE 48	920 225 920 325	BXT ML2 BE S 48 BXT ML4 BE 48
919 326	BCT MLC BE 60	920 326	BXT ML4 BE 60
919 327	BCT MLC BE 110	920 327	BXT ML4 BE 180
919 360	BCT MLC BE C 5	—	—
919 361	BCT MLC BE C 12	920 362	BXT ML4 BE C 12
919 362	BCT MLC BE C 24	920 364	BXT ML4 BE C 24
919 363	BCT MLC BE C 30	920 364	BXT ML4 BE C 24
919 340	BCT MLC BD 5	920 240 920 340	BXT ML2 BD S 5 BXT ML4 BD 5
919 341	BCT MLC BD 12	920 242 920 342	BXT ML2 BD S 12 BXT ML4 BD 12
919 342	BCT MLC BD 15	920 242 920 342	BXT ML2 BD S 12 BXT ML4 BD 12
919 343	BCT MLC BD 24	920 244 920 344	BXT ML2 BD S 24 BXT ML4 BD 24
919 344	BCT MLC BD 30	920 244 920 344	BXT ML2 BD S 24 BXT ML4 BD 24
919 345	BCT MLC BD 48	920 245 920 345	BXT ML2 BD S 48 BXT ML4 BD 48
919 346	BCT MLC BD 60	920 346	BXT ML4 BD 60
919 347	BCT MLC BD 110	920 247 920 347	BXT ML2 BD 180 BXT ML4 BD 180
919 349	BCT MLC BD 250	—	—
919 370	BCT MLC BD HF 5	920 270 920 370	BXT ML2 BE HFS 5 BXT ML4 BE HF 5
919 371	BCT MLC BD HFD 5	920 271 920 371	BXT ML2 BD HFS 5 BXT ML4 BD HF 5
919 375	BCT MLC BD HFD 24	920 375	BXT ML4 BD HF 24
919 520	BCT MOD ME 5	920 220 920 320	BXT ML2 BE S 5 BXT ML4 BE 5
919 521	BCT MOD ME 12	920 222 920 322	BXT ML2 BE S 12 BXT ML4 BE 12

Old / discontinued products		Alternatives	
Part No.	Type	Part No.	Type
Pluggable SPDs for DIN rail mounting			
BLITZDUCTOR CT		BLITZDUCTOR XT	
919 522	BCT MOD ME 15	920 222 920 322	BXT ML2 BE S 12 BXT ML4 BE 12
919 523	BCT MOD ME 24	920 224 920 324	BXT ML2 BE S 24 BXT ML4 BE 24
919 524	BCT MOD ME 30	920 224 920 324	BXT ML2 BE S 24 BXT ML4 BE 24
919 525	BCT MOD ME 48	920 225 920 325	BXT ML2 BE S 48 BXT ML4 BE 48
919 526	BCT MOD ME 60	920 326	BXT ML4 BE 60
919 527	BCT MOD ME 110	920 327	BXT ML4 BE 180
919 560	BCT MOD ME C 5	—	—
919 561	BCT MOD ME C 12	920 362	BXT ML4 BE C 12
919 562	BCT MOD ME C 24	920 364	BXT ML4 BE C 24
919 563	BCT MOD ME C 30	920 364	BXT ML4 BE C 24
919 540	BCT MOD MD 5	920 240 920 340	BXT ML2 BD S 5 BXT ML4 BD 5
919 541	BCT MOD MD 12	920 242 920 342	BXT ML2 BD S 12 BXT ML4 BD 12
919 542	BCT MOD MD 15	920 242 920 342	BXT ML2 BD S 12 BXT ML4 BD 12
919 543	BCT MOD MD 24	920 244 920 344	BXT ML2 BD S 24 BXT ML4 BD 24
919 544	BCT MOD MD 30	920 244 920 344	BXT ML2 BD S 24 BXT ML4 BD 24
919 545	BCT MOD MD 48	920 245 920 345	BXT ML2 BD S 48 BXT ML4 BD 48
919 546	BCT MOD MD 60	920 346	BXT ML4 BD 60
919 547	BCT MOD MD 110	920 247 920 347	BXT ML2 BD 180 BXT ML4 BD 180
919 549	BCT MOD MD 250	—	—
919 570	BCT MOD MD HF 5	920 270 920 370	BXT ML2 BE HFS 5 BXT ML4 BE HF 5
919 571	BCT MOD MD HFD 5	920 271 920 371	BXT ML2 BD HFS 5 BXT ML4 BD HF 5
919 575	BCT MOD MD HFD 24	920 375	BXT ML4 BD HF 24
919 552	BCT MOD MD TC N	—	—
919 589	BCT MOD MY 250	920 389	BXT ML4 MY 250
919 502	GDT 90	—	—
919 504	BCT MOD PTS	920 309	BXT M4 T
919 505	EKS BCT	920 308	BXT M4 E
919 508	EFK BCT	920 395	SAK BXT LR

Accessories for compact SPDs for DIN rail mounting			
919 885	KB 5 DCO RK	—	—
919 888	KB 8 DCO RK	—	—

SPDs for LSA technology			
907 209	GDT 230 G3 FS	907 217	GDT 230 G3 FSD
907 215	DPL 10 G3 110 FS	907 216	DPL 10 G3 110 FSD

SPDs for data cabinets 482.6 mm (19 inch)			
929 067 (1x)	NET PRO ISDN	929 100 (8x)	DPA M CAT6 RJ45S 48
929 068 (1x)	NET PRO ISDN LSA	929 100 (8x)	DPA M CAT6 RJ45S 48
929 069	NET PRO TC 1	929 071	NET PRO TC 2
929 070	NET PRO TC 1 LSA	929 072	NET PRO TC 2 LSA

SPDs for RJ connection			
929 027	DLI TC 1 I	929 028	DLI TC 2 I
929 029	DLI TC DK	—	—
929 080	DLI TC ECO	929 028	DLI TC 2 I

SPDs for coaxial connection			
929 041	DGA G 1.6 5.6	929 040	DGA F 1.6 5.6
929 058	DGA G N 3	929 044	DGA G N

SPDs for terminal connection			
924 271	DSM TC 1 SK	924 272	DSM TC 2 SK
924 273	DSM TC DK SK	—	—
925 013	AS IBAS YE	—	—

Accessories for screwable SPDs			
929 981	KV S M20 MS 13	—	—
929 985	KV M20 MS 8	—	—

SPDs for potentially explosive atmospheres			
919 507	BCT BAS EX	920 301	BXT BAS EX
919 580	BCT MOD MD EX 24	920 381	BXT ML4 BD EX 24
919 581	BCT MOD MD EX 30	920 381	BXT ML4 BD EX 24
919 583	BCT MOD MD HFD EX 6	920 538	BXT ML2 BD HF EX 6

Easy choice according to Interface / Signal 158

Pluggable SPDs for DIN rail mounting



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Compact SPDs for DIN rail mounting



211



SPDs for LSA technology



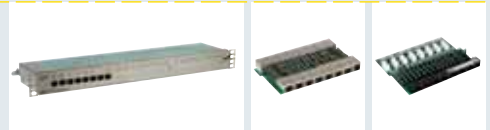
231



SPDs for data cabinets 482.6 mm (19 inch)



249



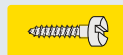
SPDs for RJ connection



255



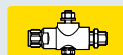
Surface-mounted SPDs



263



SPDs for coaxial connection



271



SPDs for D-Sub connection



285



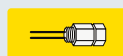
SPDs for terminal connection



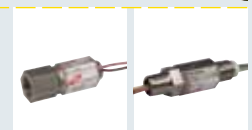
293



Screwable SPDs



300



SPDs for use in potentially explosive atmospheres



305



Accessories for terminal block systems



333



Combined adapters

343



Measuring and test devices

367



Bus systems and measuring and control equipment

Page 158 – 167

Telecommunications, telephony

















































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






























Data networks

































































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Antenna systems, broadband systems,
transmitting and receiving systems, video systems































































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













































Bus systems and measuring and control equipment									
Interface/Signal	For mounting on	Ex	Connection system	Protected lines	LifeCheck	SPD class TYPE	SPD	Part No.	Page
0-20 mA, 4-20 mA (also with HART)			screw terminals	4	●	1		920 324 + 920 300	190+188
			screw terminals	2	●	1		920 224 + 920 300	199+188
			spring terminals	2		2		919 921	212
			spring terminals	2		3		919 988	217
			wires / terminals	2		2		929 921	302
4-20 mA (also with HART) acc. to NAMUR recommen- dation NE 21 or acc. to EN 61000-4-5, open-circuit voltage 1 kV A-PG			screw terminals	4	●	1		920 344 + 920 300	191+188
			screw terminals	2	●	1		920 244 + 920 300	198+188
			spring terminals	2		2		919 941	213
			screw terminals	4		2		918 407	222
			wires / terminals	2		2		929 941	301
3/4 conductor measurement			screw terminals	4	●	1		920 350 + 920 300	192+188
			screw terminals	4	●	1		920 354 + 920 300	192+188
ADVANT			screw terminals	4	●	1		920 370 + 920 300	194+188
			screw terminals	2	●	1		920 270 + 920 300	200+188
			screw terminals	5		2		918 401	223
			spring terminals	2		2		919 970	216
Binary signals			screw terminals	4	●	1		920 320 – 327 + 920 300	190+188
			screw terminals	2	●	1		920 220 – 225 + 920 300	199+188
			spring terminals	2		2		919 920 – 923	212
			spring terminals	2		3		919 987 – 990	217
			LSA	20		1		907 401 + 907 498 + 907 422	234
Bitbus			screw terminals	4	●	1		920 370 + 920 300	194
			screw terminals	2	●	1		920 270 + 920 300	200
			spring terminals	2		2		919 970	216






























































Bus systems and measuring and control equipment									
Interface/Signal	For mounting on	Ex	Connection system	Protected lines	LifeCheck 	SPD class TYPE	SPD	Part No.	Page
BLN (Building Level Network)			screw terminals	4	●	1		920 342 + 920 300	191+188
			screw terminals	2	●	1		920 242 + 920 300	198+188
			screw terminals	4	●	1		920 345 + 920 300	191+188
			screw terminals	2	●	1		920 245 + 920 300	198+188
CAN bus (data line only)			screw terminals	4	●	1		920 371 + 920 300	195+188
			screw terminals	2	●	1		920 271 + 920 300	201+188
			spring terminals	2		2		919 970	216
			LSA	20		1		907 401 + 907 498 + 907 465	234
C bus (Honeywell)			screw terminals	4	●	1		920 371 + 920 300	195+188
			screw terminals	2	●	1		920 271 + 920 300	201+188
			spring terminals	2		2		919 970	216
CCP systems			Sensor circuit screw terminals	2		1		918 421 / 405	228/230
			Anode circuit screw terminals	2		1		918 420 / 404	227/229
Control Net			BNC	1		2		929 010	272
			BNC	1		2		909 710 / 711	273
Data Highway Plus			screw terminals	4	●	1		920 342 + 920 300	191+188
			screw terminals	2	●	1		920 242 + 920 300	198+188
			spring terminals	2		2		919 940	213
d.c. power supply up to 60 V d.c.			screw terminals	2		3		918 402	224
			screw terminals	2		1		918 408	225
			screw terminals	2		1		918 409	225
Delta Net Peer Bus			screw terminals	4	●	1		920 370 + 920 300	194+188
			screw terminals	2	●	1		920 270 + 920 300	200+188
			spring terminals	2		2		919 970	216
Device Net (data line only)			screw terminals	4	●	1		920 371 + 920 300	195+188
			screw terminals	2	●	1		920 271 + 920 300	201+188
			spring terminals	2		2		919 970	216














































































Bus systems and measuring and control equipment									
Interface/Signal	For mounting on	Ex	Connection system	Protected lines	LifeCheck	SPD class TYPE	SPD	Part No.	Page
Dupline 			screw terminals	4	●	1		920 243 + 920 300	203+188
E bus (Honeywell) 			screw terminals	4	●	1		920 345 + 920 300	191+188
			screw terminals	2	●	1		920 245 + 920 300	198+188
EIB			screw terminals	4	●	1		920 310 + 920 300	189+188
			screw terminals	2	●	1		920 211 + 920 300	202+188
			wires	2		2		925 001	297
			LSA	20		1		907 401	234
Electroacoustic system			screw terminals	4	●	1		920 347 + 920 300	191+188
			spring terminals	2		2		919 943	215
			LSA	20		1		907 401 + 907 498 + 907 445	234
ET 200			screw terminals	4	●	1		920 370 + 920 300	194+188
			screw terminals	2	●	1		920 270 + 920 300	200+188
			spring terminals	2		2		919 970	216
Ex(d) circuits 4-20 mA, NAMUR, HART, PROFIBUS-PA, FF			wires	2		2		929 962 / 964	313
			wires	4		2		929 950 / 951	318
			wires	4		2		929 952 / 953	319
Ex (i) circuits			screw terminals	4	●	2		920 381 + 920 301	323+322
			screw terminals	4	●	2		920 538 + 920 301	326+322
			screw terminals	2	●	2		920 280 + 920 301	324+322
			spring terminals	2		2		919 960	332
			wires / terminals	2		2		929 960	307
			wires	2		2		929 961 / 963	310
			wires	4		2		929 950 / 951	318
			wires	4		2		929 952 / 953	319
			screw terminals	4	●	2		989 408	330

Bus systems and measuring and control equipment






























































Interface/Signal	For mounting on	Ex	Connection system	Protected lines	LifeCheck	SPD class TYPE	SPD	Part No.	Page
			screw terminals	4	●	1		920 344 + 920 300	191+188
			screw terminals	2	●	1		920 244 + 920 300	198+188
			spring terminals	2		2		919 941	213
			wires / terminals	2		2		929 941	301
			LSA	20		1		907 401 + 907 498 + 907 442	234
Fieldbus Foundation Ex (i)			screw terminals	4	●	2		920 381 + 920 301	323+322
			screw terminals	4	●	2		920 538 + 920 301	326+322
			screw terminals	2	●	2		920 280 + 920 301	324+322
			spring terminals	2		2		919 960	332
			wires / terminals	2		2		929 960	307
			wires	2		2		929 961 / 963	310
			wires	2		2		929 971	314
			wires	4		2		929 950 / 951	318
			screw terminals	4	●	2		989 408	330
FIP / FIPWAY			screw terminals	4	●	1		920 344 + 920 300	191+188
			screw terminals	2	●	1		920 244 + 920 300	198+188
FIP I/O			screw terminals	4	●	1		920 370 + 920 300	194+188
			screw terminals	2	●	1		920 270 + 920 300	200+188
FSK			screw terminals	4	●	1		920 371 + 920 300	195+188
			screw terminals	2	●	1		920 271 + 920 300	201+188
			spring terminals	2		2		919 970	216
Genius I/O Bus			screw terminals	4	●	1		920 342 + 920 300	191+188
			screw terminals	2	●	1		920 242 + 920 300	198
IEC Bus (RS485)			screw terminals	4	●	1		920 371 + 920 300	195+188
			screw terminals	2	●	1		920 271 + 920 300	201+188
			spring terminals	2		2		919 970	216























































Bus systems and measuring and control equipment										
Interface/Signal	For mounting on	Ex	Connection system	Protected lines	LifeCheck	SPD class TYPE	SPD	Part No.	Page	
Industrial Ethernet			LSA	20		1		907 401 + 907 498 + 907 470	234	
			RJ45	8		2		929 100 / 110	256	
			RJ45	8		2		929 121	257	
			RJ45, LSA / RJ45	8 x 8		3		929 035 / 036	251	
	 		RJ45	8 x 8		4		929 037	251	
			RJ45	4		2		909 321	347	
INTERBUS INLINE (I/O)			screw terminals	4	●	1		920 345 + 920 300	191+188	
	 		screw terminals	4	●	1		920 325 + 920 300	190+188	
INTERBUS Loop			spring terminals	2		3		919 988	217	
Interbus INLINE remote bus			screw terminals	4	●	1		920 371 + 920 300	195+188	
			screw terminals	2	●	1		920 271 + 920 300	201+188	
	 		screw terminals	5		2		918 401	223	
K bus			screw terminals	4	●	1		920 344 + 920 300	191+188	
			screw terminals	2	●	1		920 244 + 920 300	198+188	
			spring terminals	2		2		919 941	213	
KBR energy bus			screw terminals	4	●	1		920 370 + 920 300	194+188	
			screw terminals	2	●	1		920 270 + 920 300	200+188	
			spring terminals	2		2		919 970	216	
KNX bus			screw terminals	4	●	1		920 310 + 920 300	189+188	
			screw terminals	2	●	1		920 211 + 920 300	202+188	
			wires	2		2		925 001	297	
			LSA	20		1		907 401	234	
LON	- TP/XF 78		screw terminals	4	●	1		920 340 + 920 300	191+188	
				screw terminals	2	●	1		920 240 + 920 300	198+188
	-TP/FTT10 (up to 1 A) and TP/LPT10 (up to 1 A)			screw terminals	4	●	1		920 345 + 920 300	191+188
				screw terminals	2	●	1		920 245 + 920 300	198+188
	(up to 1.7 A)			spring terminals	2		2	919 942	214	
	(up to 0.4 A)			LSA	20		1	907 401 + 907 498 + 907 443	234	
	- TP/FTT 10			screw terminals	4	●	1		920 371 + 920 300	195+188
			screw terminals	2	●	1		920 271 + 920 300	201+188	

Bus systems and measuring and control equipment									
Interface/Signal	For mounting on	Ex	Connection system	Protected lines	LifeCheck	SPD class TYPE	SPD	Part No.	Page
LUXMATE bus 			screw terminals	4	●	1		920 344 + 920 300	191+188
			screw terminals	2	●	1		920 244 + 920 300	198+188
M bus 			screw terminals	4	●	1		920 345 + 920 300	191+188
			screw terminals	2	●	1		920 245 + 920 300	198+188
			spring terminals	2		2		919 942	214
			LSA	20		1		907 401 + 907 498 + 907 443	234
Melsec Net 2			BNC	1		2		929 010	272
			BNC	1		2		909 710 / 711	273
MODBUS 			screw terminals	4	●	1		920 371 + 920 300	195+188
			screw terminals	2	●	1		920 271 + 920 300	201+188
			spring terminals	2		2		919 970	216
			LSA	20		1		907 401 + 907 498 + 907 465	234
MPI bus 			screw terminals	4	●	1		920 371 + 920 300	195+188
			screw terminals	2	●	1		920 271 + 920 300	201+188
			spring terminals	2		2		919 970	216
N1 LAN			screw terminals	4	●	1		920 371 + 920 300	195+188
			screw terminals	2	●	1		920 271 + 920 300	201+188
			screw terminals	4	●	1		920 370 + 920 300	194+188
			screw terminals	2	●	1		920 270 + 920 300	200+188
			spring terminals	2		2		919 970	216
			BNC	1		2		909 710 / 711	273
N2 Bus (Johnson Controls, LON, FTT 10)			screw terminals	4	1	1		920 371 + 920 300	195+188
			screw terminals	2	1	1		920 271 + 920 300	201+188
Optocoupler interface			screw terminals	4	●	1		920 364 + 920 300	193+188
			screw terminals	4		2		918 400	221
Procontic CS31 (RS232)			screw terminals	4	●	1		920 322 + 920 300	190+188
Procontic T200 (RS422) 			screw terminals	4	●	1		920 371 + 920 300	195+188
			screw terminals	5		2		918 401	223



















Bus systems and measuring and control equipment									
Interface/Signal	For mounting on	Ex	Connection system	Protected lines	LifeCheck 	SPD class TYPE	SPD	Part No.	Page
PROFIBUS DP/FMS			screw terminals	4	●	1		920 371 + 920 300	195+188
			screw terminals	2	●	1		920 271 + 920 300	201+188
			D-Sub, 9-pin	4		4		924 017	286
			spring terminals	2		2		919 970	216
			LSA	20		1		907 401 + 907 498 + 907 465	234
PROFIBUS PA 			screw terminals	4	●	1		920 344 + 920 300	191+188
			screw terminals	2	●	1		920 244 + 920 300	198+188
			spring terminals	2		2		919 941	213
			wires / terminals	2		2		929 941	301
			LSA	20		1		907 401 + 907 498 + 907 442	234
PROFIBUS PA Ex (i)			screw terminals	4	●	2		920 381 + 920 301	323+322
			screw terminals	4	●	2		920 538 + 920 301	326+322
			screw terminals	2	●	2		920 280 + 920 301	324+322
			spring terminals	2		2		919 960	332
			wires / terminals	2		2		929 960	307
			wires	2		2		929 961 / 963	310
			wires	4		2		929 950 / 951	318
			screw terminals	4	●	2		989 408	330
PROFIBUS SIMATIC NET 			screw terminals	4	●	1		920 371 + 920 300	195+188
			screw terminals	2	●	1		920 271 + 920 300	201+188
PSM-EG-RS422 			screw terminals	4	●	1		920 371 + 920 300	195+188
			screw terminals	5		2		918 401	223
PSM EG RS485 			screw terminals	4	●	1		920 371 + 920 300	195+188
			screw terminals	2	●	1		920 271 + 920 300	201+188
			screw terminals	5		2		918 401	223
Rackbus (RS485) 			screw terminals	4	●	1		920 371 + 920 300	195+188
			screw terminals	2	●	1		920 271 + 920 300	201
			screw terminals	5		2		918 401	223
R bus 			screw terminals	4	●	1		920 340 + 920 300	191+188
			screw terminals	2	●	1		920 240 + 920 300	198+188
			spring terminals	2		2		919 970	216

Bus systems and measuring and control equipment































































Interface/Signal	For mounting on	Ex	Connection system	Protected lines	LifeCheck	SPD class TYPE	SPD	Part No.	Page
RS485 			screw terminals	4	●	1		920 371 + 920 300	195+188
			screw terminals	4	●	2		920 538 + 920 301	326+322
			screw terminals	2	●	1		920 271 + 920 300	201+188
			screw terminals	5		2		918 401	223
			spring terminals	2		2		919 970	216
			LSA	20		1		907 401	234
			wires	2		2		+ 907 498 + 907 465 929 971	234 314
RS422, V11 			screw terminals	4	●	1		920 371 + 920 300	195+188
			screw terminals	2	●	1		920 271 + 920 300	201+188
			screw terminals	5		2		918 401	223
			spring terminals	2		2		919 970	216
			D-Sub, 15-pin	6		2		924 051	291
			D-Sub, 15-pin	6		4		924 016	288
			LSA	20		1		907 401 + 907 498 + 907 465	234
S bus			screw terminals	4	●	1		920 370 + 920 300	194+188
			screw terminals	2	●	1		920 270 + 920 300	200+188
			spring terminals	2		2		919 970	216
SafetyBUS p 			screw terminals	4	●	1		920 371 + 920 300	195+188
			screw terminals	2	●	1		920 271 + 920 300	201+188
			spring terminals	2		2		919 970	216
SDLC			screw terminals	4	●	1		920 370 + 920 300	194+188
			screw terminals	2	●	1		920 270 + 920 300	200+188
			spring terminals	2		2		919 970	216
SDLS			RJ45, screw terminals	4		2		918 410	259
			LSA	20		1		907 401	234
							+ 907 498 + 907 423		
Securilan-LON-Bus (LONWORKS technology Standard Bus based on Echelon)			screw terminals	4	●	1		920 340 + 920 300	191+188
			screw terminals	2	●	1		920 240 + 920 300	198+188
			spring terminals	2		2		919 970	216

Bus systems and measuring and control equipment									
Interface/Signal	For mounting on	Ex	Connection system	Protected lines	LifeCheck 	SPD class TYPE	SPD 	Part No.	Page
SIGMASYS (Siemens fire safety system)			screw terminals	4	●	1		920 345 + 920 300	191+188
			screw terminals	2	●	1		920 245 + 920 300	198+188
			screw terminals	4	●	1		920 325 + 920 300	190+188
			screw terminals	2	●	1		920 225 + 920 300	199+188
			LSA	20		1		907 401 + 907 498 + 907 423	234
SINEC L1			screw terminals	4	●	1		920 370 + 920 300	194+188
			screw terminals	2	●	1		920 270 + 920 300	200+188
SINEC L2			screw terminals	4	●	1		920 370 + 920 300	194+188
			screw terminals	2	●	1		920 270 + 920 300	200+188
			spring terminals	2		2		919 970	216
			D-Sub, 9-pin	4		4		924 017	286
SS97 SIN/X (RS232)			screw terminals	4	●	1		920 322 + 920 300	190+188
			screw terminals	2	●	1		920 222 + 920 300	199+188
SUCONET 			screw terminals	4	●	1		920 340 + 920 300	191+188
			screw terminals	2	●	1		920 240 + 920 300	198+188
Temperature measurement PT 100, PT 1000 Ni 1000, NTC, PTC			screw terminals	4	●	1		920 354 + 920 300	192+188
			screw terminals	4	●	1		920 322 + 920 300	190+188
			screw terminals	2	●	1		920 222 + 920 300	199+188
			spring terminals	2		2		919 970	216
Temperature measurement Ex (i) PT 100, PT 1000, Ni 1000, NTC, PTC			screw terminals	4	●	2		920 384 + 920 301	325+322
TTL			screw terminals	4	●	1		920 322 + 920 300	190+188
			screw terminals	2	●	1		920 222 + 920 300	199+188
			spring terminals	2		2		919 920	212
			D-Sub, 25-pin	4, 9		2		924 046	292
			D-Sub, 9-pin	9		4		924 019	287






















Bus systems and measuring and control equipment




























































Interface/Signal	For mounting on	Ex	Connection system	Protected lines	LifeCheck 	SPD class TYPE	SPD 	Part No.	Page
TTY			screw terminals	4	●	1		920 364 + 920 300	193+188
			screw terminals	4	●	1		920 362 + 920 300	193+188
			screw terminals	4		2		918 400	221
TTY 4 – 20 mA			screw terminals	4	●	1		920 324 + 920 300	190+188
			screw terminals	2	●	1		920 224 + 920 300	199+188
			spring terminals	2		2		919 921	212
			spring terminals	2		3		919 988	217
			wires / terminals	2		2		929 921	302








































Telecommunications, telephony									
Interface/Signal	For mounting on	Ex	Connection system	Protected lines	LifeCheck	SPD class TYPE	SPD	Part No.	Page
a/b wires			LSA	20		1		907 401 + 907 498 + 907 430	234
			RJ45, LSA / RJ45	8 x 2		2		929 071 / 072	252
			screw terminals	4	●	1		920 347 + 920 300	191+188
			RJ45, screw terminals	2		2		918 411	260
			TAE, RJ12	2		2		909 310	345
			spring terminals / RJ45	2		2		929 230	254
			BT jack	6		2		929 026	270
ADSL			screw terminals	4	●	1		920 347 + 920 300	191+188
			screw terminals	2	●	1		920 247 + 920 300	197+188
			LSA	20		1		907 401 + 907 498 + 907 430	234
			wires	2		2		924 272	295
			TAE, RJ12	2		2		909 310	345
			RJ45, LSA / RJ45	8 x 2		2		929 071 / 072	252
			RJ45, screw terminals	2		2		918 411	260
			spring terminals / RJ45	2		2		929 230	254
			BT jack	6		2		929 026	270
ADSL 2+			LSA	20		1		907 401 + 907 498 + 907 430	234
			screw terminals	4	●	1		920 347 + 920 300	191
Datex P			screw terminals	4	●	1		920 375 + 920 300	195
E1			RJ45	8 x 2		2		929 100 / 110	256
			LSA	20		1		907 401 + 907 498 + 907 470	234
			LSA / RJ45	8 x 4		2		929 075	253
			screw terminals	4	●	1		920 375 + 920 300	195
G.703 coaxial			1.6/5.6 connector	1		3		929 040	277
G.703 / G.704			insulation displacement terminals	2		2		907 214	242
			LSA / RJ45	8 x 4		2		929 075	253
			RJ45	8 x 2		2		929 100 / 110	256
			LSA	20		1		907 401 + 907 498 + 907 470	234
			screw terminals	4	●	1		920 375 + 920 300	195

































































Telecommunications, telephony									
Interface/Signal	For mounting on	Ex	Connection system	Protected lines	LifeCheck 	SPD class TYPE	SPD 	Part No.	Page
HDSL up to 30 dBm at 600 W			screw terminals	4	●	1		920 375 + 920 300	195+188
			LSA	20		1		907 401	234
			RJ45	8 x 2		2		+ 907 498 + 907 470	256
			LSA / RJ45	8 x 4		2		929 100 / 110	253
ISDN S ₀			screw terminals	4	●	1		920 375 + 920 300	195+188
			RJ45	4		2		929 024	267
			LSA	20		1		907 401	234
			wires	4		2		+ 907 498 + 907 470	294
			RJ45	4		2		924 270	294
			RJ45	8 x 2		2		909 320	346
			RJ45, screw terminals	4		2		929 100 / 110	256
			RJ45, screw terminals	4		2		918 410	259
ISDN S _{2m} / U _{2m}			screw terminals	4	●	1		920 375 + 920 300	195+188
			LSA	20		1		907 401	234
			RJ45	8 x 2		2		+ 907 498 + 907 470	256
			LSA / RJ45	8 x 4		2		929 100 / 110	253
ISDN U _{K0} / U _{P0}			screw terminals	4	●	1		920 347 + 920 300	191+188
			screw terminals	2	●	1		920 247 + 920 300	197+188
			spring terminals	2		2		919 943	215
			LSA	20		1		907 401	234
			RJ45, LSA / RJ45	8 x 2		2		+ 907 498 + 907 430	252
			TAE, RJ12	2		2		929 071 / 072	252
			RJ45, screw terminals	2		2		909 310	345
			spring terminals / RJ45	10 x 2		2		918 411	260
Modem M1			screw terminals	4	●	1		920 322 + 920 300	190+188
			screw terminals	2	●	1		920 222 + 920 300	199+188
SDSL			RJ45	8 x 2		2		929 100 / 110	256
			LSA	20		1		907 401	234
			screw terminals	4	●	1		+ 907 498 + 907 470	195+188
			LSA / RJ45	8 x 4		2		920 375 + 920 300	253

Telecommunications, telephony									
Interface/Signal	For mounting on	Ex	Connection system	Protected lines	LifeCheck	SPD class TYPE	SPD	Part No.	Page
SHDSL			screw terminals	4	●	1		920 371 + 920 300	195+188
			screw terminals	4	●	1		920 375 + 920 300	195+188
			RJ45	8 x 2		2		929 100 / 110	256
			LSA	20		1		907 401 + 907 498 + 907 470	234
			screw terminals	4	●	1		920 310 + 920 300	189+188
			screw terminals	2	●	1		920 211 + 920 300	202
			LSA / RJ45	8 x 4		2		929 075	253
Telephony system telephony e. g. Siemens, HICOM, Alcatel			screw terminals	2	●	1		920 247 + 920 300	197+188
			spring terminals	2		2		919 943	215
			RJ45, RJ11	4		2		929 028	268
			RJ12	2		2		929 081	269
			LSA	20		1		907 401 + 907 498 + 907 430	234
			LSA	20		1		907 401 + 907 498 + 907 445	234
			wires	4		2		924 272	295
			RJ45, LSA / RJ45	8 x 2		2		929 071 / 072	252
			TAE, RJ12	2		2		909 310	345
			RJ45, screw terminals	2		2		918 411	260
			spring terminals / RJ45	10 x 2		2		929 230	254
T DSL			screw terminals	4	●	1		920 347 + 920 300	191+188
			screw terminals	2	●	1		920 247 + 920 300	197+188
			LSA	20		1		907 401 + 907 498 + 907 430	234
			wires	2		2		924 272	295
			TAE, RJ12	2		2		909 310	345
			RJ45, LSA / RJ45	8 x 2		2		929 071 / 072	252
			RJ45, screw terminals	2		2		918 411	260
			spring terminals / RJ45	10 x 2		2		929 230	254
Telecommunication systems			LSA	20		1		907 401 + 907 498 + 907 430	234
			RJ45, LSA / RJ45	8 x 2		2		929 071 / 072	252
			screw terminals	2	●	1		920 347 + 920 300	191+188
			RJ45, screw terminals	2		2		918 411	260
			TAE, RJ12	2		2		909 310	345
			spring terminals / RJ45	10 x 2		2		929 230	254
			BT jack	6		2		929 026	270





































































Telecommunications, telephony									
Interface/Signal	For mounting on	Ex	Connection system	Protected lines	LifeCheck 	SPD class TYPE	SPD 	Part No.	Page
Universal lightning equipotential bonding			screw terminals	4	●	1		920 310 + 920 300	189+188
			screw terminals	2	●	1		920 211 + 920 300	202+188
			LSA	20		1		907 400	233
			LSA	20		1		907 401	234
			insulation displacement terminals	20		2		907 214	242
			insulation displacement terminals	20		2		907 216	242
VDSL 			LSA	20		1		907 401	234
			screw terminals	4	●	1		920 310 + 920 300	189+188
			screw terminals	2	●	1		920 211 + 920 300	202+188

Data networks									
Interface/Signal	For mounting on	Ex	Connection system	Protected lines	LifeCheck 	SPD class TYPE	SPD	Part No.	Page
Arcnet			BNC	1		2		929 010	272
			BNC	1		2		909 710 / 711	273
ATM			RJ45	8		2		929 100 / 110	256
			RJ45	8		2		929 121	257
			RJ45, LSA / RJ45	8 x 8		3		929 035 / 036	251
			RJ45	8 x 8		4		929 037	251
			RJ45	4		2		909 321	347
Ethernet 10/100/1000 10 Base T			RJ45	8		2		929 100 / 110	256
			RJ45	8		2		929 121	257
			RJ45, LSA / RJ45	8 x 8		3		929 035 / 036	251
			RJ45	8 x 8		4		929 037	251
			RJ45	4		2		909 321	347
			RJ45, screw terminals	4		2		924 274	262
			RJ45	4		2		909 320	346
			LSA	20		1		907 401 + 907 498 + 907 470	234
FDDI, CDDI			RJ45	8		2		929 100 / 110	256
			RJ45	8		2		929 121	257
			RJ45, LSA / RJ45	8 x 8		3		929 035 / 036	251
			RJ45	8 x 8		4		929 037	251
			RJ45	4		2		909 321	347
Industrial Ethernet			LSA	20		1		907 401 + 907 498 + 907 470	234
			RJ45	8		2		929 100 / 110	256
			RJ45	8		2		929 121	257
			RJ45, LSA / RJ45	8 x 8		3		929 035 / 036	251
			RJ45	8 x 8		4		929 037	251
			RJ45	4		2		909 321	347
Power over Ethernet (PoE)			RJ45	8		2		929 100 / 110	256
			RJ45	8		2		929 121	257
			RJ45	8 x 8		4		929 037	251

Data networks									
Interface/Signal	For mounting on	Ex	Connection system	Protected lines	LifeCheck 	SPD class TYPE	SPD	Part No.	Page
Token Ring			LSA	20		1		907 401 + 907 498 + 907 470	234
			RJ45	8		2		929 100 / 110	256
			RJ45	8		2		929 121	257
			RJ45, LSA / RJ45	8 x 8		3		929 035 / 036	251
			RJ45	8 x 8		4		929 037	251
			RJ45	4		2		909 321	347
V 24 (RS232 C)			screw terminals	4	●	1		920 322 + 920 300	190+188
			spring terminals	2		2		919 921	212
			LSA	20		1		907 401 + 907 498 + 907 421	234
			D-Sub 9-, 25-pin	4, 9		2		924 046 / 061	292/290
			D-Sub 9-, 25-pin	9		4		924 018 / 019	289/287
VG AnyLAN			RJ45	8		2		929 100 / 110	256
			RJ45	8		2		929 121	257
			RJ45, LSA / RJ45	8 x 8		3		929 035 / 036	251
			RJ45	8 x 8		4		929 037	251
			RJ45	4		2		909 321	347
Voice over IP			RJ45	8		2		929 100 / 110	256
			RJ45	8 x 8		4		929 037	251
			RJ45	4		2		909 321	347

Antenna systems, broadband systems, transmitting and receiving systems, video systems								
Interface/Signal	For mounting on	Connection system	Protected lines	Frequency range	SPD class TYPE	SPD	Part No.	Page
AMPS, NADAC (824 – 894 MHz)		SMA	1	d.c. – 5.8 GHz	2		929 039	278
		BNC	1	d.c. – 4 GHz	2		929 042	278
		BNC	1	d.c. – 1 GHz	1		929 043	279
		N connector	1	d.c. – 5.8 GHz	2		929 044	278
		N connector	1	d.c. – 2.5 GHz	1		929 045	279
		7/16 connector	1	d.c., 806 – 2200 MHz	1		929 046	280
		7/16 connector	1	d.c., 806 – 2200 MHz	1		929 446	280
		7/16 connector	1	880 – 2200 MHz	1		929 048	281
BWA (Broadband Wireless Access)		SMA	1	d.c. – 5.8 GHz	2		929 039	278
		BNC	1	d.c. – 4 GHz	2		929 042	278
		N connector	1	d.c. – 5.8 GHz	2		929 044	278
		N connector	1	2.0 – 6.0 GHz	1		929 059	282
CATV		F connector	1	d.c., 5 – 2400 MHz	1		909 705	276
		IEC / F connector	1	d.c. – 2400 MHz	2		909 300	344
DCS 1800 B162 (1710 – 1880 MHz)		SMA	1	d.c. – 5.8 GHz	2		929 039	278
		BNC	1	d.c. – 4 GHz	2		929 042	278
		N connector	1	d.c. – 5.8 GHz	2		929 044	278
		N connector	1	d.c. – 2.5 GHz	1		929 045	279
		7/16 connector	1	d.c., 806 – 2200 MHz	1		929 046	280
		7/16 connector	1	d.c., 806 – 2200 MHz	1		929 446	280
		7/16 connector	1	880 – 2200 MHz	1		929 048	281
	DCF 77		SMA	1	d.c. – 5.8 GHz	2		929 039
		BNC	1	d.c. – 4 GHz	2		929 042	278
		BNC	1	d.c. – 1 GHz	1		929 043	279
		screw terminals	2	d.c. – 2.8 MHz	1		920 242 + 920 300	198+188
GPS (1565 – 1585 MHz)		SMA	1	d.c. – 5.8 GHz	2		929 039	278
		BNC	1	d.c. – 4 GHz	2		929 042	278
		N connector	1	d.c. – 5.8 GHz	2		929 044	278
		N connector	1	d.c. – 2.5 GHz	1		929 045	279
		7/16 connector	1	d.c., 806 – 2300 MHz	1		929 046	280
		7/16 connector	1	d.c., 806 – 2200 MHz	1		929 446	280
		7/16 connector	1	880 – 2200 MHz	1		929 048	281

Antenna systems, broadband systems, transmitting and receiving systems, video systems

Interface/Signal	For mounting on	Connection system	Protected lines	Frequency range	SPD class TYPE	SPD	Part No.	Page
GSM 900, GSMR (876 – 960 Hz)		SMA	1	d.c. – 5.8 GHz	2		929 039	278
		BNC	1	d.c. – 4 GHz	2		929 042	278
		BNC	1	d.c. – 1 GHz	1		929 043	279
		N connector	1	d.c. – 5.8 GHz	2		929 044	278
		N connector	1	d.c. – 2.5 GHz	1		929 045	279
		7/16 connector	1	d.c., 806 – 2200 MHz	1		929 046	280
		7/16 connector	1	d.c., 806 – 2200 MHz	1		929 446	280
		7/16 connector	1	880 – 2200 MHz	1		929 048	281
PCS 1900 (1850 – 1990 MHz)		SMA	1	d.c. – 5.8 GHz	2		929 039	278
		BNC	1	d.c. – 4 GHz	2		929 042	278
		N connector	1	d.c. – 5.8 GHz	2		929 044	278
		N connector	1	d.c. – 2.5 GHz	1		929 045	279
		7/16 connector	1	d.c., 806 – 2200 MHz	1		929 046	280
		7/16 connector	1	d.c., 806 – 2200 MHz	1		929 446	280
		7/16 connector	1	880 – 2200 MHz	1		929 048	281
	Radio systems		SMA	1	d.c. – 5.8 GHz	2		929 039
		BNC	1	d.c. – 4 GHz	2		929 042	278
		BNC	1	d.c. – 1 GHz	1		929 043	279
		N connector	1	d.c. – 5.8 GHz	2		929 044	278
		N connector	1	d.c. – 2.5 GHz	1		929 045	279
		7/16 connector	1	d.c., 806 – 2200 MHz	1		929 046	280
		7/16 connector	1	d.c., 806 – 2200 MHz	1		929 446	280
		U connector	1	d.c. – 300 MHz	1		929 057	279
		7/16 connector	1	380 – 512 MHz	1		929 047	281
		7/16 connector	1	880 – 2200 MHz	1		929 048	281
		N connector	1	2.0 – 6.0 GHz	1		929 059	282
SAT			F connector	1	d.c., 5 – 2400 MHz	1		909 705
Sky DSL		F connector	1	d.c., 5 – 2400 MHz	1		909 705	276
TETRA, NMT 450 (380 – 512 Hz)		SMA	1	d.c. – 5.8 GHz	2		929 039	278
		BNC	1	d.c. – 4 GHz	2		929 042	278
		BNC	1	d.c. – 1 GHz	1		929 043	279
		N connector	1	d.c. – 5.8 GHz	2		929 044	278
		N connector	1	d.c. – 2.5 GHz	1		929 045	279
		7/16 connector	1	380 – 512 MHz	1		929 047	281

Antenna systems, broadband systems, transmitting and receiving systems, video systems									
Interface/Signal	For mounting on	Connection system	Protected lines	Frequency range	SPD class TYPE	SPD	Part No.	Page	
TV		F connector	1	d.c., 5 – 3000 MHz	3		909 703	276	
		F connector	1	d.c. – 2400 MHz	1		909 704	276	
		F connector	1	d.c., 5 – 2400 MHz	1		909 705	276	
		IEC / F connector	1	d.c. – 2400 MHz	2		909 300	344	
UMTS		SMA	1	d.c. – 5.8 GHz	2		929 039	278	
		BNC	1	d.c. – 4 GHz	2		929 042	278	
		N connector	1	d.c. – 5.8 GHz	2		929 044	278	
		N connector	1	d.c. – 2.5 GHz	1		929 045	279	
		7/16 connector	1	d.c., 806 – 2200 MHz	1		929 046	280	
		7/16 connector	1	d.c., 806 – 2200 MHz	1		929 446	280	
		7/16 connector	1	880 – 2200 MHz	1		929 048	281	
WiMax		N connector	1	2,0 – 6.0 GHz	1		929 059	282	
WLAN (2.4 GHz band)		SMA	1	d.c. – 5.8 GHz	2		929 039	278	
		BNC	1	d.c. – 4 GHz	2		929 042	278	
		N connector	1	d.c. – 5.8 GHz	2		929 044	278	
WLAN (5 GHz band)		SMA	1	d.c. – 5.8 GHz	2		929 039	278	
		N connector	1	d.c. – 5.8 GHz	2		929 044	278	
		N connector	1	2.0 – 6.0 GHz	1		929 059	282	
Video (2-wire)		screw terminals	4	d.c. – 100 MHz	1		920 371 + 920 300	195+188	
		screw terminals	2	d.c. – 100 MHz	1		920 271 + 920 300	201+188	
			RJ45	8	d.c. – 250 MHz	2		929 100 / 110	256
			RJ45	8	d.c. – 250 MHz	2		929 121	257
		screw terminals	2	d.c. – 100 MHz	1		920 270 + 920 300	200+188	
		RJ45	4	d.c. – 100 MHz	2		909 321	347	
		LSA	20	d.c. – 50 MHz	1		907 401 + 907 498 + 907 465	234	
Video (coaxial)		BNC	1	d.c. – 300 MHz	2		929 010	272	
		BNC	1	0 – 300 MHz	2		909 710 / 711	273	



BLITZDUCTOR® XTU / DEHNbox

Universal lightning current / surge arrester with actiVsense® technology

- Automatically detects the operating voltage
- Optimally adapts the voltage protection level to the voltage currently applied

Application:

- Suitable for the vast majority of applications in information technology systems
- Ideally suited for telecommunications systems, bus systems and measuring and control equipment

⇒ The nominal current of the SPD is limited to 100 mA, allowing the device to be used for the vast majority of applications in information technology systems. In some applications where the signal line is also used for power supply the current may exceed 100 mA.

⇒ All signals are transmitted with signal frequencies up to 50 MHz.

⇒ In bus systems the SPD can be used for applications based on RS485 / RS422 interfaces (not RS232).

For more detailed information, please refer to page 181 (BXTU) and page 263 (DBX).



General

The surge protection components of the arresters do not contain any radioactive isotopes and consist of at least one voltage-limiting or voltage-switching component and, in some cases, also of additional overcurrent-limiting components. Multi-stage arresters must be designed without blind spots. This means that it must be ensured that the different protection stages are fully coordinated with one another. Otherwise the protection stages will not reliably trip and cause faults in the protective device.

Arrester selection

The following must be observed when selecting arresters:

- Protective effect [Yellow/Line SPD class (discharge capacity and voltage protection level)]
- System parameters (system voltage, nominal current and transmission parameters)
- Installations environment (design, connection conditions and approvals)

The selection guide according to interface/signal on pages 158 to 176 facilitates the selection of the right arrester.

Relevant product standard for arresters:

IEC / EN 61643-21

Low-voltage surge protective devices – Part 21: Surge protective devices connected to telecommunications and signalling networks – Performance requirements and testing methods

Discharge capacity

According to IEC / EN 61643-21 arresters must be tested with at least one impulse voltage and impulse current from the above table with the specified quantity of impulses. Further tests may be performed – even with different impulse values or quantities. The max. voltage protection level measured during the test(s) at the output of the device is specified as voltage protection level U_p . Category C represents particularly interference pulses with a steep rate of rise and low energy, while interference pulses of category D are supposed to simulate high energy loads caused by injected partial lightning currents. The relevant category is specified in the technical data of the arresters [see discharge capacity (I_n, I_{imp}) and voltage protection level (U_p)].

Category	Type of test	Impulse voltage	Impulse current	Minimum quantity of impulses	Test for
C1		0.5 kV or 1 kV, 1.2/50 μ s	0.25 kA or 0.5 kA, 8/20 μ s	300	Surge arrester
C2	steep rate of rise	2 kV, 4 kV, or 10 kV, 1.2/50 μ s	1 kA, 2 kA or 5 kA, 8/20 μ s	10	
C3		\geq 1 kV, 1 kV/ μ s	10 A, 25 A or 100 A, 10/1000 μ s	300	
D1	high energy	\geq 1 kV	0.5 kA, 1 kA or 2.5 kA, 10/350 μ s	2	*)

*) Lightning current arrester / Combined lightning current and surge arrester

Voltage and current impulses (preferred values) for determining the voltage-limiting characteristics (excerpt from Table 3 of IEC / EN 61643-21)

Immunity of terminal equipment to be protected

When testing arresters for electromagnetic compatibility (EMC), electrical and electronic equipment (devices) must have a certain immunity against conducted pulse interferences (surges). The requirements on the immunity and the test set-up are described in EN 61000-4-5. Since the devices are used in different electromagnetic environments, they must have different immunities. The immunity of a device depends on the test level. To classify the different immunities of terminal equipment, test levels are subdivided into four different levels (1 to 4). Test level 1 places the lowest requirement on the immunity of terminal equipment. The test level is specified in the arrester documentation or can be requested from the manufacturer of the arrester.

Test levels according to EN 61000-4-5	Corresponds to charging voltage of the test generator
1	0.5 kV
2	1 kV
3	2 kV
4	4 kV

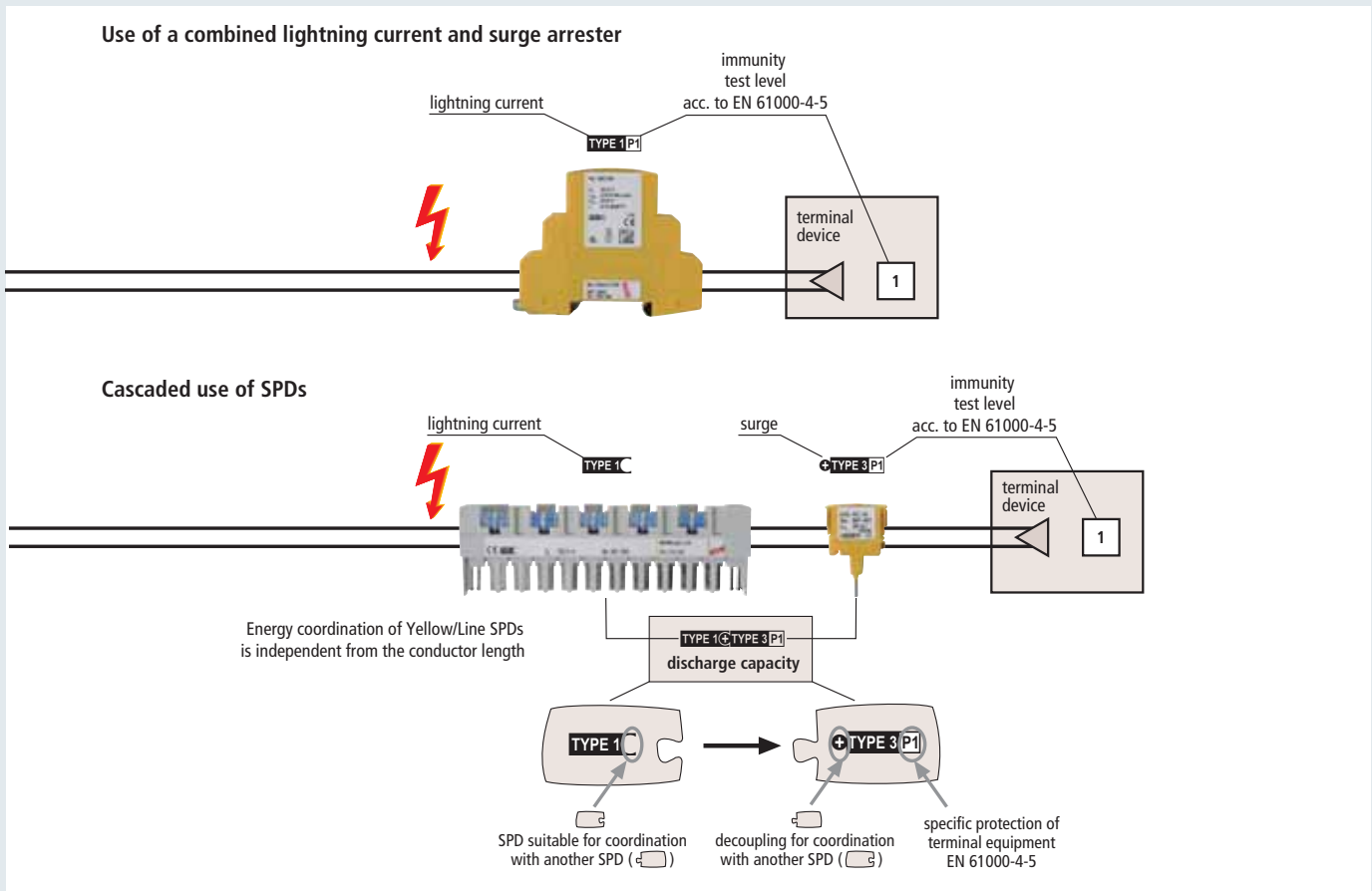
Protective effect of arresters

Yellow/Line arresters for use in information technology systems are able to limit conducted interference to a safe level so that the immunity of the terminal equipment is not exceeded. For example, an arrester with a let-through value below the EMC test values of the terminal device must be selected for a terminal device tested with test level 2: Impulse voltage < 1 kV in combination with an impulse current of some amperes (depending on the coupling network).

All SPD types of the Yellow/Line family for use in information technology systems are assigned a Yellow/Line SPD class and marked with a symbol in the technical data sheet and on their rating plates. The symbol for the Yellow/Line SPD class graphically combines 3 important characteristics of the SPD and can be one single symbol or a combination of individual symbols:

Characteristics	Single symbol	Definition
Discharge capacity of an SPD (according to categories from IEC 61643-21 / EN 61643-21)	TYPE 1	Impulse D1 (10/350 μ s), lightning impulse current ≥ 2.5 kA/line or ≥ 5 kA/total • exceeds the discharge capacity of TYPE 2 – TYPE 4
	TYPE 2	Impulse C2 (8/20 μ s), increased impulse load ≥ 2.5 kA/line or ≥ 5 kA/total • exceeds the discharge capacity of TYPE 3 – TYPE 4
	TYPE 3	Impulse C1 (8/20 μ s), impulse load ≥ 0.25 kA/line or ≥ 0.5 kA/total • exceeds the discharge capacity of TYPE 4
	TYPE 4	Load < TYPE 3
Protective effect of an SPD (limitation below the test levels according to EN 61000-4-5)	P1	Required test level of the terminal device: 1 or higher
	P2	Required test level of the terminal device: 2 or higher
	P3	Required test level of the terminal device: 3 or higher
	P4	Required test level of the terminal device: 4
Energy coordination (with another Yellow/Line SPD)	+	SPD with decoupling impedance, suitable for coordination with an SPD marked ☐
	☐	SPD is suitable for coordination with an SPD with decoupling impedance +

Examples of energy coordination of SPDs according to Yellow/Line SPD classes:





SPD
diagnostics with early warning function!

- Increased protection and availability of your installations and systems due to integrated LifeCheck monitoring system
 - Integrated three-stage monitoring of all protective circuit components
 - Quick diagnostics of surge protective devices
 - Easy testing of protection modules without downtime via contactless RFID technology
 - Even detects previously damaged arresters

Regular testing of arresters installed

During operation, an arrester may be overloaded by discharge processes exceeding the arrester specification. In order to ensure high system availability, it is therefore essential to test arresters on a regular basis. DIN EN 62305-3, supplement 3 (see table excerpt), specifies the maximum intervals between tests of external and internal lightning protection systems.

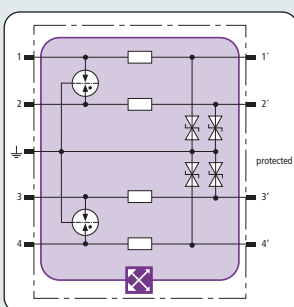
Class of LPS	Visual inspection	Complete inspection	Complete inspection of critical systems
I and II	1 year	2 years	1 year
III and IV	2 years	4 years	1 year

Easy testing with LifeCheck

Maintenance of LifeCheck-equipped BLITZDUCTOR XT arresters is particularly easy. LifeCheck uses modern RFID (Radio Frequency Identification) technology for monitoring the protective circuit and for communication. Irrespective of system downtimes, LifeCheck allows quick and easy testing of arresters by means of the hand-held DRC LC M3+ reader or a stationary DRC MCM XT condition monitoring unit.

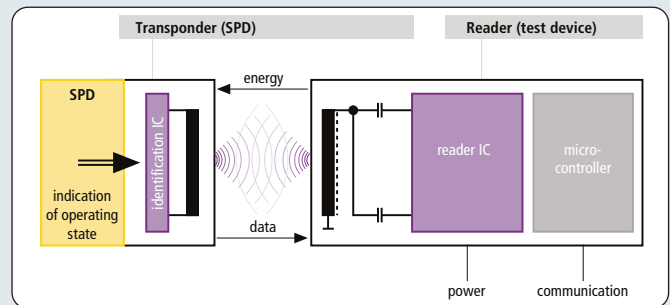
Indication of arrester failure

The three-stage LifeCheck monitoring circuit with early warning function detects extreme electrical or thermal load on all protection elements of an arrester below their destruction limit. This can be contactlessly read out within a matter of seconds by means an RFID reader. If the reader displays "OK", no extreme load was detected. If the contrary is the case, the module should be replaced as soon as possible in order not to threaten the availability of the protected circuit.



The basic circuit diagram graphically shows whether LifeCheck is used to monitor the protective circuit of an arrester. In case of BXT arresters, the complete protective circuit is monitored.

Functional principle of the LifeCheck diagnostics systems



Principle of communication between an arrester and a test device

The diagnostics system consists of two functional units:

1. RFID reading and signalling unit (reader)

Combined with a visual electrical display, an electronic system contactlessly transmits energy to the RFID transponder in the arrester via an antenna. If the operating state of the arrester can be read out, an "OK" message is displayed.

2. Monitoring unit in the arrester:

It combines the diagnostics of the three-stage LifeCheck monitoring circuit with the communication of the RFID transponder:

- Diagnostics of electrical overload (impulse current)

Lightning strikes or overvoltage exceeding the specified discharge capacity of the arrester will damage or even destroy the protection elements. The LifeCheck monitoring device detects this electrical overload. When reading out the transponder, the "Replace SPD!" message appears.
- Diagnostics of thermal overload (overheating)

Active and passive protection elements in a critical temperature range will be previously damaged or even destroyed depending on the type and duration of the overload. The LifeCheck monitoring device detects this overload. When reading out the transponder, the "Replace SPD!" message appears.

Pluggable DIN Rail Mounted SPDs

Universal lightning current / surge arrester

- **Combined lightning current and surge arrester**
 - Max. discharge capacity for balanced data interfaces
 - Capable of carrying lightning currents up to 10 kA (10/350 μ s)
 - For installation in conformity with the lightning protection zones concept at the boundaries from 0_A – 2 and higher
- **With actiVsense technology**
 - Automatically detects the signal voltage ranging from 0 to 180 V
 - Optimally adapts the voltage protection level to the currently applied signal
 - Capable of protecting terminal equipment due to adapted voltage protection level
 - One arrester type for different data interfaces
- **Integrated LifeCheck monitoring function**
 - Arresters can be tested without downtime
 - Detection of previously damaged arresters
 - High signal availability due to preventive replacement of arresters
- **Arrester consists of a protection module and a base part**
 - For DIN rail mounting in conjunction with the standard base part
 - Easy replacement of protection modules
 - Shock and vibration-proof for safe operation



BLITZDUCTOR XTU for protecting different balanced signal and data interfaces. Space-saving two-part design with base part and protection module for DIN rail mounting.

The compact BLITZDUCTOR XTU combined lightning current and surge arrester is designed for protecting information and automation equipment and systems. Due to its unique actiVsense technology, the nominal voltage is not specified. This allows the arrester to be used for voltages ranging from 0 to 180 V with a ± 5 V/50 MHz signal voltage. The nominal current is limited to 100 mA which is completely sufficient for information technology systems.

Its innovative actiVsense technology allows the arrester to detect the signal voltage and to automatically adapt its voltage protection level to this voltage. This makes the arrester ideal for applications where changing or slowly fluctuating signal levels (≤ 400 Hz) are to be expected. In case of interference, BLITZDUCTOR XTU arresters have an adapted minimal residual voltage for every signal voltage, thus providing maximum protection for devices and system circuits connected to them.

BLITZDUCTOR XTU is available in two versions. The four-pole version provides protection for two separate balanced interfaces, that is the arrester automatically detects the operating / signal voltage for every pair and optimally adapts the voltage protection level for every signal circuit. This allows to protect two different balanced interfaces by means of a single arrester, thus reducing installation time, saving costs and reducing the number of arresters to be used. If only one signal interface is to be protected, a two-pole version can be used for a balanced data interface (one pair). This version also allows direct or indirect connection of line shields to the equipotential bonding.

The DIN rail mounted arresters are ideally suited for use in information technology transmission systems such as telecommunication, bus or measuring and control systems.



Optimally adapted voltage protection level with integrated actiVsense technology for the protection of terminal equipment



To ensure a high availability of signal circuits, the integrated LifeCheck function allows to quickly check whether arresters are previously damaged



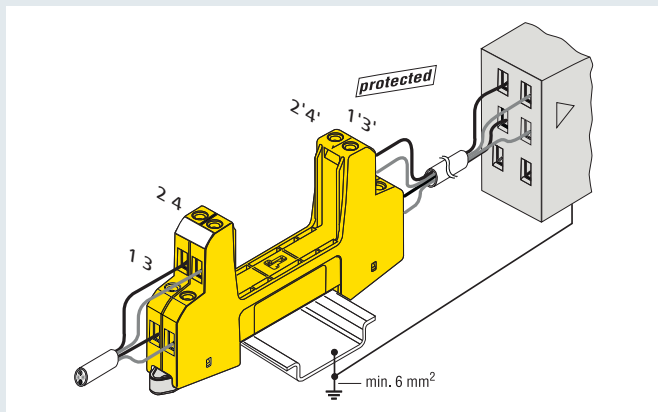
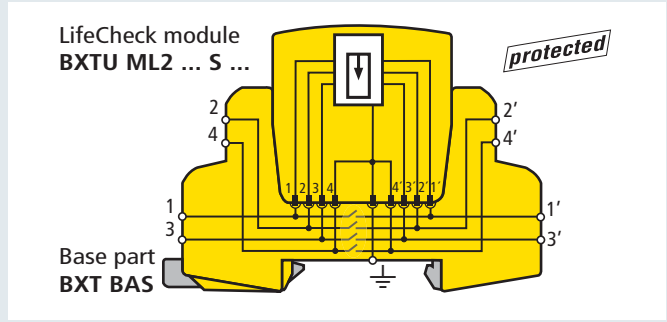
The protection module of the pluggable arrester safely snaps into the base part, thus ensuring shock and vibration resistance

Universal lightning current / surge arrester

Pluggable DIN Rail Mounted SPDs

Modular design

Completely mounted BLITZDUCTOR XTU. Space-saving two-part design with base part and protection module for DIN rail mounting. The module locking mechanism ensures safe operation, thus the arrester provides protection against vibration effects and shock loads up to a 30-fold acceleration of gravity. The function-optimised design of the arrester ensures both fast and easy replacement of the protection module which houses all relevant protection elements.



Connecting the lines to the base part

Up to four lines can be connected on two levels. For DIN rail mounting purposes, lines of a pair belonging to each other are connected on top of one another.

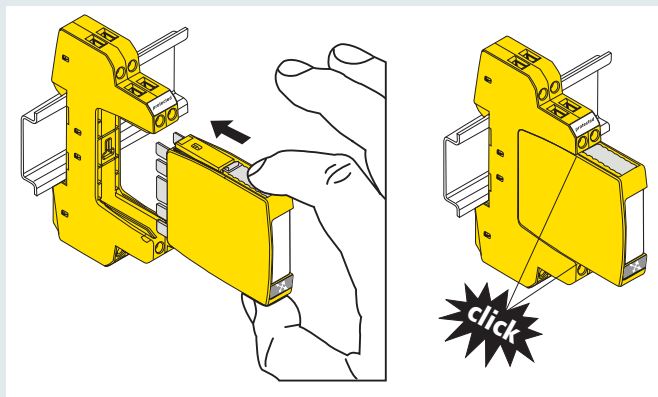
Direct / indirect shield earthing

If the line shield cannot be directly earthed on both sides for technical reasons, one-sided indirect shield earthing might be advisable. This can be achieved by using arrester modules of type BXTU ML2 BD S 0-180. The lightning current carrying gas discharge tube in the protection module at terminal 3, 3' prevents low-frequency compensating currents. Transient interference is thus discharged via indirect shield earthing.



Accessory for EMC spring terminals

In conjunction with the two-pole BXTU module, the terminals in the base part can be used for shield earthing. In particular in bus systems, it is advisable to use the EMC spring terminal for large-area connection of line shields to the equipotential bonding. Direct or indirect shield earthing can be implemented by means of the accessory supplied with EMC spring terminals.



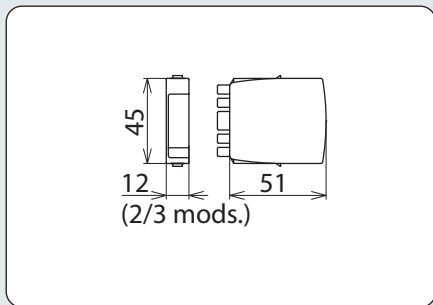
Safe installation of the arrester

The function-optimised design of the arrester allows both to safely plug the protection module into the base part and to remove it without problems. The module is secured in the base part by snapping it in (audible click). When pressing the grey buttons, the module can be removed with little effort. This is ensured by the laminated spring contacts and the module release spring. A mechanical reverse voltage protection ensures that the module is installed in the correct position.

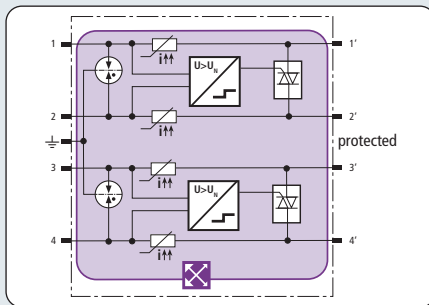


LifeCheck monitoring function

The LifeCheck function allows to easily and quickly test arresters without removing the module from the system circuit. Integrated into the protection modules, LifeCheck permanently monitors the status of the arrester. Like an early warning system, LifeCheck reliably detects potential electrical and thermal overload of the protection components. The LifeCheck status can be read out within a matter of seconds by means of DEHNrecord LC via contactless RFID technology. A stationary DEHNrecord MCM condition monitoring system allows status-oriented maintenance of 10 BXTU arresters.



Dimension drawing BXTU ML4 BD 0-180



Basic circuit diagram BXTU ML4 BD 0-180



Space-saving combined lightning current and surge arrester module with actiVsense and LifeCheck technology for protecting two pairs of galvanically isolated balanced interfaces with the same or a different operating voltage. Automatically detects the operating voltage of the wanted signal and optimally adapts the voltage protection level to it.

- Universal voltage type with actiVsense technology
- For installation in conformity with the lightning protection zones concept at the boundaries from $O_A - 2$ and higher
- With integrated LifeCheck monitoring function

Type	BXTU ML4 BD 0-180
Part No.	920 349
SPD class	TYPE 1 P1
SPD monitoring system	LifeCheck
Operating voltage (U_N)	0 - 180 V
Frequency of the operating voltage (f_{UN})	0 - 400 Hz
Max. continuous operating d.c. voltage (U_C)	180 V
Max. continuous operating a.c. voltage (U_C)	127 V
Permissible superimposed signal voltage (U_{signal})	$\leq \pm 5$ V
Cut-off frequency line-line (U_{signal} , balanced 100 ohms) (f_G)	50 MHz
Nominal current at 80° C (corresponds to max. short-circuit current) (I_n)	100 mA
D1 Total lightning impulse current (10/350 μ s) (I_{imp})	10 kA
D1 Lightning impulse current (10/350 μ s) per line (I_{imp})	2.5 kA
C2 Total nominal discharge current (8/20 μ s) (I_n)	20 kA
C2 Nominal discharge current (8/20 μ s) per line (I_n)	10 kA
Voltage protection level line-line for I_n C2 (U_p)	see diagram, line C2
Voltage protection level line-line at 1 kV/ μ s C3 (U_p)	see diagram, line C3
Voltage protection level line-line for I_{imp} D1 (U_p)	$\leq U_N + 53$ V
Voltage protection level line-PG for C2/C3/D1	≤ 550 V
Series impedance per line	≤ 10 ohms; typically 7.5 ohms
Capacitance line-line (C)	≤ 80 pF
Capacitance line-PG (C)	≤ 16 pF
Operating temperature range	-40°C...+80°C
Degree of protection (with plugged-in protection module)	IP 20
Pluggable into	BXT BAS base part
Earthing via	BXT BAS base part
Enclosure material	polyamide PA 6.6
Colour	yellow
Test standards	IEC 61643-21 / EN 61643-21, UL 497B
SIL classification	SIL1 / SIL2 *)
Approvals	CSA, UL, GOST

*) For more detailed information, please refer to www.dehn.de/en/sil/ and page 210

Accessory for BLITZDUCTOR® XTU

DRC LC M3+

Portable device with LifeCheck sensor for flexible use. Fast and easy testing of LifeCheck-equipped arresters.

Type	DRC LC M3+
Part No.	910 653
Dimensions of storage case	340 x 275 x 83 mm



Accessory for BLITZDUCTOR® XTU

DRC MCM XT

DIN rail mounted device with integrated LifeCheck sensor for condition monitoring of max. 10 LifeCheck-equipped BXTU arresters.

Type	DRC MCM XT
Part No.	910 695
Colour	grey



Accessory for BLITZDUCTOR® XTU

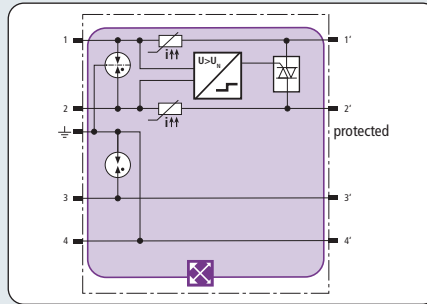
BXT BAS

Base part as a very space-saving, four-pole, universal feed-through terminal for the insertion of a protection module without signal interruption.

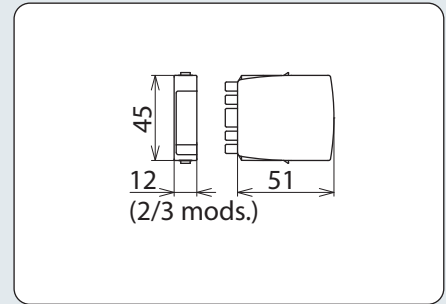
Type	BXT BAS
Part No.	920 300
Colour	yellow



For "Accessories for BLITZDUCTOR XTU LifeCheck modules", please also refer to pages 185/206/207/208/368/370.



Basic circuit diagram BXTU ML2 BD S 0-180



Dimension drawing BXTU ML4 BD 0-180

- **Universal voltage type with actiVsense technology**
- **For installation in conformity with the lightning protection zones concept at the boundaries from 0_A – 2 and higher**
- **With integrated LifeCheck monitoring function**

Space-saving combined lightning current and surge arrester module with actiVsense and LifeCheck technology for protecting one pair. Direct or indirect shield earthing. Automatically detects the operating voltage of the wanted signal and optimally adapts the voltage protection level to it.

Type	BXTU ML2 BD S 0-180
Part No.	920 249
SPD class	TYPE 1 P1
SPD monitoring system	LifeCheck
Operating voltage (U _N)	0 - 180 V
Frequency of the operating voltage (f _{UN})	0 - 400 Hz
Max. continuous operating d.c. voltage (U _c)	180 V
Max. continuous operating a.c. voltage (U _c)	127 V
Permissible superimposed signal voltage (U _{signal})	≤ +/- 5 V
Nominal current at 80° C (corresponds to max. short-circuit current) (I _N)	100 mA
D1 Total lightning impulse current (10/350 μs) (I _{imp})	9 kA
D1 Lightning impulse current (10/350 μs) per line (I _{imp})	2.5 kA
C2 Total nominal discharge current (8/20 μs) (I _n)	20 kA
C2 Nominal discharge current (8/20 μs) per line (I _n)	10 kA
Voltage protection level line-line for I _n C2 (U _p)	see diagram, line C2
Voltage protection level line-line at 1 kV/μs C3 (U _p)	see diagram, line C3
Voltage protection level line-line for I _{imp} D1 (U _p)	≤ U _N + 53 V
Voltage protection level line-PG for C2/C3/D1	≤ 550 V
Series impedance per line	≤ 10 ohms; typically 7.5 ohms
Capacitance line-line (C)	≤ 80 pF
Capacitance line-PG (C)	≤ 25 pF
Operating temperature range	-40°C...+80°C
Degree of protection (with plugged-in protection module)	IP 20
Pluggable into	BXT BAS base part
Earthing via	BXT BAS base part
Enclosure material	polyamide PA 6.6
Colour	yellow
Test standards	IEC 61643-21 / EN 61643-21, UL 497B
SIL classification	SIL1 / SIL2 *)
Approvals	CSA, UL, GOST

*) For more detailed information, please refer to www.dehn.de/en/sil/ and page 210

Accessory for BLITZDUCTOR® XTU

BXT BAS

Base part as a very space-saving, four-pole, universal feed-through terminal for the insertion of a protection module without signal interruption.



Type	BXT BAS
Part No.	920 300
Colour	yellow

Accessory for BLITZDUCTOR® XTU

DRC MCM XT

DIN rail mounted device with integrated LifeCheck sensor for condition monitoring of max. 10 LifeCheck-equipped BXTU arresters.



Type	DRC MCM XT
Part No.	910 695
Colour	grey

Accessory for BLITZDUCTOR® XTU

DRC LC M3+

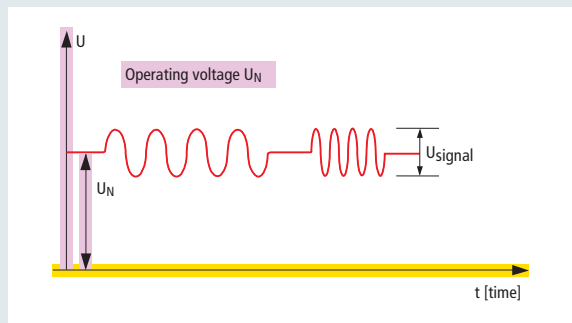
Portable device with LifeCheck sensor for flexible use. Fast and easy testing of LifeCheck-equipped arresters.



Type	DRC LC M3+
Part No.	910 653
Dimensions of storage case	340 x 275 x 83 mm

For "Accessories for BLITZDUCTOR XTU LifeCheck modules", please also refer to pages 185/206/207/208/368/370.

Pluggable DIN Rail Mounted SPDs



Operating voltage U_N and superimposed signal voltage U_{signal}

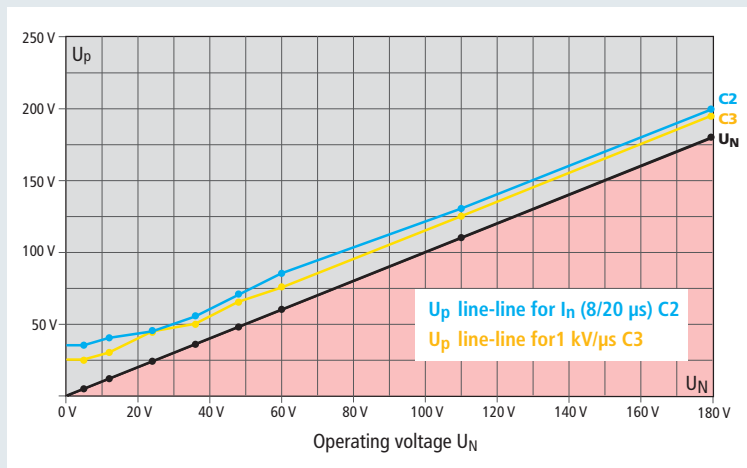
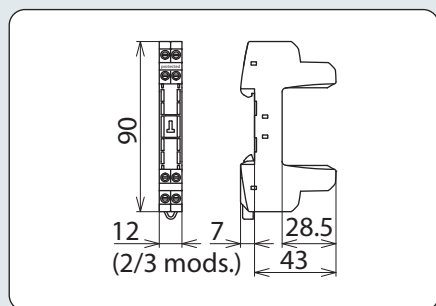


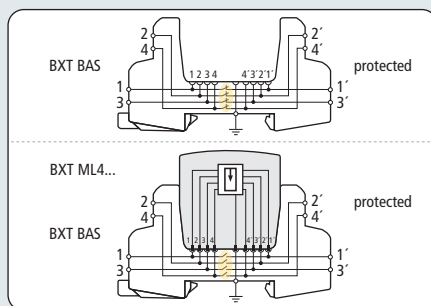
Diagram of the BXTU voltage protection level

BLITZDUCTOR® XT Base Part

BXT BAS



Dimension drawing BXT BAS



Basic circuit diagram with and without plugged-in module



- Four-pole version for universal use with all types of protection modules
- The modules can be plugged in and removed without signal interruption
- Universal design without protection elements

The BLITZDUCTOR XT base part is a very space-saving four-pole universal feed-through terminal for the insertion of a protection module without signal interruption. The snap-in mechanism at the supporting foot of the base part allows the protection module to be safely earthed via the DIN rail. As no components of the protective circuit are situated in the base part, maintenance operation is only required for the protection modules.

Type	BXT BAS
Part No.	920 300
Operating temperature range	-40°C...+80°C
Degree of protection	IP 20
For mounting on	35 mm DIN rails acc. to EN 60715
Connection (input / output)	screw / screw
Cross-sectional area, solid	0.08 - 4 mm ²
Cross-sectional area, flexible	0.08 - 2.5 mm ²
Tightening torque (terminals)	0.4 Nm
Earthing via	35 mm DIN rail acc. to EN 60715
Enclosure material	polyamide PA 6.6
Colour	yellow
ATEX approvals	DEKRA 11ATEX0089 X: II 3 G Ex nA IIC T4 Gc *)
IECEx approvals	DEK 11.0032X: Ex nA IIC T4 Gc *)
Approvals	CSA, VdS, UL, GOST

*) only in connection with an approved arrester module



BLITZDUCTOR XT with an earthing module (grey). The lines can be tested by means of the measuring module (grey with lines) without disconnecting the terminals.

BLITZDUCTOR XT combined arresters are pluggable and universal multi-pole DIN rail mounted lightning current and surge arresters for the protection of measuring and control circuits, bus systems and telecommunication systems. They are particularly suited for installations and systems which require a high level of availability. For effective protection of terminal equipment under lightning and overvoltage conditions, BLITZDUCTOR XT arresters combine the permanently high impulse current discharge capacity of a lightning current arrester with the low voltage protection level of a surge arrester.

LifeCheck allows quick and easy testing of arresters without removing the module. Integrated into the protection modules, LifeCheck permanently monitors the proper condition of the arrester and acts like an early warning system, detecting imminent electrical or thermal overload of the protection components. The status of the arrester can be read out within

- **Combined lightning current and surge arrester**
 - Maximum discharge capacity for two, three or four-pole interfaces
 - Lightning current carrying capacity up to 10 kA (10/350)
 - Low voltage protection level, capable of protecting terminal equipment
- **SPD consists of a protection module and a base part**
 - Easy replacement of protection modules with little effort
 - Make-before-break switch contact in the base part allows the protection modules to be removed and inserted without interrupting system operation
 - All protection components integrated in the protection module
- **Functional and appealing design**
 - DIN rail mounting with integrated earthing
 - Minimum space requirements, two pairs over a width of 2/3 modules
 - Vibration and shock-resistant for safe operation

a matter of seconds via contactless RFID technology by means of the portable DEHNrecord LC reader. The LifeCheck feature also saves the date of the last test of the protection module and indicates it. Stationary installed, a condition monitoring system permanently monitors the condition of up to 10 BXT arresters.

The module locking system ensures safe operation. Thus the arrester provides protection against vibration effects and shock up to a 30-fold acceleration of gravity. The function-optimised design of the arrester ensures both fast and easy replacement of protection modules which house all relevant protection elements.

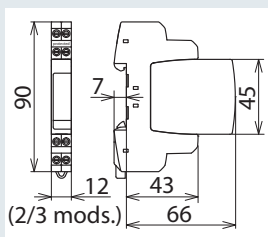
A wide range of accessories makes BLITZDUCTOR XT arresters particularly user-friendly. Elements for labelling, earthing of unused lines or easy testing of lines complete the product range.



Completely installed BLITZDUCTOR XT. Two-part design with universal base part and application-specific protection module. Especially space-saving design, for DIN rail mounting.



Universal base part accommodates all application-specific protection modules thereby minimising storage requirements and easing prewiring and maintenance operations. The modules can be easily removed from the base part without signal interruption due to make-before-break switch contacts.

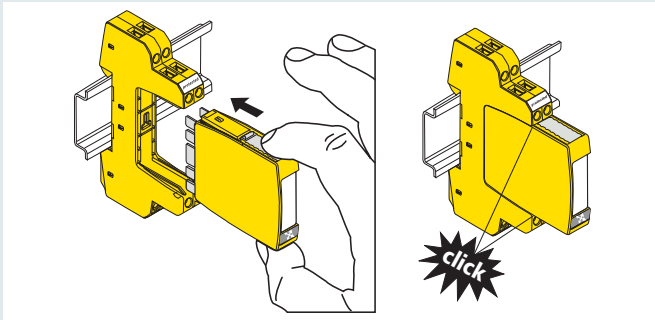


Dimension drawing of a BLITZDUCTOR XT base part with plugged-in protection module. Width: 2/3 modules (12 mm), for DIN rail mounting in distribution boards.

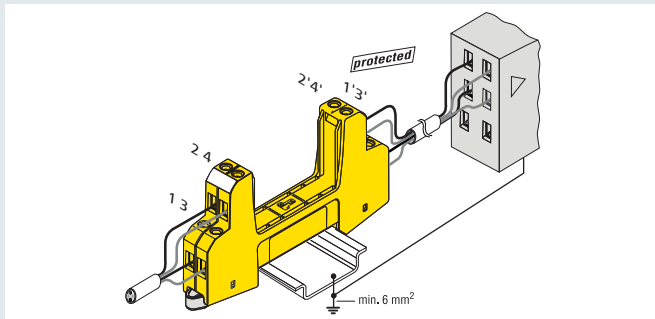


BXT ML4 B....:
LifeCheck-equipped protection modules for four single lines or two pairs for protection against high partial lightning currents and surge pulses.

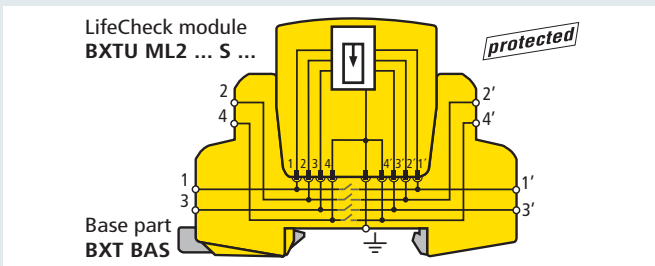
BXT ML2 B....:
LifeCheck-equipped protection modules for two single lines or one pair for protection against high partial lightning currents and surge pulses. Type BXT ML2 ... S additionally provides the possibility of direct or indirect shield earthing.



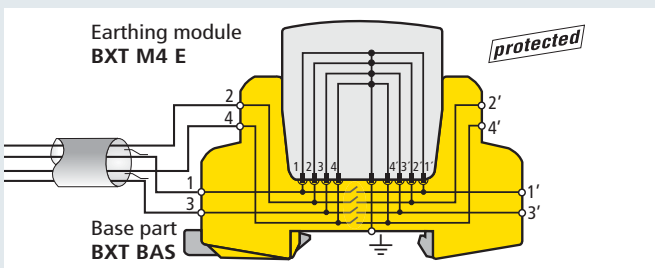
The function-optimised design of the device allows both to safely plug the protection module into the base part and to remove it without problems. The module is secured in the base part by snapping it in (audible click). When pressing the grey buttons, the module can be removed with little effort. This is ensured by the laminated spring contacts and the module release spring. A mechanical reverse polarity protection ensures that the module is installed in the correct position.



Up to 4 lines can be connected on 2 levels. For DIN rail mounting purposes, lines of a pair belonging to each other are connected on top of one another.

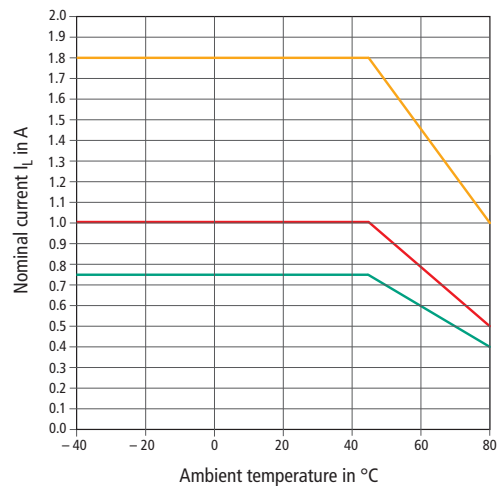


If the line shield cannot be earthed on both sides for technical reasons, one-sided indirect shield earthing might be advisable. This can be performed by using protection modules of type BXT ML2 ... S. The terminal 3, 3' is connected to a gas discharge tube which is capable of carrying lightning currents and prevents compensating currents. Transient impulse currents on the shield are discharged via indirect shield earthing.



In case of a stranded cable, unused lines should be laid and earthed. If the unused lines are connected to base parts, earthing modules of type BXT M4 E should be used. These reserve space for retrofitting a protection module and the lines can be integrated efficiently into the equipotential bonding.

Max. nominal current at ambient temperature

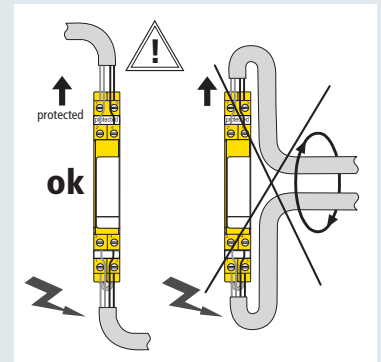


Colour-coded characteristic curves:

BXT ML4 / ML2 ...

BE	5	12	24	36	48	60	180
BD	5	12	24		48	60	180
BC	5		24				
BE HF	5						
BD HF	5		24				

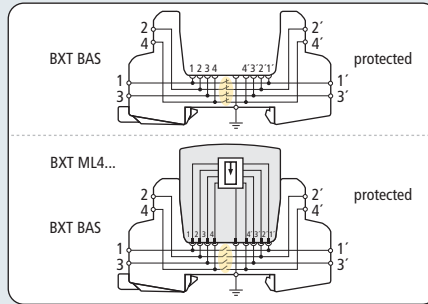
BXT with a series impedance of 1 Ω:
 BXT with a series impedance of 1.8 Ω:
 BXT with a series impedance of 0.43 Ω:



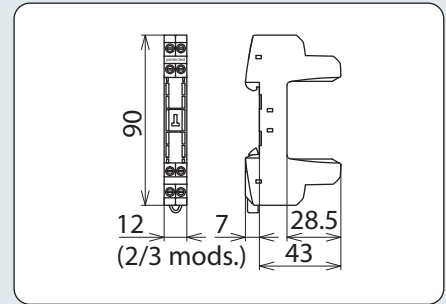
The protected lines always have to be assigned to terminals 1' to 4' (protected) of the base part. In order not to reduce the protective effect, protected and unprotected lines have to be installed separately.



The terminals in the base part can be used with many two-pole modules for direct or indirect shield earthing. In particular in bus systems, it is advisable to use the EMC spring terminal for large-area connection of line shields.



Basic circuit diagram with and without plugged-in module



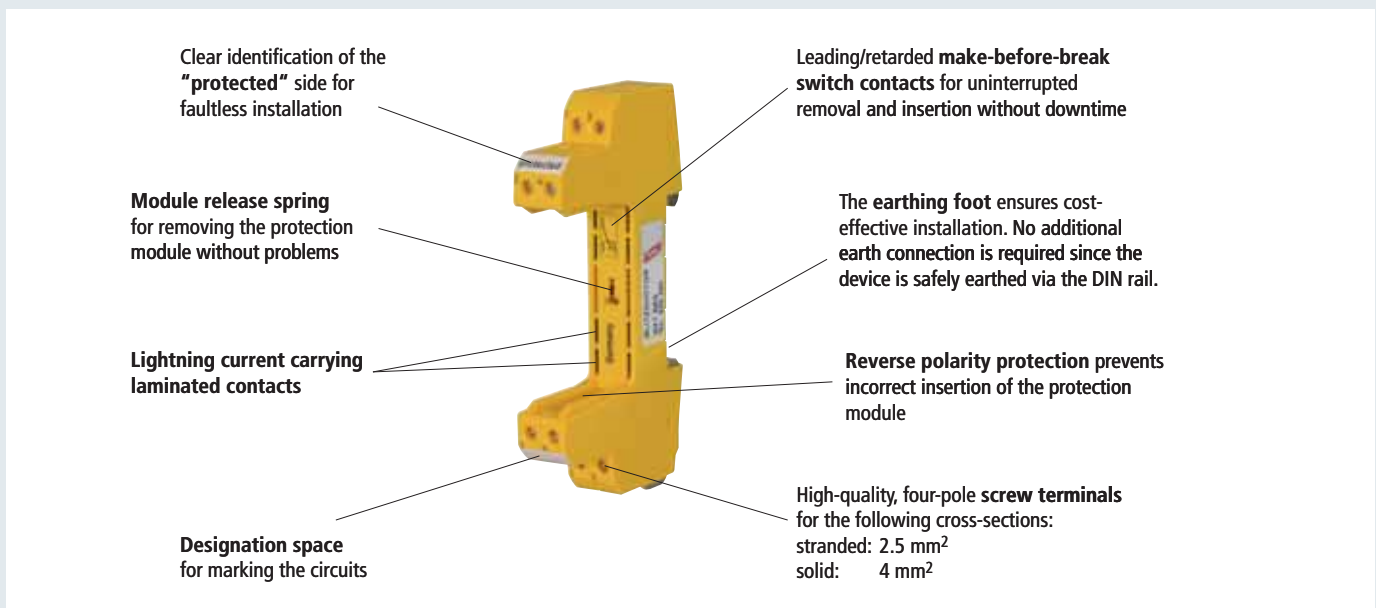
Dimension drawing BXT BAS

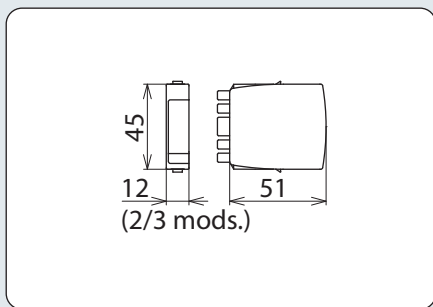
- Four-pole version for universal use with all types of protection modules
- The modules can be plugged in and removed without signal interruption
- Universal design without protection elements

The BLITZDUCTOR XT base part is a very space-saving four-pole universal feed-through terminal for the insertion of a protection module without signal interruption. The snap-in mechanism at the supporting foot of the base part allows the protection module to be safely earthed via the DIN rail. As no components of the protective circuit are situated in the base part, maintenance operation is only required for the protection modules.

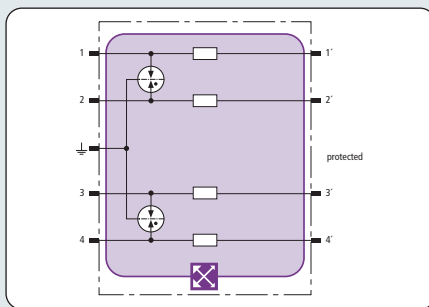
Type	BXT BAS
Part No.	920 300
Operating temperature range	-40°C...+80°C
Degree of protection	IP 20
For mounting on	35 mm DIN rails acc. to EN 60715
Connection (input / output)	screw / screw
Cross-sectional area, solid	0.08 - 4 mm ²
Cross-sectional area, flexible	0.08 - 2.5 mm ²
Tightening torque (terminals)	0.4 Nm
Earthing via	35 mm DIN rail acc. to EN 60715
Enclosure material	polyamide PA 6.6
Colour	yellow
ATEX approvals	DEKRA 11ATEX0089 X: II 3 G Ex nA IIC T4 Gc *)
IECEx approvals	DEK 11.0032X: Ex nA IIC T4 Gc *)
Approvals	CSA, VdS, UL, GOST

*) only in connection with an approved arrester module





Dimension drawing BXT ML4 B



Basic circuit diagram BXT ML4 B



Space-saving, four-pole lightning current arrester module with LifeCheck feature for almost all applications. For use in connection with downstream **TYPE 2/P1** surge arresters or combined lightning current and surge arresters with a lower or equal voltage level. If LifeCheck detects thermal or electrical overload, the arrester has to be replaced. This status is indicated contactlessly by the DEHNrecord LC / MCM reader.

- LifeCheck SPD monitoring function
- Four-pole lightning equipotential bonding
- For installation in conformity with the lightning protection zones concept at the boundaries from $0_A - 1$ and higher

Type	BXT ML4 B 180
Part No.	920 310
SPD class	TYPE 1+
SPD monitoring system	LifeCheck
Nominal voltage (U_N)	180 V
Max. continuous operating d.c. voltage (U_C)	180 V
Max. continuous operating a.c. voltage (U_C)	127 V
Nominal current at 45°C (I_N)	1.2 A
D1 Total lightning impulse current (10/350 μ s) (I_{imp})	10 kA
D1 Lightning impulse current (10/350 μ s) per line (I_{imp})	2.5 kA
C2 Total nominal discharge current (8/20 μ s) (I_n)	20 kA
C2 Nominal discharge current (8/20 μ s) per line (I_n)	10 kA
Voltage protection level line-line for I_{imp} D1 (U_p)	≤ 600 V
Voltage protection level line-PG for I_{imp} D1 (U_p)	≤ 550 V
Voltage protection level line-line at 1 kV/ μ s C3 (U_p)	≤ 650 V
Voltage protection level line-PG at 1 kV/ μ s C3 (U_p)	≤ 550 V
Series impedance per line	0.4 ohms
Capacitance line-line (C)	≤ 16 pF
Capacitance line-PG (C)	≤ 16 pF
Operating temperature range	-40°C...+80°C
Degree of protection (with plugged-in protection module)	IP 20
Pluggable into	base part
Earthing via	base part
Enclosure material	polyamide PA 6.6
Colour	yellow
Test standards	IEC 61643-21 / EN 61643-21, UL 497B
SIL classification	SIL2 / SIL3 *)
ATEX approvals	DEKRA 11ATEX0089 X: II 3 G Ex nA IIC T4 Gc
IECEx approvals	DEK 11.0032X: Ex nA IIC T4 Gc
Approvals	CSA, VdS, GOST

*) For more detailed information, please refer to www.dehn.de/en/sil/ and page 210

Accessories for BLITZDUCTOR® XT LifeCheck® Modules

DRC LC M3+

Portable device with LifeCheck sensor for flexible use. Fast and easy testing of LifeCheck-equipped arresters.

Type	DRC LC M3+
Part No.	910 653
Dimensions of storage case	340 x 275 x 83 mm



DRC MCM XT

DIN rail mounted device with integrated LifeCheck sensor for condition monitoring of max. 10 LifeCheck-equipped BXT arresters.

Type	DRC MCM XT
Part No.	910 695
Colour	grey



BXT BAS

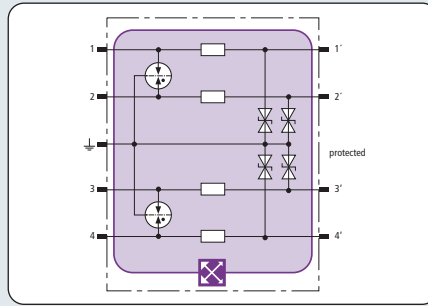
Base part as a very space-saving, four-pole, universal feed-through terminal for the insertion of a protection module without signal interruption.

Type	BXT BAS
Part No.	920 300
Colour	yellow

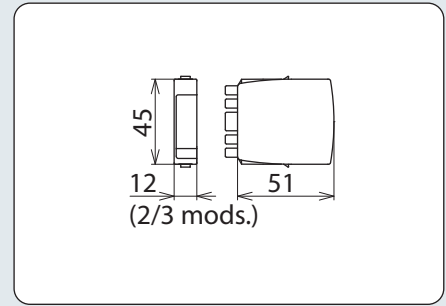


BXT ML4 BE 5 – BE 180

Pluggable DIN Rail Mounted SPDs



Basic circuit diagram BXT ML4 BE



Dimension drawing BXT ML4 BE

- LifeCheck SPD monitoring function
- Optimal protection of four single lines
- For installation in conformity with the lightning protection zones concept at the boundaries from 0_A – 2 and higher

Space-saving combined lightning current and surge arrester module with LifeCheck feature for protecting four single lines with common reference potential as well as unbalanced interfaces. If LifeCheck detects thermal or electrical overload, the arrester has to be replaced. This status is indicated contactlessly by the DEHNrecord LC / MCM reader.

Type BXT ML4 ...	BE 5	BE 12	BE 24	BE 36	BE 48	BE 60	BE 180
Part No.	920 320	920 322	920 324	920 336	920 325	920 326	920 327
SPD class	TYPE 1P1	TYPE 1P1	TYPE 1P1	TYPE 1P1	TYPE 1P1	TYPE 1P1	TYPE 1P2
SPD monitoring system	LifeCheck	LifeCheck	LifeCheck	LifeCheck	LifeCheck	LifeCheck	LifeCheck
Nominal voltage (U _N)	5 V	12 V	24 V	36 V	48 V	60 V	180 V
Max. continuous operating d.c. voltage (U _C)	6 V	15 V	33 V	45 V	54 V	70 V	180 V
Max. continuous operating a.c. voltage (U _C)	4.2 V	10.6 V	23.3 V	31 V	38.1 V	49.5 V	127 V
Nominal current at 45°C (I _N)	1.0 A	0.75 A	0.75 A	1.8 A	0.75 A	1.0 A	1.0 A
D1 Total lightning impulse current (10/350 µs) (I _{imp})	10 kA	10 kA	10 kA	10 kA	10 kA	10 kA	10 kA
D1 Lightning impulse current (10/350 µs) per line (I _{imp})	2.5 kA	2.5 kA	2.5 kA	2.5 kA	2.5 kA	2.5 kA	2.5 kA
C2 Total nominal discharge current (8/20 µs) (I _n)	20 kA	20 kA	20 kA	20 kA	20 kA	20 kA	20 kA
C2 Nominal discharge current (8/20 µs) per line (I _n)	10 kA	10 kA	10 kA	10 kA	10 kA	10 kA	10 kA
Voltage protection level line-line for I _{imp} D1 (U _p)	≤ 29 V	≤ 50 V	≤ 102 V	—	≤ 160 V	≤ 220 V	≤ 520 V
Voltage protection level line-PG for I _{imp} D1 (U _p)	≤ 27 V	≤ 37 V	≤ 66 V	≤ 85 V	≤ 95 V	≤ 125 V	≤ 300 V
Voltage protection level line-line at 1 kV/µs C3 (U _p)	≤ 18 V	≤ 38 V	≤ 90 V	≤ 112 V	≤ 140 V	≤ 180 V	≤ 500 V
Voltage protection level line-PG at 1 kV/µs C3 (U _p)	≤ 9 V	≤ 19 V	≤ 45 V	≤ 56 V	≤ 70 V	≤ 90 V	≤ 250 V
Series impedance per line	1.0 ohm	1.8 ohms	1.8 ohms	0.43 ohms	1.8 ohms	1.0 ohm	1.0 ohm
Cut-off frequency line-PG (f _c)	1.0 MHz	2.7 MHz	6.8 MHz	3.8 MHz	8.7 MHz	9.0 MHz	25.0 MHz
Capacitance line-line (C)	≤ 2.7 nF	≤ 1.0 nF	≤ 0.5 nF	≤ 0.8 nF	≤ 0.35 nF	≤ 250 pF	≤ 120 pF
Capacitance line-PG (C)	≤ 5.4 nF	≤ 2.0 nF	≤ 1.0 nF	≤ 1.6 nF	≤ 0.7 nF	≤ 500 pF	≤ 240 pF
Operating temperature range	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C
Degree of protection (with plugged-in protection module)	IP 20	IP 20	IP 20	IP 20	IP 20	IP 20	IP 20
Pluggable into	base part	base part	base part	base part	base part	base part	base part
Earthing via	base part	base part	base part	base part	base part	base part	base part
Enclosure material	polyamide PA 6.6 polyamide PA 6.6 polyamide PA 6.6 polyamide PA 6.6 polyamide PA 6.6 polyamide PA 6.6 polyamide PA 6.6						
Colour	yellow	yellow	yellow	yellow	yellow	yellow	yellow
Test standards	IEC 61643-21 / EN 61643-21, UL 497B						
SIL classification	SIL2 / SIL3 *)						
ATEX approvals	DEKRA 11ATEX0089 X: II 3 G Ex nA IIC T4 Gc						
IECEx approvals	DEK 11.0032X: Ex nA IIC T4 Gc						
Approvals	CSA, VdS, UL, GOST	CSA, VdS, UL, GOST	CSA, VdS, UL, GOST	VdS, UL, GOST	CSA, VdS, UL, GOST	CSA, VdS, UL, GOST	CSA, VdS, UL, GOST

*) For more detailed information, please refer to www.dehn.de/en/sil/ and page 210

Accessories for BLITZDUCTOR® XT LifeCheck® Modules

BXT BAS

Base part as a very space-saving, four-pole, universal feed-through terminal for the insertion of a protection module without signal interruption.



Type	BXT BAS
Part No.	920 300
Colour	yellow

DRC MCM XT

DIN rail mounted device with integrated LifeCheck sensor for condition monitoring of max. 10 LifeCheck-equipped BXT arresters.



Type	DRC MCM XT
Part No.	910 695
Colour	grey

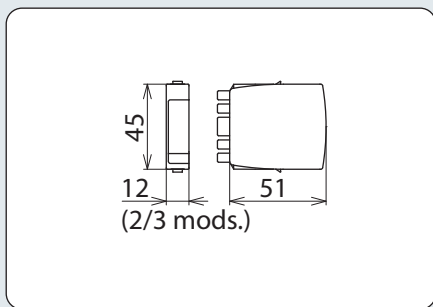
DRC LC M3+

Portable device with LifeCheck sensor for flexible use. Fast and easy testing of LifeCheck-equipped arresters.

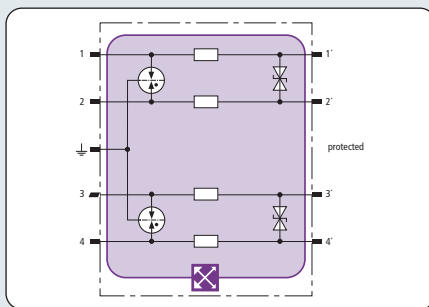


Type	DRC LC M3+
Part No.	910 653
Dimensions of storage case	340 x 275 x 83 mm

For "Accessories for BLITZDUCTOR XT LifeCheck modules", please also refer to pages 188/206/207/208/368/370.



Dimension drawing BXT ML4 BD



Basic circuit diagram BXT ML4 BD



Space-saving combined lightning current and surge arrester module with LifeCheck feature for protecting two pairs of unearthed balanced interfaces. If LifeCheck detects thermal or electrical overload, the arrester has to be replaced. This status is indicated contactlessly by the DEHNrecord LC / MCM reader.

- LifeCheck SPD monitoring function
- Optimal protection of two single pairs
- For installation in conformity with the lightning protection zones concept at the boundaries from 0_A – 2 and higher

Type BXT ML4 ...	BD 5	BD 12	BD 24	BD 48	BD 60	BD 180
Part No.	920 340	920 342	920 344	920 345	920 346	920 347
SPD class	TYPE 1P1	TYPE 1P1	TYPE 1P1	TYPE 1P1	TYPE 1P1	TYPE 1P2
SPD monitoring system	LifeCheck	LifeCheck	LifeCheck	LifeCheck	LifeCheck	LifeCheck
Nominal voltage (U _N)	5 V	12 V	24 V	48 V	60 V	180 V
Max. continuous operating d.c. voltage (U _C)	6.0 V	15 V	33 V	54 V	70 V	180 V
Max. continuous operating a.c. voltage (U _C)	4.2 V	10.6 V	23.3 V	38.1 V	49.5 V	127 V
Nominal current at 45°C (I _N)	1.0 A	1.0 A	1.0 A	1.0 A	1.0 A	0.75 A
D1 Total lightning impulse current (10/350 μs) (I _{imp})	10 kA	10 kA	10 kA	10 kA	10 kA	10 kA
D1 Lightning impulse current (10/350 μs) per line (I _{imp})	2.5 kA	2.5 kA	2.5 kA	2.5 kA	2.5 kA	2.5 kA
C2 Total nominal discharge current (8/20 μs) (I _n)	20 kA	20 kA	20 kA	20 kA	20 kA	20 kA
C2 Nominal discharge current (8/20 μs) per line (I _n)	10 kA	10 kA	10 kA	10 kA	10 kA	10 kA
Voltage protection level line-line for I _{imp} D1 (U _p)	≤ 25 V	≤ 26 V	≤ 52 V	≤ 80 V	≤ 110 V	≤ 270 V
Voltage protection level line-PG for I _{imp} D1 (U _p)	≤ 550 V	≤ 550 V	≤ 550 V	≤ 550 V	≤ 550 V	≤ 550 V
Voltage protection level line-line at 1 kV/μs C3 (U _p)	≤ 9 V	≤ 19 V	≤ 45 V	≤ 70 V	≤ 90 V	≤ 250 V
Voltage protection level line-PG at 1 kV/μs C3 (U _p)	≤ 550 V	≤ 550 V	≤ 550 V	≤ 550 V	≤ 550 V	≤ 550 V
Series impedance per line	1.0 ohm	1.0 ohm	1.0 ohm	1.0 ohm	1.0 ohm	1.8 ohms
Cut-off frequency line-line (f _G)	1.0 MHz	2.8 MHz	7.8 MHz	8.7 MHz	11.0 MHz	25.0 MHz
Capacitance line-line (C)	≤ 5.4 nF	≤ 2.0 nF	≤ 1.0 nF	≤ 0.7 nF	≤ 500 pF	≤ 240 pF
Capacitance line-PG (C)	≤ 16 pF	≤ 16 pF	≤ 16 pF	≤ 16 pF	≤ 16 pF	≤ 16 pF
Operating temperature range	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C
Degree of protection (with plugged-in protection module)	IP 20	IP 20	IP 20	IP 20	IP 20	IP 20
Pluggable into	base part	base part	base part	base part	base part	base part
Earthing via	base part	base part	base part	base part	base part	base part
Enclosure material	polyamide PA 6.6	polyamide PA 6.6	polyamide PA 6.6	polyamide PA 6.6	polyamide PA 6.6	polyamide PA 6.6
Colour	yellow	yellow	yellow	yellow	yellow	yellow
Test standards	IEC 61643-21 / EN 61643-21, UL 497B					
SIL classification	SIL2 / SIL3 *)					
ATEX approvals	DEKRA 11ATEX0089 X: II 3 G Ex nA IIC T4 Gc					
IECEx approvals	DEK 11.0032X: Ex nA IIC T4 Gc					
Approvals	CSA, UL, VdS, GOST					

*) For more detailed information, please refer to www.dehn.de/en/sil/ and page 210

Accessories for BLITZDUCTOR® XT LifeCheck® Modules

Labelling system BA1-BA15

2x165 adhesive labels for labelling DRC MCM XT monitoring devices with their bus address.

Type	BS BA1 BA15 BXT
Part No.	920 398
Colour	white



Earthing module

For direct earthing of lines connected to the BLITZDUCTOR XT base part.

Type	BXT M4 E
Part No.	920 308
Colour	grey

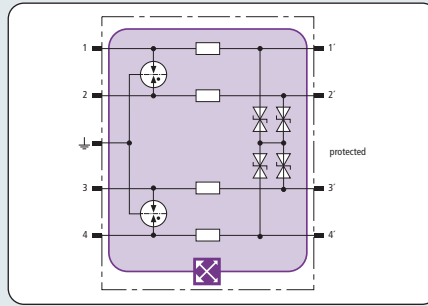


Test / Disconnection module

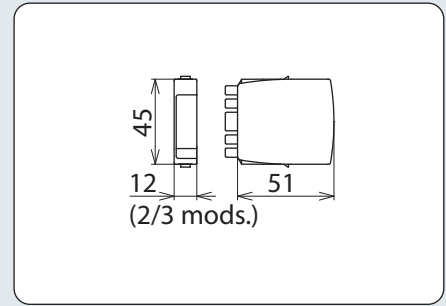
Module for testing lines, plugs into BLITZDUCTOR XT base parts

Type	BXT M4 T
Part No.	920 309
Colour	grey





Basic circuit diagram BXT ML4 BC



Dimension drawing BXT ML4 BC

- LifeCheck SPD monitoring function
- Optimal protection of max. four lines
- For installation in conformity with the lightning protection zones concept at the boundaries from 0_A – 2 and higher

Space-saving combined lightning current and surge arrester module with LifeCheck feature for protecting max. four unearthed single lines with common reference potential. If LifeCheck detects thermal or electrical overload, the arrester has to be replaced. This status is indicated contactlessly by the DEHNrecord LC / MCM reader.

Type	BXT ML4 BC 5	BXT ML4 BC 24
Part No.	920 350	920 354
SPD class	TYPE 1P1	TYPE 1P1
SPD monitoring system	LifeCheck	LifeCheck
Nominal voltage (U _N)	5 V	24 V
Max. continuous operating d.c. voltage (U _C)	6.0 V	33 V
Max. continuous operating a.c. voltage (U _C)	4.2 V	23.3 V
Nominal current at 45°C (I _N)	1.0 A	0.75 A
D1 Total lightning impulse current (10/350 μs) (I _{imp})	10 kA	10 kA
D1 Lightning impulse current (10/350 μs) per line (I _{imp,l})	2.5 kA	2.5 kA
C2 Total nominal discharge current (8/20 μs) (I _n)	20 kA	20 kA
C2 Nominal discharge current (8/20 μs) per line (I _{n,l})	10 kA	10 kA
Voltage protection level line-line for I _{imp} D1 (U _p)	≤ 25 V	≤ 55 V
Voltage protection level line-PG for I _{imp} D1 (U _p)	≤ 550 V	≤ 550 V
Voltage protection level line-line at 1 kV/μs C3 (U _p)	≤ 9 V	≤ 45 V
Voltage protection level line-PG at 1 kV/μs C3 (U _p)	≤ 550 V	≤ 550 V
Series impedance per line	1.0 ohm	1.8 ohms
Cut-off frequency line-line (f _c)	1.0 MHz	5.7 MHz
Capacitance line-line (C)	≤ 5.4 nF	≤ 1.0 nF
Capacitance line-PG (C)	≤ 16 pF	≤ 16 pF
Operating temperature range	-40°C...+80°C	-40°C...+80°C
Degree of protection (with plugged-in protection module)	IP 20	IP 20
Pluggable into	base part	base part
Earthing via	base part	base part
Enclosure material	polyamide PA 6.6	polyamide PA 6.6
Colour	yellow	yellow
Test standards	IEC 61643-21 / EN 61643-21, UL 497B	IEC 61643-21 / EN 61643-21, UL 497B
SIL classification	SIL2 / SIL3 *)	SIL2 / SIL3 *)
ATEX approvals	DEKRA 11ATEX0089 X: II 3 G Ex nA IIC T4 Gc	DEKRA 11ATEX0089 X: II 3 G Ex nA IIC T4 Gc
IECEx approvals	DEK 11.0032X: Ex nA IIC T4 Gc	DEK 11.0032X: Ex nA IIC T4 Gc
Approvals	CSA, VdS, GOST	CSA, VdS, GOST

*) For more detailed information, please refer to www.dehn.de/en/sil/ and page 210

Accessories for BLITZDUCTOR® XT LifeCheck® Modules

BXT BAS

Base part as a very space-saving, four-pole, universal feed-through terminal for the insertion of a protection module without signal interruption.



Type	BXT BAS
Part No.	920 300
Colour	yellow

DRC MCM XT

DIN rail mounted device with integrated LifeCheck sensor for condition monitoring of max. 10 LifeCheck-equipped BXT arresters.



Type	DRC MCM XT
Part No.	910 695
Colour	grey

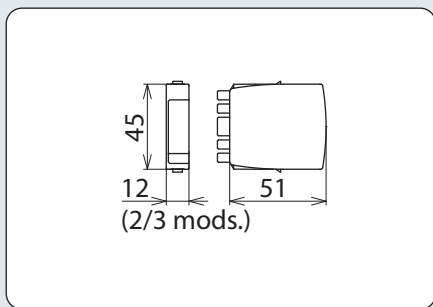
DRC LC M3+

Portable device with LifeCheck sensor for flexible use. Fast and easy testing of LifeCheck-equipped arresters.

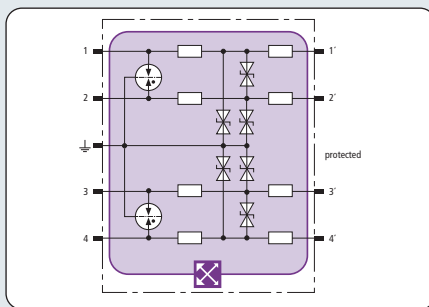


Type	DRC LC M3+
Part No.	910 653
Dimensions of storage case	340 x 275 x 83 mm

For "Accessories for BLITZDUCTOR XT LifeCheck modules", please also refer to pages 188/206/207/208/368/370.



Dimension drawing BXT ML4 BE C



Basic circuit diagram BXT ML4 BE C



Space-saving combined lightning current and surge arrester module with LifeCheck feature for protecting two pairs of balanced interfaces with diode protective circuit at the input, current loops (TTY) and optocoupler inputs. If LifeCheck detects thermal or electrical overload, the arrester has to be replaced. This status is indicated contactlessly by the DEHNrecord LC / MCM reader.

- LifeCheck SPD monitoring function
- Additional decoupling with regard to terminal equipment
- For installation in conformity with the lightning protection zones concept at the boundaries from $0_A - 2$ and higher

Type	BXT ML4 BE C 12	BXT ML4 BE C 24
Part No.	920 362	920 364
SPD class	TYPE 1P1	TYPE 1P1
SPD monitoring system	LifeCheck	LifeCheck
Nominal voltage (U_N)	12 V	24 V
Max. continuous operating d.c. voltage (U_C)	15 V	33 V
Max. continuous operating a.c. voltage (U_C)	10.6 V	23.3 V
Nominal current at 80°C (I_N)	0.1 A	0.1 A
D1 Total lightning impulse current (10/350 μ s) (I_{imp})	10 kA	10 kA
D1 Lightning impulse current (10/350 μ s) per line (I_{imp})	2.5 kA	2.5 kA
C2 Total nominal discharge current (8/20 μ s) (I_n)	20 kA	20 kA
C2 Nominal discharge current (8/20 μ s) per line (I_n)	10 kA	10 kA
Voltage protection level line-line for I_{imp} D1 (U_p)	≤ 30 V	≤ 52 V
Voltage protection level line-PG for I_{imp} D1 (U_p)	≤ 35 V	≤ 66 V
Voltage protection level line-line at 1 kV/ μ s C3 (U_p)	≤ 19 V	≤ 45 V
Voltage protection level line-PG at 1 kV/ μ s C3 (U_p)	≤ 19 V	≤ 45 V
Series impedance per line	13.8 ohms	28.8 ohms
Cut-off frequency line-PG (f_c)	0.85 MHz	1.7 MHz
Capacitance line-line (C)	≤ 3.2 nF	≤ 1.5 nF
Capacitance line-PG (C)	≤ 3.2 nF	≤ 1.5 nF
Operating temperature range	-40°C ... +80°C	-40°C...+80°C
Degree of protection (with plugged-in protection module)	IP 20	IP 20
Pluggable into	base part	base part
Earthing via	base part	base part
Enclosure material	polyamide PA 6.6	polyamide PA 6.6
Colour	yellow	yellow
Test standards	IEC 61643-21 / EN 61643-21	IEC 61643-21 / EN 61643-21, UL 497B
SIL classification	SIL2 / SIL3 *)	SIL2 / SIL3 *)
ATEX approvals	DEKRA 11ATEX0089 X: II 3 G Ex nA IIC T4 Gc	DEKRA 11ATEX0089 X: II 3 G Ex nA IIC T4 Gc
IECEx approvals	DEK 11.0032X: Ex nA IIC T4 Gc	DEK 11.0032X: Ex nA IIC T4 Gc
Approvals	GOST	CSA, VdS, GOST

*) For more detailed information, please refer to www.dehn.de/en/sil/ and page 210

Accessories for BLITZDUCTOR® XT LifeCheck® Modules

Labelling system BA1-BA15

2x165 adhesive labels for labelling DRC MCM XT monitoring devices with their bus address.

Type	BS BA1 BA15 BXT
Part No.	920 398
Colour	white



Earthing module

For direct earthing of lines connected to the BLITZDUCTOR XT base part.

Type	BXT M4 E
Part No.	920 308
Colour	grey



Test / Disconnection module

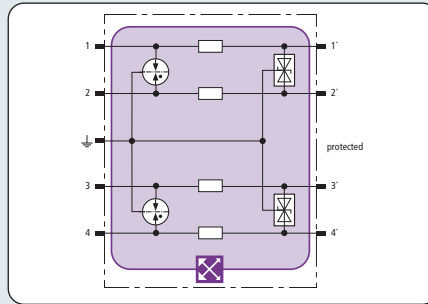
Module for testing lines, plugs into BLITZDUCTOR XT base parts

Type	BXT M4 T
Part No.	920 309
Colour	grey

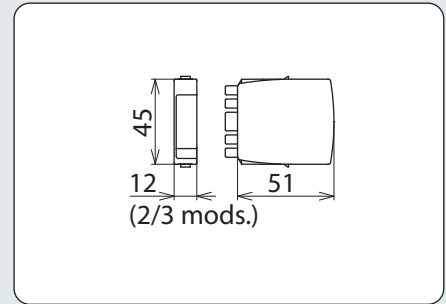


BXT ML4 BE HF 5

Pluggable DIN Rail Mounted SPDs



Basic circuit diagram BXT ML4 BE HF



Dimension drawing BXT ML4 BE HF

- LifeCheck SPD monitoring function
- Optimal protection of four single lines
- For installation in conformity with the lightning protection zones concept at the boundaries from 0_A – 2 and higher

Space-saving combined lightning current and surge arrester module with LifeCheck feature for protecting four single lines with common reference potential as well as high-frequency transmissions which are not galvanically isolated. If LifeCheck detects thermal or electrical overload, the arrester has to be replaced. This status is indicated contactlessly by the DEHNrecord LC / MCM reader.

Type	BXT ML4 BE HF 5
Part No.	920 370
SPD class	TYPE 1 P1
SPD monitoring system	LifeCheck
Nominal voltage (U _N)	5 V
Max. continuous operating d.c. voltage (U _C)	6.0 V
Max. continuous operating a.c. voltage (U _C)	4.2 V
Nominal current at 45°C (I _N)	1.0 A
D1 Total lightning impulse current (10/350 µs) (I _{imp})	10 kA
D1 Lightning impulse current (10/350 µs) per line (I _{imp})	2.5 kA
C2 Total nominal discharge current (8/20 µs) (I _n)	20 kA
C2 Nominal discharge current (8/20 µs) per line (I _n)	10 kA
Voltage protection level line-line for I _{imp} D1 (U _p)	≤ 26 V
Voltage protection level line-PG for I _{imp} D1 (U _p)	≤ 40 V
Voltage protection level line-line at 1 kV/µs C3 (U _p)	≤ 11 V
Voltage protection level line-PG at 1 kV/µs C3 (U _p)	≤ 11 V
Series impedance per line	1.0 ohm
Cut-off frequency line-PG (f _c)	100.0 MHz
Capacitance line-line (C)	≤ 20 pF
Capacitance line-PG (C)	≤ 25 pF
Operating temperature range	-40°C...+80°C
Degree of protection (with plugged-in protection module)	IP 20
Pluggable into	base part
Earthing via	base part
Enclosure material	polyamide PA 6.6
Colour	yellow
Test standards	IEC 61643-21 / EN 61643-21, UL 497B
SIL classification	SIL2 *)
ATEX approvals	DEKRA 11ATEX0089 X: II 3 G Ex nA IIC T4 Gc
IECEX approvals	DEK 11.0032X: Ex nA IIC T4 Gc
Approvals	CSA, VdS, UL, GOST

*) For more detailed information, please refer to www.dehn.de/en/sil/ and page 210

Accessories for BLITZDUCTOR® XT LifeCheck® Modules

BXT BAS

Base part as a very space-saving, four-pole, universal feed-through terminal for the insertion of a protection module without signal interruption.



Type	BXT BAS
Part No.	920 300
Colour	yellow

DRC MCM XT

DIN rail mounted device with integrated LifeCheck sensor for condition monitoring of max. 10 LifeCheck-equipped BXT arresters.



Type	DRC MCM XT
Part No.	910 695
Colour	grey

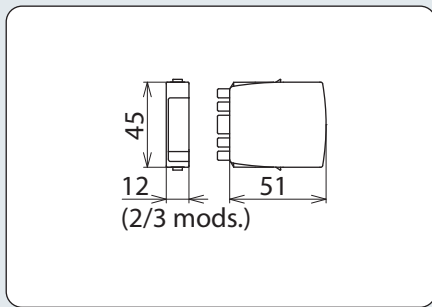
DRC LC M3+

Portable device with LifeCheck sensor for flexible use. Fast and easy testing of LifeCheck-equipped arresters.

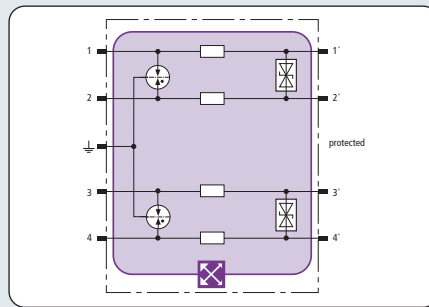


Type	DRC LC M3+
Part No.	910 653
Dimensions of storage case	340 x 275 x 83 mm

For "Accessories for BLITZDUCTOR XT LifeCheck modules", please also refer to pages 188/206/207/208/368/370.



Dimension drawing BXT ML4 BD HF



Basic circuit diagram BXT ML4 BD HF



Space-saving combined lightning current and surge arrester module with LifeCheck feature for protecting two pairs in unearthed high-frequency bus systems or video transmission systems. If LifeCheck detects thermal or electrical overload, the arrester has to be replaced. This status is indicated contactlessly by the DEHNrecord LC / MCM reader.

- LifeCheck SPD monitoring function
- Minimal signal interference
- For installation in conformity with the lightning protection zones concept at the boundaries from 0_A – 2 and higher

Type	BXT ML4 BD HF 5	BXT ML4 BD HF 24
Part No.	920 371	920 375
SPD class	TYPE 1P1	TYPE 1P1
SPD monitoring system	LifeCheck	LifeCheck
Nominal voltage (U _N)	5 V	24 V
Max. continuous operating d.c. voltage (U _C)	6.0 V	33 V
Max. continuous operating a.c. voltage (U _C)	4.2 V	23.3 V
Nominal current at 45°C (I _N)	1.0 A	1.0 A
D1 Total lightning impulse current (10/350 μs) (I _{imp})	10 kA	10 kA
D1 Lightning impulse current (10/350 μs) per line (I _{imp})	2.5 kA	2.5 kA
C2 Total nominal discharge current (8/20 μs) (I _n)	20 kA	20 kA
C2 Nominal discharge current (8/20 μs) per line (I _n)	10 kA	10 kA
Voltage protection level line-line for I _{imp} D1 (U _p)	≤ 25 V	≤ 65 V
Voltage protection level line-PG for I _{imp} D1 (U _p)	≤ 550 V	≤ 550 V
Voltage protection level line-line at 1 kV/μs C3 (U _p)	≤ 11 V	≤ 47 V
Voltage protection level line-PG at 1 kV/μs C3 (U _p)	≤ 550 V	≤ 550 V
Series impedance per line	1.0 ohm	1.0 ohm
Cut-off frequency line-line (f _G)	100.0 MHz	100,0 MHz
Capacitance line-line (C)	≤ 25 pF	≤ 25 pF
Capacitance line-PG (C)	≤ 16 pF	≤ 16 pF
Operating temperature range	-40°C...+80°C	-40°C...+80°C
Degree of protection (with plugged-in protection module)	IP 20	IP 20
Pluggable into	base part	base part
Earthing via	base part	base part
Enclosure material	polyamide PA 6.6	polyamide PA 6.6
Colour	yellow	yellow
Test standards	IEC 61643-21 / EN 61643-21, UL 497B	IEC 61643-21 / EN 61643-21, UL 497B
SIL classification	SIL2 *)	SIL2 *)
ATEX approvals	DEKRA 11ATEX0089 X: II 3 G Ex nA IIC T4 Gc	DEKRA 11ATEX0089 X: II 3 G Ex nA IIC T4 Gc
IECEx approvals	DEK 11.0032X: Ex nA IIC T4 Gc	DEK 11.0032X: Ex nA IIC T4 Gc
Approvals	CSA, VdS, UL, GOST	CSA, VdS, UL, GOST

*) For more detailed information, please refer to www.dehn.de/en/sil/ and page 210

Accessories for BLITZDUCTOR® XT LifeCheck® Modules

Labelling system BA1-BA15

2x165 adhesive labels for labelling DRC MCM XT monitoring devices with their bus address.

Type	BS BA1 BA15 BXT
Part No.	920 398
Colour	white



Earthing module

For direct earthing of lines connected to the BLITZDUCTOR XT base part.

Type	BXT M4 E
Part No.	920 308
Colour	grey



Test / Disconnection module

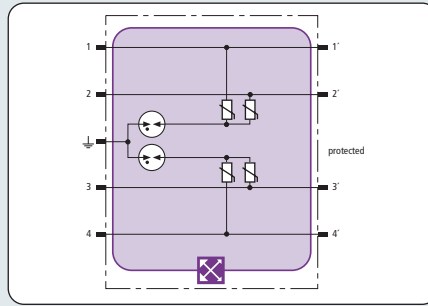
Module for testing lines, plugs into BLITZDUCTOR XT base parts

Type	BXT M4 T
Part No.	920 309
Colour	grey

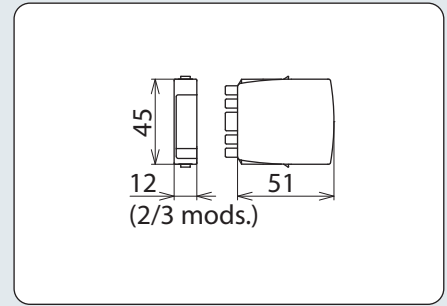


BXT ML4 MY 110 / 250

Pluggable DIN Rail Mounted SPDs



Basic circuit diagram BXT ML4 MY



Dimension drawing BXT ML4 MY

- LifeCheck SPD monitoring function
- Distinctive "Y" circuit
- For installation in conformity with the lightning protection zones concept at the boundaries from $O_B - 2$ and higher

Space-saving surge arrester module with LifeCheck feature for protecting four lines of stranded signal interfaces. If LifeCheck detects thermal or electrical overload, the arrester has to be replaced. This status is indicated contactlessly by the DEHNrecord LC / MCM reader.

Type	BXT ML4 MY 110 **)	BXT ML4 MY 250
Part No.	920 388 NEW!	920 389
SPD class	TYPE 2P2	TYPE 2P3
SPD monitoring system	LifeCheck	LifeCheck
Nominal voltage (U_N)	110 V	250 V
Max. continuous operating d.c. voltage line-line (U_C)	170 V	620 V
Max. continuous operating d.c. voltage line-PG (U_C)	85 V	320 V
Max. continuous operating a.c. voltage line-line (U_C)	120 V	500 V
Max. continuous operating a.c. voltage line-PG (U_C)	60 V	250 V
Nominal current at 45°C (I_n)	3.0 A	3.0 A
C2 Total nominal discharge current (8/20 μ s) (I_n)	10 kA	10 kA
C2 Nominal discharge current (8/20 μ s) per line (I_n)	2.5 kA	2.5 kA
Voltage protection level line-line at 1 kV/ μ s C3 (U_p)	≤ 300 V	≤ 1100 V
Voltage protection level line-PG at 1 kV/ μ s C3 (U_p)	≤ 700 V	≤ 1200 V
Cut-off frequency line-line (f_c)	—	20.0 MHz
Capacitance line-line (C)	≤ 1.5 nF	≤ 300 pF
Capacitance line-PG (C)	≤ 16 pF	≤ 16 pF
Operating temperature range	-40°C...+80°C	-40°C...+80°C
Degree of protection (with plugged-in protection module)	IP 20	IP 20
Pluggable into	base part	base part
Earthing via	base part	base part
Enclosure material	polyamide PA 6.6	polyamide PA 6.6
Colour	yellow	yellow
Test standards	IEC 61643-21 / EN 61643-21	IEC 61643-21 / EN 61643-21
SIL classification	—	SIL2 *)
Approvals	—	GOST

*) For more detailed information, please visit www.dehn.de/en/sil/ and page 210

**) Presumably available in the second quarter 2012

Accessories for BLITZDUCTOR® XT LifeCheck® Modules

BXT BAS

Base part as a very space-saving, four-pole, universal feed-through terminal for the insertion of a protection module without signal interruption.



Type	BXT BAS
Part No.	920 300
Colour	yellow

DRC MCM XT

DIN rail mounted device with integrated LifeCheck sensor for condition monitoring of max. 10 LifeCheck-equipped BXT arresters.



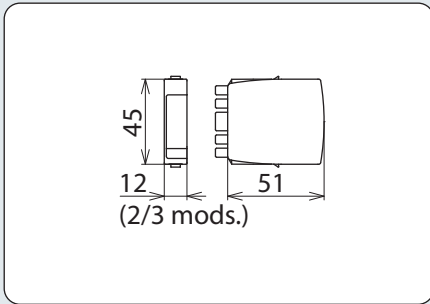
Type	DRC MCM XT
Part No.	910 695
Colour	grey

DRC LC M3+

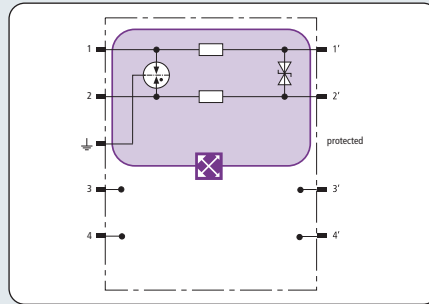
Portable device with LifeCheck sensor for flexible use. Fast and easy testing of LifeCheck-equipped arresters.



Type	DRC LC M3+
Part No.	910 653
Dimensions of storage case	340 x 275 x 83 mm



Dimension drawing BXT ML2 BD



Basic circuit diagram BXT ML2 BD



- LifeCheck SPD monitoring function
- Optimal protection of one pair
- For installation in conformity with the lightning protection zones concept at the boundaries from 0_A – 2 and higher

Space-saving combined lightning current and surge arrester module with LifeCheck feature for protecting one pair of unearthed balanced interfaces. If LifeCheck detects thermal or electrical overload, the arrester has to be replaced. This status is indicated contactlessly by the DEHNrecord LC / MCM reader.

Type	BXT ML2 BD 180
Part No.	920 247
SPD class	TYPE 1P2
SPD monitoring system	LifeCheck
Nominal voltage (U _N)	180 V
Max. continuous operating d.c. voltage (U _C)	180 V
Max. continuous operating a.c. voltage (U _C)	127 V
Nominal current at 45°C (I _N)	0.75 A
D1 Total lightning impulse current (10/350 μs) (I _{imp})	5 kA
D1 Lightning impulse current (10/350 μs) per line (I _{imp})	2.5 kA
C2 Total nominal discharge current (8/20 μs) (I _n)	20 kA
C2 Nominal discharge current (8/20 μs) per line (I _n)	10 kA
Voltage protection level line-line for I _{imp} D1 (U _p)	≤ 270 V
Voltage protection level line-PG for I _{imp} D1 (U _p)	≤ 550 V
Voltage protection level line-line at 1 kV/μs C3 (U _p)	≤ 250 V
Voltage protection level line-PG at 1 kV/μs C3 (U _p)	≤ 550 V
Series impedance per line	1.8 ohms
Cut-off frequency line-line (f _G)	25.0 MHz
Capacitance line-line (C)	≤ 240 pF
Capacitance line-PG (C)	≤ 16 pF
Operating temperature range	-40°C...+80°C
Degree of protection (with plugged-in protection module)	IP 20
Pluggable into	base part
Earthing via	base part
Enclosure material	polyamide PA 6.6
Colour	yellow
Test standards	IEC 61643-21 / EN 61643-21, UL 497B
SIL classification	SIL2 / SIL3 *)
for more details see: www.dehn.de/en/sil/	
ATEX approvals	DEKRA 11ATEX0089 X: II 3 G Ex nA IIC T4 Gc
IECEx approvals	DEK 11.0032X: Ex nA IIC T4 Gc
Approvals	CSA, GOST, VdS

*) For more detailed information, please refer to www.dehn.de/en/sil/ and page 210

Accessories for BLITZDUCTOR® XT LifeCheck® Modules

Labelling system BA1-BA15

2x165 adhesive labels for labelling DRC MCM XT monitoring devices with their bus address.

Type	BS BA1 BA15 BXT
Part No.	920 398
Colour	white



Earthing module

For direct earthing of lines connected to the BLITZDUCTOR XT base part.

Type	BXT M4 E
Part No.	920 308
Colour	grey

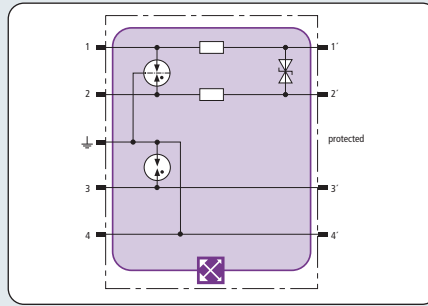


Test / Disconnection module

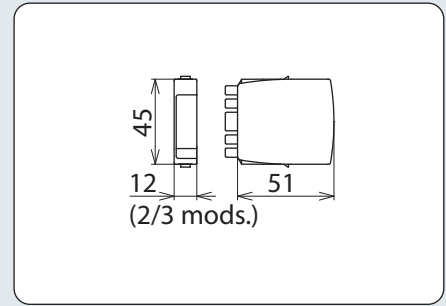
Module for testing lines, plugs into BLITZDUCTOR XT base parts

Type	BXT M4 T
Part No.	920 309
Colour	grey





Basic circuit diagram BXT ML2 BD



Dimension drawing BXT ML2 BD

- LifeCheck SPD monitoring function
- Optimal protection of one pair and line shield
- For installation in conformity with the lightning protection zones concept at the boundaries from 0_A – 2 and higher

Space-saving combined lightning current and surge arrester module with LifeCheck feature for protecting one pair of unearthed balanced interfaces with direct or indirect shield earthing. If LifeCheck detects thermal or electrical overload, the arrester has to be replaced. This status is indicated contactlessly by the DEHNrecord LC / MCM reader.

Type	BXT ML2 BD S 5	BXT ML2 BD S 12	BXT ML2 BD S 24	BXT ML2 BD S 48
Part No.	920 240	920 242	920 244	920 245
SPD class	TYPE 1P1	TYPE 1P1	TYPE 1P1	TYPE 1P1
SPD monitoring system	LifeCheck	LifeCheck	LifeCheck	LifeCheck
Nominal voltage (U _N)	5 V	12 V	24 V	48 V
Max. continuous operating d.c. voltage (U _C)	6.0 V	15 V	33 V	54 V
Max. continuous operating a.c. voltage (U _C)	4.2 V	10.6 V	23.3 V	38.1 V
Nominal current at 45°C (I _N)	1.0 A	1.0 A	1.0 A	1.0 A
D1 Total lightning impulse current (10/350 μs) (I _{imp})	9 kA	9 kA	9 kA	9 kA
D1 Lightning impulse current (10/350 μs) per line (I _{imp})	2.5 kA	2.5 kA	2.5 kA	2.5 kA
C2 Total nominal discharge current (8/20 μs) (I _n)	20 kA	20 kA	20 kA	20 kA
C2 Nominal discharge current (8/20 μs) per line (I _n)	10 kA	10 kA	10 kA	10 kA
Voltage protection level line-line for I _{imp} D1 (U _p)	≤ 25 V	≤ 26 V	≤ 52 V	≤ 80 V
Voltage protection level line-PG for I _{imp} D1 (U _p)	≤ 550 V	≤ 550 V	≤ 550 V	≤ 550 V
Voltage protection level line-line at 1 kV/μs C3 (U _p)	≤ 9 V	≤ 19 V	≤ 45 V	≤ 70 V
Voltage protection level line-PG at 1 kV/μs C3 (U _p)	≤ 550 V	≤ 550 V	≤ 550 V	≤ 550 V
Series impedance per line	1.0 ohm	1.0 ohm	1.0 ohm	1.0 ohm
Cut-off frequency line-line (f _c)	1.0 MHz	2.8 MHz	7.8 MHz	8.7 MHz
Capacitance line-line (C)	≤ 5.4 nF	≤ 2.0 nF	≤ 1.0 nF	≤ 0.7 nF
Capacitance line-PG (C)	≤ 25 pF	≤ 25 pF	≤ 25 pF	≤ 25 pF
Operating temperature range	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C
Degree of protection (with plugged-in protection module)	IP 20	IP 20	IP 20	IP 20
Pluggable into	base part	base part	base part	base part
Earthing via	base part	base part	base part	base part
Enclosure material	polyamide PA 6.6	polyamide PA 6.6	polyamide PA 6.6	polyamide PA 6.6
Colour	yellow	yellow	yellow	yellow
Test standards	IEC 61643-21 / EN 61643-21	IEC 61643-21 / EN 61643-21	IEC 61643-21 / EN 61643-21	IEC 61643-21 / EN 61643-21
SIL classification	SIL2 / SIL3 *)	SIL2 / SIL3 *)	SIL2 / SIL3 *)	SIL2 / SIL3 *)
ATEX approvals	DEKRA 11ATEX0089 X: II 3 G Ex nA IIC T4 Gc	DEKRA 11ATEX0089 X: II 3 G Ex nA IIC T4 Gc	DEKRA 11ATEX0089 X: II 3 G Ex nA IIC T4 Gc	DEKRA 11ATEX0089 X: II 3 G Ex nA IIC T4 Gc
IECEx approvals	DEK 11.0032X: Ex nA IIC T4 Gc	DEK 11.0032X: Ex nA IIC T4 Gc	DEK 11.0032X: Ex nA IIC T4 Gc	DEK 11.0032X: Ex nA IIC T4 Gc
Approvals	CSA, GOST, VdS	CSA, GOST, VdS	CSA, GOST, VdS	CSA, GOST, VdS

*) For more detailed information, please refer to www.dehn.de/en/sil/ and page 210

Accessories for BLITZDUCTOR® XT LifeCheck® Modules

BXT BAS

Base part as a very space-saving, four-pole, universal feed-through terminal for the insertion of a protection module without signal interruption.



Type	BXT BAS
Part No.	920 300
Colour	yellow

DRC MCM XT

DIN rail mounted device with integrated LifeCheck sensor for condition monitoring of max. 10 LifeCheck-equipped BXT arresters.



Type	DRC MCM XT
Part No.	910 695
Colour	grey

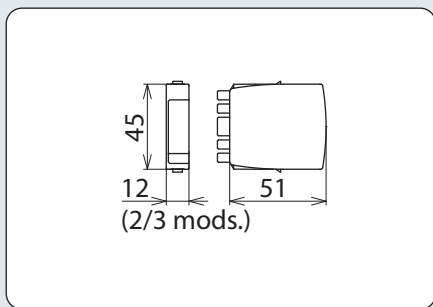
DRC LC M3+

Portable device with LifeCheck sensor for flexible use. Fast and easy testing of LifeCheck-equipped arresters.

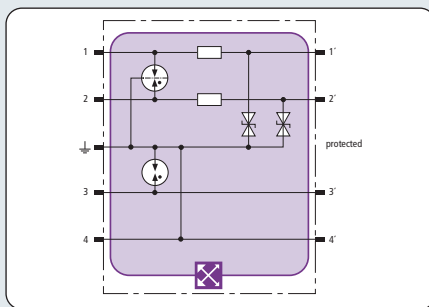


Type	DRC LC M3+
Part No.	910 653
Dimensions of storage case	340 x 275 x 83 mm

For "Accessories for BLITZDUCTOR XT LifeCheck modules", please also refer to pages 188/206/207/208/368/370.



Dimension drawing BXT ML2 BE



Basic circuit diagram BXT ML2 BE



Space-saving combined lightning current and surge arrester module with LifeCheck feature for protecting two single lines with common reference potential as well as unbalanced interfaces, with direct or indirect shield earthing. If LifeCheck detects thermal or electrical overload, the arrester has to be replaced. This status is indicated contactlessly by the DEHNrecord LC / MCM reader.

- LifeCheck SPD monitoring function
- Optimal protection of two single lines and line shield
- For use in conformity with the lightning protection zones concept at the boundaries from 0_A – 2 and higher

Type	BXT ML2 BE S 5	BXT ML2 BE S 12	BXT ML2 BE S 24	BXT ML2 BE S 36	BXT ML2 BE S 48
Part No.	920 220	920 222	920 224	920 226 NEW!	920 225
SPD class	TYPE 1P1	TYPE 1P1	TYPE 1P1	TYPE 1P1	TYPE 1P1
SPD monitoring system	LifeCheck	LifeCheck	LifeCheck	LifeCheck	LifeCheck
Nominal voltage (U _N)	5 V	12 V	24 V	36 V	48 V
Max. continuous operating d.c. voltage (U _C)	6.0 V	15 V	33 V	45 V	54 V
Max. continuous operating a.c. voltage (U _C)	4.2 V	10.6 V	23.3 V	31 V	38.1 V
Nominal current at 45°C (I _N)	1.0 A	0.75 A	0.75 A	1.8 A	0.75 A
D1 Total lightning impulse current (10/350 μs) (I _{imp})	9 kA	9 kA	9 kA	9 kA	9 kA
D1 Lightning impulse current (10/350 μs) per line (I _{imp})	2.5 kA	2.5 kA	2.5 kA	2.5 kA	2.5 kA
C2 Total nominal discharge current (8/20 μs) (I _n)	20 kA	20 kA	20 kA	20 kA	20 kA
C2 Nominal discharge current (8/20 μs) per line (I _n)	10 kA	10 kA	10 kA	10 kA	10 kA
Voltage protection level line-line for I _{imp} D1 (U _p)	≤ 29 V	≤ 50 V	≤ 102 V	—	≤ 160 V
Voltage protection level line-PG for I _{imp} D1 (U _p)	≤ 27 V	≤ 37 V	≤ 66 V	≤ 85 V	≤ 95 V
Voltage protection level line-line at 1 kV/μs C3 (U _p)	≤ 18 V	≤ 38 V	≤ 90 V	≤ 112 V	≤ 140 V
Voltage protection level line-PG at 1 kV/μs C3 (U _p)	≤ 9 V	≤ 19 V	≤ 45 V	≤ 56 V	≤ 70 V
Series impedance per line	1.0 ohm	1.8 ohms	1.8 ohms	0.43 ohms	1.8 ohms
Cut-off frequency line-PG (f _c)	1.0 MHz	2.7 MHz	6.8 MHz	3.8 MHz	8.7 MHz
Capacitance line-line (C)	≤ 2.7 nF	≤ 1.0 nF	≤ 0.5 nF	≤ 0.8 nF	≤ 0.35 nF
Capacitance line-PG (C)	≤ 5.4 nF	≤ 2.0 nF	≤ 1.0 nF	≤ 1.6 nF	≤ 0.7 nF
Operating temperature range	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C
Degree of protection (with plugged-in protection module)	IP 20	IP 20	IP 20	IP 20	IP 20
Pluggable into	base part	base part	base part	base part	base part
Earthing via	base part	base part	base part	base part	base part
Enclosure material	polyamide PA 6.6	polyamide PA 6.6	polyamide PA 6.6	polyamide PA 6.6	polyamide PA 6.6
Colour	yellow	yellow	yellow	yellow	yellow
Test standards	IEC 61643-21 / EN 61643-21, UL 497B				
SIL classification	SIL2 / SIL3 *)	SIL2 / SIL3 *)	SIL2 / SIL3 *)	—	SIL2 / SIL3 *)
ATEX approvals	DEKRA 11ATEX0089 X: II 3 G Ex nA IIC T4 Gc	DEKRA 11ATEX0089 X: II 3 G Ex nA IIC T4 Gc	DEKRA 11ATEX0089 X: II 3 G Ex nA IIC T4 Gc	—	DEKRA 11ATEX0089 X: II 3 G Ex nA IIC T4 Gc
IECEx approvals	DEK 11.0032X: Ex nA IIC T4 Gc	DEK 11.0032X: Ex nA IIC T4 Gc	DEK 11.0032X: Ex nA IIC T4 Gc	—	DEK 11.0032X: Ex nA IIC T4 Gc
Approvals	CSA, GOST, VdS	CSA, GOST, VdS	CSA, GOST, VdS	UL, VdS	CSA, UL, GOST, VdS

*) For more detailed information, please refer to www.dehn.de/en/sil/ and page 210

Accessories for BLITZDUCTOR® XT LifeCheck® Modules

Labelling system BA1-BA15

2x165 adhesive labels for labelling DRC MCM XT monitoring devices with their bus address.

Type	BS BA1 BA15 BXT
Part No.	920 398
Colour	white



Earthing module

For direct earthing of lines connected to the BLITZDUCTOR XT base part.

Type	BXT M4 E
Part No.	920 308
Colour	grey



Test / Disconnection module

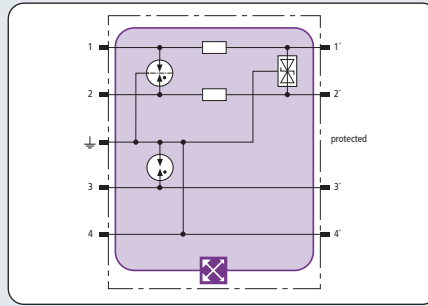
Module for testing lines, plugs into BLITZDUCTOR XT base parts

Type	BXT M4 T
Part No.	920 309
Colour	grey

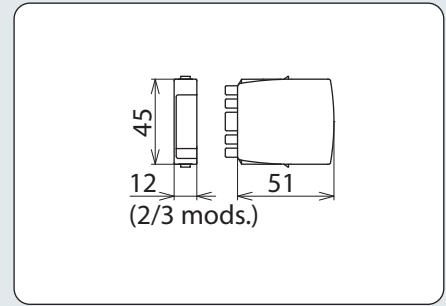


BXT ML2 BE HFS 5

Pluggable DIN Rail Mounted SPDs



Basic circuit diagram BXT ML2 BE HFS



Dimension drawing BXT ML2 BE HFS

- LifeCheck SPD monitoring function
- Optimal protection of one pair and shield
- For installation in conformity with the lightning protection zones concept at the boundaries from 0_A – 2 and higher

Space-saving combined lightning current and surge arrester module with LifeCheck feature for protecting one pair in high-frequency transmissions which are not galvanically isolated; with direct or indirect shield earthing. If LifeCheck detects thermal or electrical overload, the arrester has to be replaced. This status is indicated contactlessly by the DEHNrecord LC / MCM reader.

Type	BXT ML2 BE HFS 5
Part No.	920 270
SPD class	TYPE 1P1
SPD monitoring system	LifeCheck
Nominal voltage (U _N)	5 V
Max. continuous operating d.c. voltage (U _C)	6.0 V
Max. continuous operating a.c. voltage (U _C)	4.2 V
Nominal current at 45°C (I _N)	1.0 A
D1 Total lightning impulse current (10/350 μs) (I _{imp})	9 kA
D1 Lightning impulse current (10/350 μs) per line (I _{imp})	2.5 kA
C2 Total nominal discharge current (8/20 μs) (I _n)	20 kA
C2 Nominal discharge current (8/20 μs) per line (I _n)	10 kA
Voltage protection level line-line for I _{imp} D1 (U _p)	≤ 26 V
Voltage protection level line-PG for I _{imp} D1 (U _p)	≤ 40 V
Voltage protection level line-line at 1 kV/μs C3 (U _p)	≤ 11 V
Voltage protection level line-PG at 1 kV/μs C3 (U _p)	≤ 11 V
Series impedance per line	1.0 ohm
Cut-off frequency line-PG (f _c)	100,0 MHz
Capacitance line-line (C)	≤ 20 pF
Capacitance line-PG (C)	≤ 30 pF
Operating temperature range	-40°C...+80°C
Degree of protection (with plugged-in protection module)	IP 20
Pluggable into	base part
Earthing via	base part
Enclosure material	polyamide PA 6.6
Colour	yellow
Test standards	IEC 61643-21 / EN 61643-21, UL 497B
SIL classification	SIL2 *)
ATEX approvals	DEKRA 11ATEX0089 X: II 3 G Ex nA IIC T4 Gc
IECEX approvals	DEK 11.0032X: Ex nA IIC T4 Gc
Approvals	CSA, UL, GOST, Vds

*) For more detailed information, please refer to www.dehn.de/en/sil/ and page 210

Accessories for BLITZDUCTOR® XT LifeCheck® Modules

BXT BAS

Base part as a very space-saving, four-pole, universal feed-through terminal for the insertion of a protection module without signal interruption.



Type	BXT BAS
Part No.	920 300
Colour	yellow

DRC MCM XT

DIN rail mounted device with integrated LifeCheck sensor for condition monitoring of max. 10 LifeCheck-equipped BXT arresters.



Type	DRC MCM XT
Part No.	910 695
Colour	grey

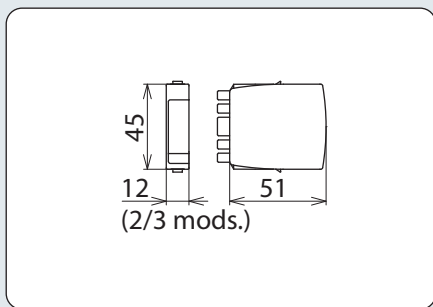
DRC LC M3+

Portable device with LifeCheck sensor for flexible use. Fast and easy testing of LifeCheck-equipped arresters.

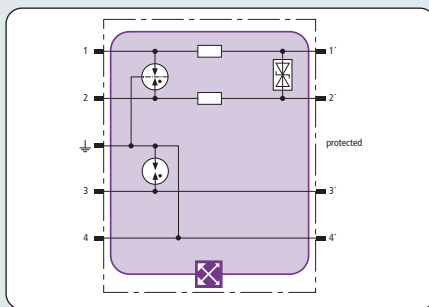


Type	DRC LC M3+
Part No.	910 653
Dimensions of storage case	340 x 275 x 83 mm

For "Accessories for BLITZDUCTOR XT LifeCheck modules", please also refer to pages 188/206/207/208/368/370.



Dimension drawing BXT ML2 BD HFS



Basic circuit diagram BXT ML2 BD HFS



Space-saving combined lightning current and surge arrester module with LifeCheck feature for protecting one pair in unearthed high-frequency bus systems or video transmission systems, with direct or indirect shield earthing. If LifeCheck detects thermal or electrical overload, the arrester has to be replaced. This status is indicated contactlessly by the DEHNrecord LC / MCM reader.

- LifeCheck SPD monitoring function
- Minimal signal interference
- For installation in conformity with the lightning protection zones concept at the boundaries from 0_A – 2 and higher

Type	BXT ML2 BD HFS 5
Part No.	920 271
SPD class	TYPE 1P1
SPD monitoring system	LifeCheck
Nominal voltage (U _N)	5 V
Max. continuous operating d.c. voltage (U _C)	6.0 V
Max. continuous operating a.c. voltage (U _C)	4.2 V
Nominal current at 45°C (I _N)	1.0 A
D1 Total lightning impulse current (10/350 μs) (I _{imp})	9 kA
D1 Lightning impulse current (10/350 μs) per line (I _{imp})	2.5 kA
C2 Total nominal discharge current (8/20 μs) (I _n)	20 kA
C2 Nominal discharge current (8/20 μs) per line (I _n)	10 kA
Voltage protection level line-line for I _{imp} D1 (U _p)	≤ 25 V
Voltage protection level line-PG for I _{imp} D1 (U _p)	≤ 550 V
Voltage protection level line-line at 1 kV/μs C3 (U _p)	≤ 11 V
Voltage protection level line-PG at 1 kV/μs C3 (U _p)	≤ 550 V
Series impedance per line	1.0 ohm
Cut-off frequency line-line (f _G)	100.0 MHz
Capacitance line-line (C)	≤ 25 pF
Capacitance line-PG (C)	≤ 25 pF
Operating temperature range	-40°C...+80°C
Degree of protection (with plugged-in protection module)	IP 20
Pluggable into	base part
Earthing via	base part
Enclosure material	polyamide PA 6.6
Colour	yellow
Test standards	IEC 61643-21 / EN 61643-21, UL 497B
SIL classification	SIL2 *)
ATEX approvals	DEKRA 11ATEX0089 X: II 3 G Ex nA IIC T4 Gc
IECEx approvals	DEK 11.0032X: Ex nA IIC T4 Gc
Approvals	CSA, UL, GOST, Vds

*) For more detailed information, please refer to www.dehn.de/en/sil/ and page 210

Accessories for BLITZDUCTOR® XT LifeCheck® Modules

Labelling system BA1-BA15

2x165 adhesive labels for labelling DRC MCM XT monitoring devices with their bus address.

Type	BS BA1 BA15 BXT
Part No.	920 398
Colour	white



Earthing module

For direct earthing of lines connected to the BLITZDUCTOR XT base part.

Type	BXT M4 E
Part No.	920 308
Colour	grey



Test / Disconnection module

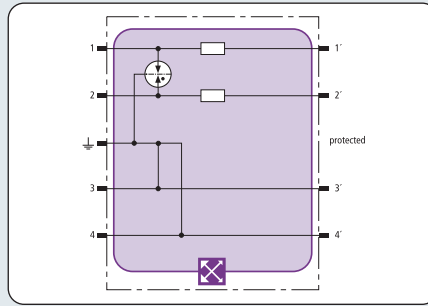
Module for testing lines, plugs into BLITZDUCTOR XT base parts

Type	BXT M4 T
Part No.	920 309
Colour	grey

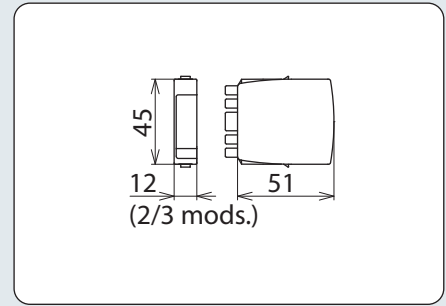


BXT ML2 B 180

Pluggable DIN Rail Mounted SPDs



Basic circuit diagram BXT ML2 B



Dimension drawing BXT ML2 B

- LifeCheck SPD monitoring function
- Two-pole lightning equipotential bonding with four terminals for shield and/or functional earthing
- For installation in conformity with the lightning protection zones concept at the boundaries from $0_A - 1$ and higher

Space-saving, two-pole lightning current arrester module with LifeCheck feature and shield earthing for almost all applications. For use in conjunction with downstream **TYPE 2 Pt** surge arresters or combined lightning current and surge arresters with a lower or equal voltage level. If LifeCheck detects thermal or electrical overload, the arrester has to be replaced. This status is indicated contactlessly by the DEHNrecord LC / MCM reader.

Type	BXT ML2 B 180
Part No.	920 211
SPD class	TYPE 1+
SPD monitoring system	LifeCheck
Nominal voltage (U_N)	180 V
Max. continuous operating d.c. voltage (U_C)	180 V
Max. continuous operating a.c. voltage (U_C)	127 V
Nominal current at 45°C (I_n)	1.2 A
D1 Total lightning impulse current (10/350 μ s) (I_{imp})	10 kA
D1 Lightning impulse current (10/350 μ s) per line (I_{imp})	2.5 kA
C2 Total nominal discharge current (8/20 μ s) (I_n)	20 kA
C2 Nominal discharge current (8/20 μ s) per line (I_n)	10 kA
Voltage protection level line-line for I_{imp} D1 (U_p)	≤ 600 V
Voltage protection level line-PG for I_{imp} D1 (U_p)	≤ 550 V
Voltage protection level line-line at 1 kV/ μ s C3 (U_p)	≤ 650 V
Voltage protection level line-PG at 1 kV/ μ s C3 (U_p)	≤ 550 V
Series impedance per line	0.4 ohms
Capacitance line-line (C)	≤ 16 pF
Capacitance line-PG (C)	≤ 16 pF
Operating temperature range	-40°C...+80°C
Degree of protection (with plugged-in protection module)	IP 20
Pluggable into	base part
Earthing via	base part
Enclosure material	polyamide PA 6.6
Colour	yellow
Test standards	IEC 61643-21 / EN 61643-21, UL 497B
SIL classification	SIL2 / SIL3 *)
ATEX approvals	DEKRA 11ATEX0089 X: II 3 G Ex nA IIC T4 Gc
IECEX approvals	DEK 11.0032X: Ex nA IIC T4 Gc
Approvals	CSA, GOST, VdS

*) For more detailed information, please refer to www.dehn.de/en/sil/ and page 210

Accessories for BLITZDUCTOR® XT LifeCheck® Modules

BXT BAS

Base part as a very space-saving, four-pole, universal feed-through terminal for the insertion of a protection module without signal interruption.



Type	BXT BAS
Part No.	920 300
Colour	yellow

DRC MCM XT

DIN rail mounted device with integrated LifeCheck sensor for condition monitoring of max. 10 LifeCheck-equipped BXT arresters.



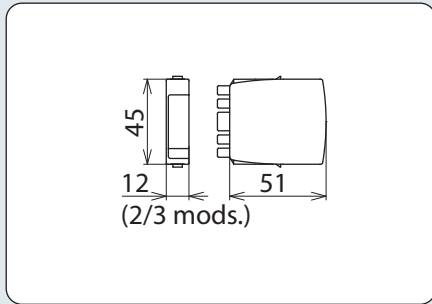
Type	DRC MCM XT
Part No.	910 695
Colour	grey

DRC LC M3+

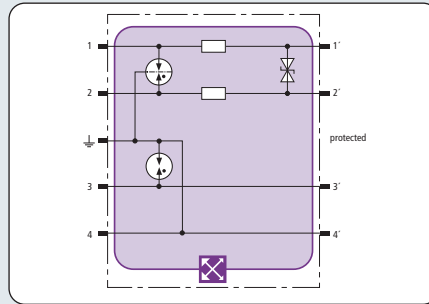
Portable device with LifeCheck sensor for flexible use. Fast and easy testing of LifeCheck-equipped arresters.



Type	DRC LC M3+
Part No.	910 653
Dimensions of storage case	340 x 275 x 83 mm



Dimension drawing BXT ML2 BD



Basic circuit diagram BXT ML2 BD



Space-saving combined lightning current and surge arrester module with LifeCheck feature for protecting one pair of unearthed balanced interfaces, which specifically fulfils the requirements of Dupline buses, direct or indirect shield earthing. If LifeCheck detects thermal or electrical overload, the arrester has to be replaced. This status is indicated contactlessly by the DEHNrecord LC / MCM reader.

- Suitable for Dupline buses
- LifeCheck SPD monitoring function
- Effective protection of one pair and shield
- For installation in conformity with the lightning protection zones concept at the boundaries from $0_A - 2$ and higher

Type	BXT ML2 BD DL S 15
Part No.	920 243
SPD class	TYPE 1 P1
SPD monitoring system	LifeCheck
Nominal voltage (U_N)	15 V
Max. continuous operating d.c. voltage (U_C)	17 V
Max. continuous operating a.c. voltage (U_C)	12 V
Nominal current at 70° C (I_N)	0.4 A
D1 Total lightning impulse current (10/350 μ s) (I_{imp})	9 kA
D1 Lightning impulse current (10/350 μ s) per line (I_{imp})	2.5 kA
C2 Total nominal discharge current (8/20 μ s) (I_n)	20 kA
C2 Nominal discharge current (8/20 μ s) per line (I_n)	10 kA
Voltage protection level line-line for I_{imp} D1 (U_p)	≤ 30 V
Voltage protection level line-PG for I_{imp} D1 (U_p)	≤ 550 V
Voltage protection level line-line at 1 kV/ μ s C3 (U_p)	≤ 24 V
Voltage protection level line-PG at 1 kV/ μ s C3 (U_p)	≤ 550 V
Series impedance per line	2.2 ohms
Cut-off frequency line-line (f_c)	2.7 MHz
Capacitance line-line (C)	≤ 1.9 nF
Capacitance line-PG (C)	≤ 25 pF
Operating temperature range	-40°C...+80°C
Degree of protection (with plugged-in protection module)	IP 20
Pluggable into	base part
Earthing via	base part
Enclosure material	polyamide PA 6.6
Colour	yellow
Test standards	IEC 61643-21 / EN 61643-21
SIL classification	SIL2 / SIL3 *)
ATEX approvals	DEKRA 11ATEX0089 X: II 3 G Ex nA IIC T4 Gc
IECEx approvals	DEK 11.0032X: Ex nA IIC T4 Gc
Approvals	GOST

*) For more detailed information, please refer to www.dehn.de/en/sil/ and page 210

Accessories for BLITZDUCTOR® XT LifeCheck® Modules

Labelling system BA1-BA15

2x165 adhesive labels for labelling DRC MCM XT monitoring devices with their bus address.

Type	BS BA1 BA15 BXT
Part No.	920 398
Colour	white



Earthing module

For direct earthing of lines connected to the BLITZDUCTOR XT base part.

Type	BXT M4 E
Part No.	920 308
Colour	grey



Test / Disconnection module

Module for testing lines, plugs into BLITZDUCTOR XT base parts

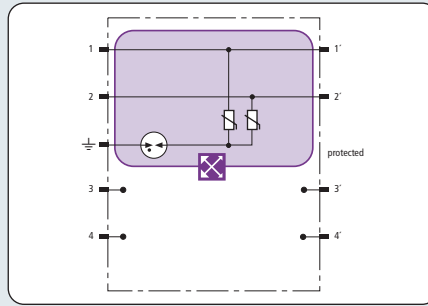
Type	BXT M4 T
Part No.	920 309
Colour	grey



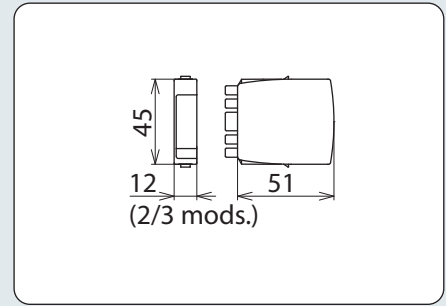
BXT ML2 MY 250

Pluggable DIN Rail Mounted SPDs

NEW



Basic circuit diagram BXT ML2 MY



Dimension drawing BXT ML2 MY

- LifeCheck SPD monitoring
- Distinctive "Y" circuit
- For installation in conformity with the lightning protection zones concept at the boundaries from $O_B - 2$ and higher

Space-saving surge arrester module with LifeCheck feature for protecting two lines of stranded signal interfaces up to 250 V a.c. If LifeCheck detects thermal or electrical overload, the arrester has to be replaced. This status is indicated contactlessly by the DEHNrecord LC / MCM reader.

Type	BXT ML2 MY 250
Part No.	920 289
SPD class	TYPE 2 P3
SPD monitoring system	LifeCheck
Nominal voltage (U_N)	250 V
Max. continuous operating d.c. voltage line-line (U_C)	620 V
Max. continuous operating d.c. voltage line-PG (U_C)	320 V
Max. continuous operating a.c. voltage line-line (U_C)	500 V
Max. continuous operating a.c. voltage line-PG (U_C)	250 V
Nominal current at 45°C (I_n)	3.0 A
C2 Total nominal discharge current (8/20 μ s) (I_n)	5 kA
C2 Nominal discharge current (8/20 μ s) per line (I_n)	2.5 kA
Voltage protection level line-line at 1 kV/ μ s C3 (U_p)	≤ 1100 V
Voltage protection level line-PG at 1 kV/ μ s C3 (U_p)	≤ 1200 V
Cut-off frequency line-line (f_C)	20.0 MHz
Capacitance line-line (C)	≤ 300 pF
Capacitance line-PG (C)	≤ 16 pF
Operating temperature range	-40°C...+80°C
Degree of protection (with plugged-in protection module)	IP 20
Pluggable into	base part
Earthing via	base part
Enclosure material	polyamide PA 6.6
Colour	yellow
Test standards	IEC 61643-21 / EN 61643-21

*) For more detailed information, please refer to www.dehn.de/en/sil/ and page 210

Accessories for BLITZDUCTOR® XT LifeCheck® Modules

BXT BAS

Base part as a very space-saving, four-pole, universal feed-through terminal for the insertion of a protection module without signal interruption.



Type	BXT BAS
Part No.	920 300
Colour	yellow

DRC MCM XT

DIN rail mounted device with integrated LifeCheck sensor for condition monitoring of max. 10 LifeCheck-equipped BXT arresters.



Type	DRC MCM XT
Part No.	910 695
Colour	grey

DRC LC M3+

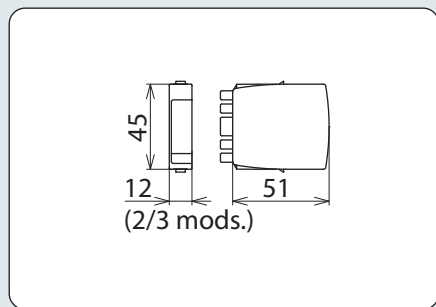
Portable device with LifeCheck sensor for flexible use. Fast and easy testing of LifeCheck-equipped arresters.



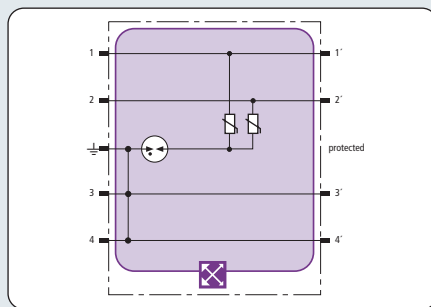
Type	DRC LC M3+
Part No.	910 653
Dimensions of storage case	340 x 275 x 83 mm

For "Accessories for BLITZDUCTOR XT LifeCheck modules", please also refer to pages 188/206/207/208/368/370.

NEW



Dimension drawing BXT ML2 MY E



Basic circuit diagram BXT ML2 MY E



Presumably available in the second quarter 2012

- LifeCheck SPD monitoring
- Distinctive "Y" circuit
- For installation in conformity with the lightning protection concept at the boundaries from 0_B – 2.

Space-saving surge arrester module with LifeCheck feature for protecting two pairs of stranded signal interfaces. If LifeCheck detects thermal or electrical overload, the arrester has to be replaced. This status is indicated contactlessly by the DEHNrecord LC / MCM reader.

Type	BXT ML2 MY E 110
Part No.	920 288
SPD class	TYPE 2 P2
SPD monitoring system	LifeCheck
Nominal voltage (U _N)	110 V
Max. continuous operating d.c. voltage line-line (U _C)	170 V
Max. continuous operating d.c. voltage line-PG (U _C)	85 V
Max. continuous operating a.c. voltage line-line (U _C)	120 V
Max. continuous operating a.c. voltage line-PG (U _C)	60 V
Nominal current at 80°C (I _n)	3.0 A
D1 Total lightning impulse current (10/350 μs) (I _{imp})	0.6 kA
D1 Lightning impulse current (10/350 μs) per line (I _{imp})	0.3 kA
C2 Total nominal discharge current (8/20 μs) (I _n)	5 kA
C2 Nominal discharge current (8/20 μs) per line (I _n)	2.5 kA
Voltage protection level line-line at 1 kV/μs C3 (U _p)	≤ 300 V
Voltage protection level line-PG at 1 kV/μs C3 (U _p)	≤ 700 V
Series impedance per line	0 ohms
Cut-off frequency line-line (f _G)	4.5 MHz
Cut-off frequency line-line (100 ohms) (f _G)	2.2 MHz
Capacitance line-line (C)	≤ 1.5 nF
Capacitance line-PG (C)	≤ 25 pF
Operating temperature range	-40°C...+80°C
Degree of protection (with plugged-in protection module)	IP 20
Pluggable into	base part
Earthing via	base part
Enclosure material	polyamide PA 6.6
Colour	yellow
Test standards	IEC 61643-21 / EN 61643-21

*) For more detailed information, please refer to www.dehn.de/en/sil/ and page 210

Accessories for BLITZDUCTOR® XT LifeCheck® Modules

Labelling system BA1-BA15

2x165 adhesive labels for labelling DRC MCM XT monitoring devices with their bus address.

Type	BS BA1 BA15 BXT
Part No.	920 398
Colour	white



Earthing module

For direct earthing of lines connected to the BLITZDUCTOR XT base part.

Type	BXT M4 E
Part No.	920 308
Colour	grey



Test / Disconnection module

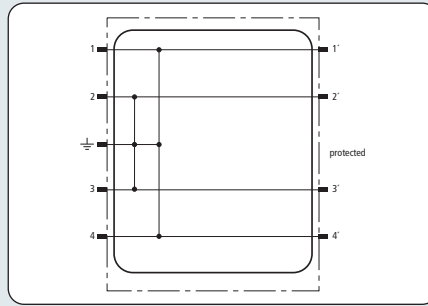
Module for testing lines, plugs into BLITZDUCTOR XT base parts

Type	BXT M4 T
Part No.	920 309
Colour	grey

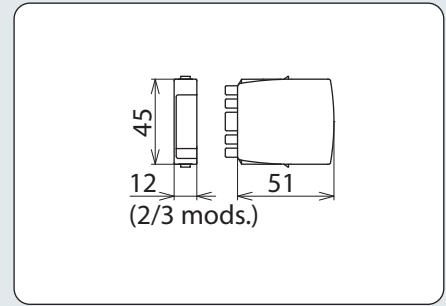


Earthing Module

Pluggable DIN Rail Mounted SPDs



Basic circuit diagram BXT M4 E



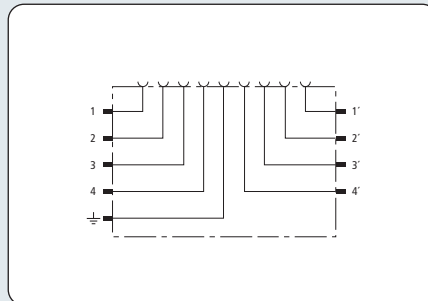
Dimension drawing BXT M4 E

- To be plugged into BLITZDUCTOR XT base parts
- Easy handling
- Quick replacement when retrofitting a protection module

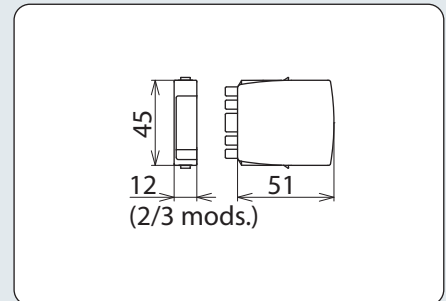
The plugged-in earthing module short-circuits all lines connected to the BLITZDUCTOR XT base part with PG. It directly earths unused wires, which are already connected to the base part.

Type	BXT M4 E
Part No.	920 308
D1 Total lightning impulse current (10/350 μ s) (I_{imp})	10 kA
Operating temperature range	-40°C...+80°C
Degree of protection (with plugged-in protection module)	IP 20
Plugs into	base part
Enclosure material	polyamide PA 6.6
Colour	grey

Test / Disconnection Module



Basic circuit diagram BXT M4 T



Dimension drawing BXT M4 T

- To be plugged into BLITZDUCTOR XT base parts
- Easy maintenance and troubleshooting
- Measuring lines included

The plugged-in test/disconnection module interrupts the cable run of the lines connected to the BLITZDUCTOR XT base part and leads them to a test socket at the front of the module. This allows to carry out measurements in the installation without removing the lines from the base part.

Type	BXT M4 T
Part No.	920 309
Max. continuous operating d.c. voltage (U_c)	180 V
Max. continuous operating a.c. voltage (U_c)	127 V
Nominal current at 80° C (I_n)	1.0 A
Volume resistance	0.1 ohms
Operating temperature range	-40°C ... +80°C
Degree of protection (with plugged-in protection module)	IP 20
Plugs into	base part
Test sockets	gold-plated, 1 mm
Enclosure material	polyamide PA 6.6
Colour	grey
Accessories	2 measuring lines (1 m), protective bag

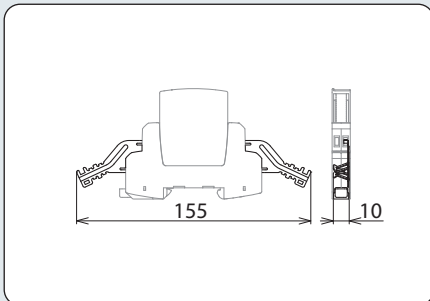


Spare part / extension for test / disconnection modules
 Only suitable for use with BXT M4 T test / disconnection modules
 1 set = 2 measuring lines

Type	ML BXT M4 T
Part No.	920 394
Length	1000 mm
Colour	black

Accessories for BLITZDUCTOR® XT

EMC Spring Terminals



Dimension drawing SAK BXT LR



- Capable of carrying lightning currents
- Low-impedance flat conductor
- Flexible spring terminal

Two spring terminals for the protected and unprotected side of a BLITZDUCTOR XT arrester for permanent low-impedance shield contact with a shielded signal line. Insulating cap for indirect shield earthing, cable ties and insulating strips included.

Type	SAK BXT LR
Part No.	920 395
D1 Lightning impulse current (10/350 µs)	5 kA
Plugs into	clamp connection BXT BAS
Clamping range	3 - 10 mm
Colour	bare surface
Accessories	insulating caps, cable tie, insulating strips

Labelling System 1-50

Pluggable DIN Rail Mounted SPDs

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50

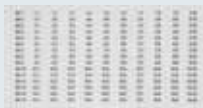


- Abrasion-proof
- Pre-printed

Plate with 2x plate numbers from 1 to 50 for labelling BXT base parts or modules

Type	BS 1 50 BXT
Part No.	920 399
Dimensions (W x H)	11 x 4 mm

Labelling System BA1-BA15



- For DRC MCM XT condition monitoring system
- Abrasion-proof
- Transparent

2x 165 adhesive labels for labelling DRC MCM XT monitoring devices with their bus address (BA1 to BA15) and BXT base parts or modules with consecutive numbers (1.1-1.10 to 15.1-15.10)

Type	BS BA1 BA15 BXT
Part No.	920 398
Dimensions (W x H)	13 x 7 mm



ATEX approval BXT *)



Page 2/3



Page 3/3



IECEx approval BXT *)



*) Approvals: download at www.dehn.de

Information on SIL

Pluggable DIN Rail Mounted SPDs

The term safety integration level (SIL) is defined in the international IEC 61508 and IEC 61511 standards and is used in the field of functional safety. It is intended for assessing the reliability and safety of electrical, electronic or programmable electronic systems. "Functional safety" describes the safety level of a system or installation, which depends on the correct operation of sub-systems and external installations to reduce

the risk. The aim of functional safety is to minimise the risk of failure of the individual sub-systems so that the risk for the entire system or installation is reduced to an acceptable level. The values in the table below can be used for calculating the functional safety of systems with the surge protective devices used.

Download at www.dehn.eu/sil/

Surge Protection Device	λ_{SD}	λ_{SU}	λ_{DD}		λ_{DU}		Total	SFF *3		SIL AC *4	
	Failure rates according to IEC 61508 in FIT							Safe Failure Fraction		SIL	
			*1	*2	*1	*2		*1	*2	*1	*2
BXTU ML2 BD S 0-180, BXTU ML4 BD 0-180	0	50	0	7	42	35	92	54.5%	62.4%	SIL1	SIL2
BXT ML2(4) B 180	0	21	0	1	3	2	24	86.8%	92.7%	SIL2	SIL3
BXT ML4(2) BD *, BXT ML2 BD S *	0	21	0	4	6	2	27	78.2%	92.8%	SIL2	SIL3
BXT ML4 BD HF *, BXT ML2 BD HFS *	0	29	0	4	14	10	43	67.7%	76.8%	SIL2	SIL2
BXT ML2 BD DL S 15	0	21	0	4	6	2	27	78.2%	92.8%	SIL2	SIL3
BXT ML4 BE *, BXT ML2 BE S *	0	21	0	7	9	2	30	71.4%	93.0%	SIL2	SIL3
BXT ML4 BE HF *, BXT ML2 BE HFS *	0	33	0	8	18	10	51	64.9%	80.4%	SIL2	SIL2
BXT ML4 BE C *	0	23	0	9	12	3	35	65.4%	91.3%	SIL2	SIL3
BXT ML4 BC EX 24	0	39	0	8	11	3	50	78.8%	93.7%	SIL2	SIL3
BXT ML4 BD EX 24	0	57	0	6	10	4	67	85.3%	94.1%	SIL2	SIL3
BXT ML2 BD HF EX 6	0	28	0	1	16	15	44	64.0%	67.2%	SIL2	SIL2
BXT ML4 BC *	0	21	0	7	9	2	30	71.4%	93.0%	SIL2	SIL3
BXT ML4 MY 250	0	20	0	0.5	10	9.5	30	66.6%	67.9%	SIL2	SIL2

* All available voltages

*1 Analysis 1 represents a worst-case analysis

*2 Analysis 2 represents an analysis with the assumption that line short circuits and short circuits to GND are detectable or do not have an effect.

*3 The complete sensor or final element subsystem will need to be evaluated to determine the overall Safe Failure Fraction. The number listed is for reference only.

*4 SIL AC (architectural constraints) means that the calculated values are within the range for hardware architectural constraints for the corresponding SIL but does not imply all related IEC 61508 requirements are fulfilled. See also previous footnote.

Compact DIN Rail Mounted SPDs

- Minimum installation width (6 mm only)
- Quick installation with jumper bar (accessory part)
- Spring-loaded connection system

Terminal block with integrated surge protection



Two-pole terminal block of 6 mm width with integrated surge protection and cage clamp terminal. Earthing via DIN rail or terminal. End plate for the terminal blocks must be ordered separately!

DEHNconnect RK is a terminal block of 6 mm width with integrated surge protection and five spring-loaded cage clamp terminals, allowing two lines to be protected and equipotential bonding with the terminal equipment to be established. The snap-in fixing at the supporting foot allows

the device to be safely earthed via the DIN rail. To reduce wiring, jumper bars can be plugged into the protected side of the arrester to transmit signals. As the enclosure of the arresters is open on one side to minimise the width, an end plate should be used at the end of every SPD block.



DCO RK

DEHNconnect RK is available in two performance classes:

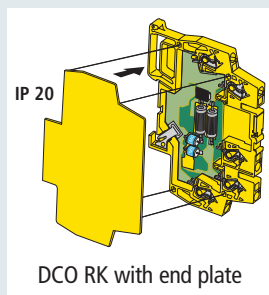
DCO RK M:
Surge arrester with energy-coordinated protection stages

DCO RK E (D):
Surge arrester with diodes only, for improving the electromagnetic compatibility (EMC) of terminal equipment

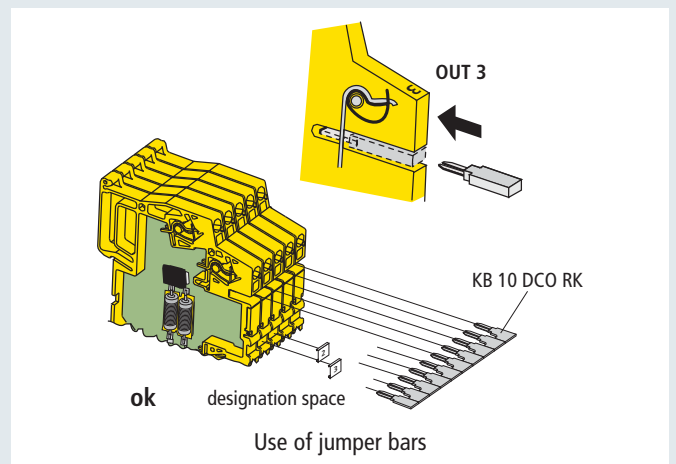


DCO RK accessories

A wide range of accessories such as jumper bars, labels or end plates make DCO RK a system easy to operate, which has been specifically designed for use in industrial environments.



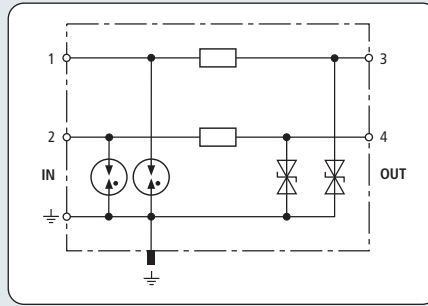
To minimise the width, the enclosure is open on one side. For protection against electrical shock, the arrester can be fitted with an end plate (available as accessory). If several arresters are arranged next to one another, one end plate could be sufficient.



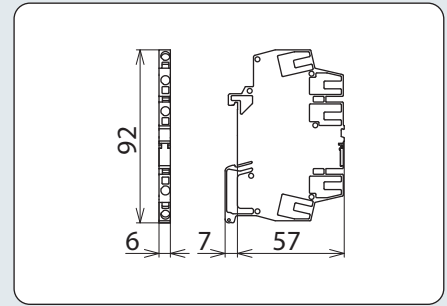
Operating state controls of switch contacts in industrial environments are frequently fed by a common power source. If several DCO RK arresters are used, wiring can be reduced by bridging the feeding signal on the protected side (accessory).

DCO RK ME

Compact DIN Rail Mounted SPDs



Basic circuit diagram DCO RK ME



Dimension drawing DCO RK ME

- Standard protection in the form of blocks
- Low series impedance
- For installation in conformity with the lightning protection zones concept at the boundaries from $0_B - 2$ and higher

Energy-coordinated two-stage arrester for protecting two single lines with common reference potential as well as unbalanced interfaces.

Type	DCO RK ME 12	DCO RK ME 24	DCO RK ME 48	DCO RK ME 110
Part No.	919 920	919 921	919 922	919 923
SPD class	TYPE 2P1	TYPE 2P1	TYPE 2P1	TYPE 2P2
Nominal voltage (U_N)	12 V	24 V	48 V	110 V
Max. continuous operating d.c. voltage (U_C)	14 V	33 V	55 V	170 V
Max. continuous operating a.c. voltage (U_C)	9.5 V	23 V	38.5 V	120 V
Nominal current (I_n)	0.5 A	0.5 A	0.5 A	0.5 A
C2 Total nominal discharge current (8/20 μ s) (I_n)	10 kA	10 kA	10 kA	10 kA
C2 Nominal discharge current (8/20 μ s) per line (I_n)	5 kA	5 kA	5 kA	5 kA
Voltage protection level line-line for I_n C2 (U_p)	≤ 55 V	≤ 110 V	≤ 175 V	≤ 500 V
Voltage protection level line-PG for I_n C2 (U_p)	≤ 40 V	≤ 65 V	≤ 100 V	≤ 270 V
Voltage protection level line-line at 1 kV/ μ s C3 (U_p)	≤ 36 V	≤ 90 V	≤ 160 V	≤ 460 V
Voltage protection level line-PG at 1 kV/ μ s C3 (U_p)	≤ 19 V	≤ 45 V	≤ 80 V	≤ 230 V
Series impedance per line	1.8 ohms	1.8 ohms	1.8 ohms	1.8 ohms
Cut-off frequency line-PG (f_c)	2.5 MHz	6 MHz	10 MHz	16 MHz
Capacitance line-line (C)	≤ 1.2 nF	≤ 0.5 nF	≤ 0.3 nF	≤ 0.2 nF
Capacitance line-PG (C)	≤ 2.4 nF	≤ 1 nF	≤ 0.6 nF	≤ 0.4 nF
Operating temperature range	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C
Degree of protection	IP 00, with cover IP 20	IP 00, with cover IP 20	IP 00, with cover IP 20	IP 00, with cover IP 20
For mounting on	35 mm DIN rail acc. to EN 60715	35 mm DIN rail acc. to EN 60715	35 mm DIN rail acc. to EN 60715	35 mm DIN rail acc. to EN 60715
Connection (input/output)	spring / spring	spring / spring	spring / spring	spring / spring
Cross-sectional area, solid	0.08 - 2.5 mm ²	0.08 - 2.5 mm ²	0.08 - 2.5 mm ²	0.08 - 2.5 mm ²
Cross-sectional area, flexible	0.08 - 2.5 mm ²	0.08 - 2.5 mm ²	0.08 - 2.5 mm ²	0.08 - 2.5 mm ²
Earthing via	DIN rail / terminal	DIN rail / terminal	DIN rail / terminal	DIN rail / terminal
Enclosure material	polyamide PA 6.6	polyamide PA 6.6	polyamide PA 6.6	polyamide PA 6.6
Colour	yellow	yellow	yellow	yellow
Test standards	IEC 61643-21 / EN 61643-21	IEC 61643-21 / EN 61643-21	IEC 61643-21 / EN 61643-21	IEC 61643-21 / EN 61643-21
SIL classification	SIL2 / SIL3 *)	SIL2 / SIL3 *)	SIL2 / SIL3 *)	SIL2 / SIL3 *)
Approvals	GOST	GOST	GOST	GOST

*) For more detailed information, please refer to www.dehn.de/en/sil/

Accessory for DEHNconnect RK

End Plate

for DCO RK



Type	AD DCO RK GE
Part No.	919 979
Enclosure material	polyamide PA 6.6
Colour	yellow

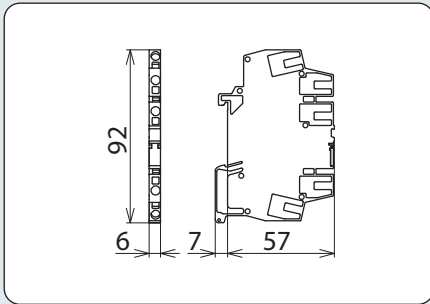
Accessory for DEHNconnect RK

Quick Labelling System, horizontal Imprint

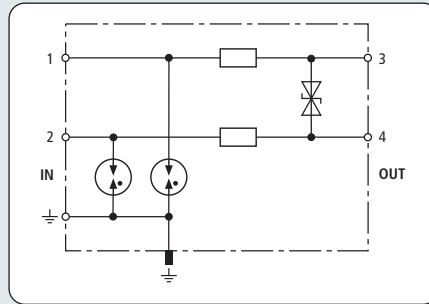
Plate with 2x plate numbers from 1 to 50 for DCO RK, horizontal imprint



Type	BS 1 50 DCO RK
Part No.	919 977
Material	plastic



Dimension drawing DCO RK MD



Basic circuit diagram DCO RK MD



- Standard protection in the form of blocks
- Low series impedance
- For installation in conformity with the lightning protection zones concept at the boundaries from $0_B - 2$ and higher

Energy-coordinated two-stage arrester, no leakage currents to earth, for protecting an unearthed pair as well as balanced interfaces.

Type	DCO RK MD 12	DCO RK MD 24
Part No.	919 940	919 941
SPD class	TYPE 2 P1	TYPE 2 P1
Nominal voltage (U_N)	12 V	24 V
Max. continuous operating d.c. voltage (U_C)	14 V	33 V
Max. continuous operating a.c. voltage (U_C)	9.5 V	23 V
Nominal current (I_L)	0.5 A	0.5 A
C2 Total nominal discharge current (8/20 μ s) (I_n)	10 kA	10 kA
C2 Nominal discharge current (8/20 μ s) per line (I_n)	5 kA	5 kA
Voltage protection level line-line for I_n C2 (U_p)	≤ 25 V	≤ 50 V
Voltage protection level line-PG for I_n C2 (U_p)	≤ 750 V	≤ 750 V
Voltage protection level line-line at 1 kV/ μ s C3 (U_p)	≤ 19 V	≤ 45 V
Voltage protection level line-PG at 1 kV/ μ s C3 (U_p)	≤ 650 V	≤ 650 V
Series impedance per line	1.8 ohms	1.8 ohms
Cut-off frequency line-line (f_C)	2.5 MHz	6 MHz
Capacitance line-line (C)	≤ 2.4 nF	≤ 1 nF
Capacitance line-PG (C)	≤ 5 pF	≤ 5 pF
Operating temperature range	-40°C...+80°C	-40°C...+80°C
Degree of protection	IP 00, with cover IP 20	IP 00, with cover IP 20
For mounting on	35 mm DIN rail acc. to EN 60715	35 mm DIN rail acc. to EN 60715
Connection (input/output)	spring / spring	spring / spring
Cross-sectional area, solid	0.08 - 2.5 mm ²	0.08 - 2.5 mm ²
Cross-sectional area, flexible	0.08 - 2.5 mm ²	0.08 - 2.5 mm ²
Earthing via	DIN rail / terminal	DIN rail / terminal
Enclosure material	polyamide PA 6.6	polyamide PA 6.6
Colour	yellow	yellow
Test standards	IEC 61643-21 / EN 61643-21	IEC 61643-21 / EN 61643-21
SIL classification	SIL2 / SIL3 *)	SIL2 / SIL3 *)
Approvals	GOST	GOST

*) For more detailed information, please refer to www.dehn.de/en/sil/

Accessory for DEHNconnect RK

Quick Labelling System, vertical Imprint

Plate with 2x plate numbers from 1 to 50 for DCO RK, vertical imprint

Type	BS 1 50 S DCO RK
Part No.	919 976
Material	plastic



Accessory for DEHNconnect RK

Jumper Bar

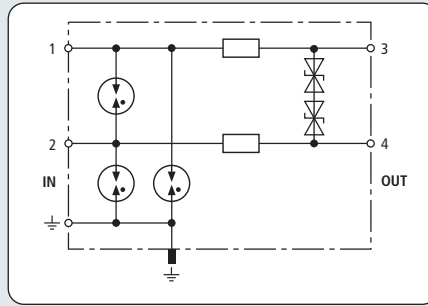
Multipole jumper bar for DCO RK

Type	KB 10 DCO RK
Part No.	919 880
Poles	10

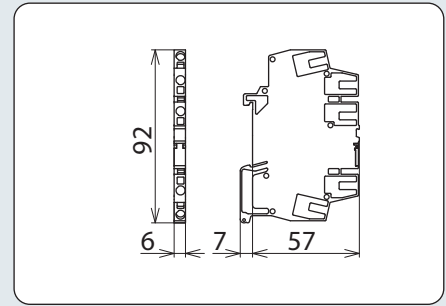


DCO RK MD 48

Compact DIN Rail Mounted SPDs



Basic circuit diagram DCO RK MD 48



Dimension drawing DCO RK MD 48

- Standard protection in the form of blocks
- Extremely low series impedance
- For installation in conformity with the lightning protection zones concept at the boundaries from $0_B - 2$ and higher

Energy-coordinated two-stage arrester, no leakage currents to earth, for protecting an unearthed pair as well as balanced interfaces up to 1.7 A.

Type	DCO RK MD 48
Part No.	919 942
SPD class	TYPE 2 P1
Nominal voltage (U_N)	48 V
Max. continuous operating d.c. voltage (U_C)	55 V
Max. continuous operating a.c. voltage (U_C)	38.5 V
Nominal current (I_N)	1.7 A
C2 Total nominal discharge current (8/20 μ s) (I_n)	10 kA
C2 Nominal discharge current (8/20 μ s) per line (I_n)	5 kA
Voltage protection level line-line for I_n C2 (U_p)	≤ 100 V
Voltage protection level line-PG for I_n C2 (U_p)	≤ 75 V
Voltage protection level line-line at 1 kV/ μ s C3 (U_p)	≤ 70 V
Voltage protection level line-PG at 1 kV/ μ s C3 (U_p)	≤ 65 V
Series impedance per line	0.4 ohms
Cut-off frequency line-line (f_C)	10 MHz
Capacitance line-line (C)	≤ 0.6 nF
Capacitance line-PG (C)	≤ 10 pF
Operating temperature range	-40°C...+80°C
Degree of protection	IP 00, with cover IP 20
For mounting on	35 mm DIN rail acc. to EN 60715
Connection (input/output)	spring / spring
Cross-sectional area, solid	0.08 - 2.5 mm ²
Cross-sectional area, flexible	0.08 - 2.5 mm ²
Earthing via	DIN rail / terminal
Enclosure material	polyamide PA 6.6
Colour	yellow
Test standards	IEC 61643-21 / EN 61643-21
SIL classification	SIL2 *)
Approvals	GOST

*) For more detailed information, please refer to www.dehn.de/en/sil/

Accessory for DEHNconnect RK

End Plate

for DCO RK



Type	AD DCO RK GE
Part No.	919 979
Enclosure material	polyamide PA 6.6
Colour	yellow

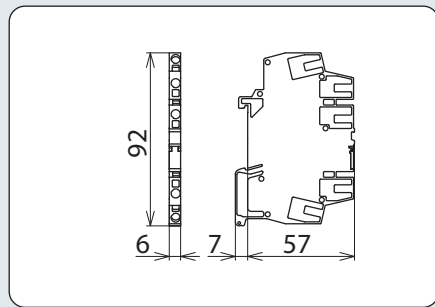
Accessory for DEHNconnect RK

Quick Labelling System, horizontal Imprint

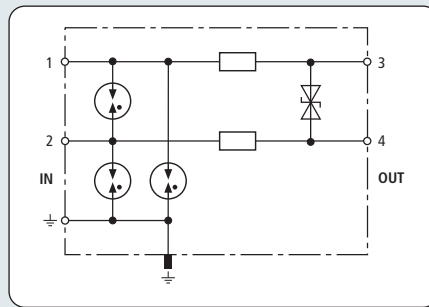
Plate with 2x plate numbers from 1 to 50 for DCO RK, horizontal imprint



Type	BS 1 50 DCO RK
Part No.	919 977
Material	plastic



Dimension drawing DCO RK MD



Basic circuit diagram DCO RK MD



- Standard protection in the form of blocks
- Low series impedance
- For installation in conformity with the lightning protection zones concept at the boundaries from $O_B - 2$ and higher

Energy-coordinated two-stage arrester, no leakage currents to earth, for protecting an unearthed pair in telecommunication applications.

Type	DCO RK MD 110
Part No.	919 943
SPD class	TYPE 2P2
Nominal voltage (U_N)	110 V
Max. continuous operating d.c. voltage (U_C)	170 V
Max. continuous operating a.c. voltage (U_C)	120 V
Nominal current (I_N)	0.5 A
C2 Total nominal discharge current (8/20 μ s) (I_n)	10 kA
C2 Nominal discharge current (8/20 μ s) per line (I_n)	5 kA
Voltage protection level line-line for I_n C2 (U_p)	≤ 260 V
Voltage protection level line-PG for I_n C2 (U_p)	≤ 750 V
Voltage protection level line-line at 1 kV/ μ s C3 (U_p)	≤ 230 V
Voltage protection level line-PG at 1 kV/ μ s C3 (U_p)	≤ 650 V
Series impedance per line	1.8 ohms
Cut-off frequency line-line (f_C)	16 MHz
Capacitance line-line (C)	≤ 0.4 nF
Capacitance line-PG (C)	≤ 5 pF
Operating temperature range	-40°C...+80°C
Degree of protection	IP 00, with cover IP 20
For mounting on	35 mm DIN rail acc. to EN 60715
Connection (input/output)	spring / spring
Cross-sectional area, solid	0.08 - 2.5 mm ²
Cross-sectional area, flexible	0.08 - 2.5 mm ²
Earthing via	DIN rail / terminal
Enclosure material	polyamide PA 6.6
Colour	yellow
Test standards	IEC 61643-21 / EN 61643-21
SIL classification	SIL2 / SIL3 *)
Approvals	GOST

*) For more detailed information, please refer to www.dehn.de/en/sil/

Accessory for DEHNconnect RK

Quick Labelling System, vertical Imprint

Plate with 2x plate numbers from 1 to 50 for DCO RK, vertical imprint

Type	BS 1 50 S DCO RK
Part No.	919 976
Material	plastic



Accessory for DEHNconnect RK

Jumper Bar

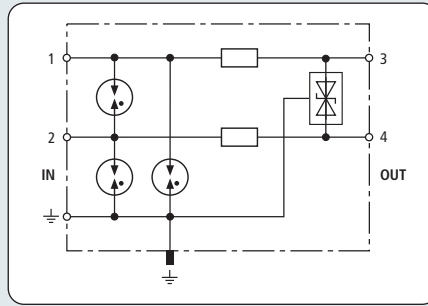
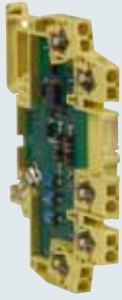
Multipole jumper bar for DCO RK

Type	KB 10 DCO RK
Part No.	919 880
Poles	10

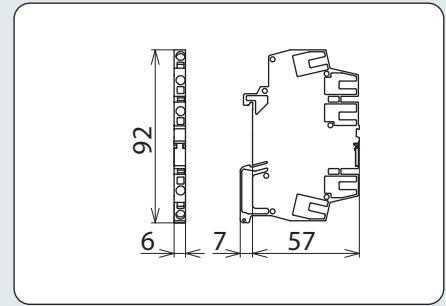


DCO RK MD HF

Compact DIN Rail Mounted SPDs



Basic circuit diagram DCO RK MD HF



Dimension drawing DCO RK MD HF

- Low self-capacitance
- Excellent transmission performance
- For installation in conformity with the lightning protection zones concept at the boundaries from $0_B - 2$ and higher

Energy-coordinated two-stage arrester for protecting balanced or unbalanced interfaces with low voltages. Due to a diode matrix with minimised capacitance, the arrester is also suitable for high transmission rates. For shielded bus lines, it is advisable to use SAK shield connection systems.

Type	DCO RK MD HF 5
Part No.	919 970
SPD class	TYPE 2 P1
Nominal voltage (U_N)	5 V
Max. continuous operating d.c. voltage (U_C)	6.0 V
Max. continuous operating a.c. voltage (U_D)	4.2 V
Nominal current (I_N)	0.1 A
C2 Total nominal discharge current (8/20 μ s) (I_n)	10 kA
C2 Nominal discharge current (8/20 μ s) per line (I_n)	5 kA
Voltage protection level line-line for I_n C2 (U_p)	≤ 27 V
Voltage protection level line-PG for I_n C2 (U_p)	≤ 50 V
Voltage protection level line-line at 1 kV/ μ s C3 (U_p)	≤ 14 V
Voltage protection level line-PG at 1 kV/ μ s C3 (U_p)	≤ 14 V
Series impedance per line	1.0 ohm
Cut-off frequency line-line (f_c)	250 MHz
Cut-off frequency line-PG (f_c)	180 MHz
Capacitance line-line (C)	≤ 19 pF
Capacitance line-PG (C)	≤ 16 pF
Operating temperature range	-40°C...+80°C
Degree of protection	IP 00, with cover IP 20
For mounting on	35 mm DIN rail acc. to EN 60715
Connection (input/output)	spring / spring
Cross-sectional area, solid	0.08 - 2.5 mm ²
Cross-sectional area, flexible	0.08 - 2.5 mm ²
Earthing via	DIN rail / terminal
Enclosure material	thermoplastic PA 6.6
Colour	yellow
Test standards	IEC 61643-21 / EN 61643-21
SIL classification	SIL2 *)
Approvals	GOST

*) For more detailed information, please refer to www.dehn.de/en/sil/

Accessory for DEHNconnect RK

End Plate

for DCO RK



Type	AD DCO RK GE
Part No.	919 979
Enclosure material	polyamide PA 6.6
Colour	yellow

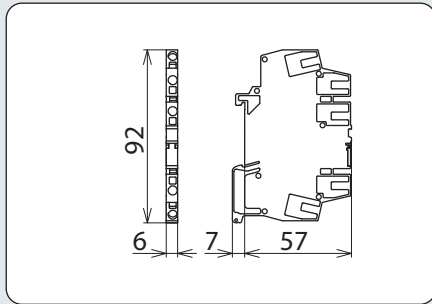
Accessory for DEHNconnect RK

Quick Labelling System, horizontal Imprint

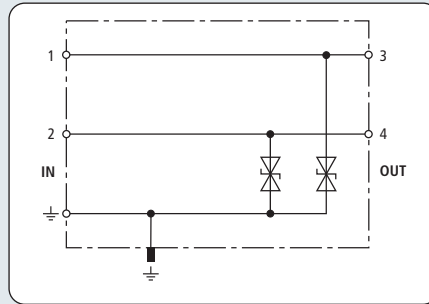
Plate with 2x plate numbers from 1 to 50 for DCO RK, horizontal imprint



Type	BS 1 50 DCO RK
Part No.	919 977
Material	plastic



Dimension drawing DCO RK E



Basic circuit diagram DCO RK E



Finely limiting surge protective device with efficient diodes to earth for two single lines with common reference potential as well as unbalanced interfaces.

- Surge protection in the form of blocks
- Can be subjected to high nominal currents
- For installation in conformity with the lightning protection zones concept at the boundaries from 1 – 2 and higher

Type	DCO RK E 12	DCO RK E 24	DCO RK E 48	DCO RK E 60
Part No.	919 987	919 988	919 989	919 990
SPD class	TYPE 3P1	TYPE 3P1	TYPE 4P1	TYPE 4P1
Nominal voltage (U _N)	12 V	24 V	48 V	60 V
Max. continuous operating d.c. voltage (U _c)	13 V	28 V	58 V	70 V
Max. continuous operating a.c. voltage (U _e)	9 V	19.5 V	41 V	49.5 V
Nominal current (I _N)	10 A	10 A	10 A	10 A
C1 Total nominal discharge current (8/20 μs) (I _n)	0.8 kA	0.6 kA	0.3 kA	0.24 kA
C1 Nominal discharge current (8/20 μs) per line (I _n)	0.4 kA	0.3 kA	0.15 kA	0.12 kA
Voltage protection level line-line for I _n C1 (U _p)	≤ 50 V	≤ 96 V	≤ 180 V	≤ 220 V
Voltage protection level line-PG for I _n C1 (U _p)	≤ 25 V	≤ 48 V	≤ 90 V	≤ 110 V
Voltage protection level line-line at 1 kV/μs C3 (U _p)	≤ 36 V	≤ 76 V	≤ 156 V	≤ 190 V
Voltage protection level line-PG at 1 kV/μs C3 (U _p)	≤ 18 V	≤ 38 V	≤ 78 V	≤ 95 V
Cut-off frequency line-PG (f _c)	2.5 MHz	5.5 MHz	11 MHz	14 MHz
Capacitance line-line (C)	≤ 1.2 nF	≤ 0.6 nF	≤ 0.3 nF	≤ 0.25 nF
Capacitance line-PG (C)	≤ 2.5 nF	≤ 1.2 nF	≤ 0.6 nF	≤ 0.5 nF
Operating temperature range	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C
Degree of protection	IP 00, with cover IP 20	IP 00, with cover IP 20	IP 00, with cover IP 20	IP 00, with cover IP 20
For mounting on	35 mm DIN rail acc. to EN 60715	35 mm DIN rail acc. to EN 60715	35 mm DIN rail acc. to EN 60715	35 mm DIN rail acc. to EN 60715
Connection (input/output)	spring / spring	spring / spring	spring / spring	spring / spring
Cross-sectional area, solid	0.08 - 2.5 mm ²	0.08 - 2.5 mm ²	0.08 - 2.5 mm ²	0.08 - 2.5 mm ²
Cross-sectional area, flexible	0.08 - 2.5 mm ²	0.08 - 2.5 mm ²	0.08 - 2.5 mm ²	0.08 - 2.5 mm ²
Earthing via	DIN rail / terminal	DIN rail / terminal	DIN rail / terminal	DIN rail / terminal
Enclosure material	polyamide PA 6.6	polyamide PA 6.6	polyamide PA 6.6	polyamide PA 6.6
Colour	yellow	yellow	yellow	yellow
Test standards	IEC 61643-21 / EN 61643-21	IEC 61643-21 / EN 61643-21	IEC 61643-21 / EN 61643-21	IEC 61643-21 / EN 61643-21
SIL classification	SIL1 / SIL3 *)	SIL1 / SIL3 *)	SIL1 / SIL3 *)	SIL1 / SIL3 *)
Approvals	GOST	GOST	GOST	GOST

*) For more detailed information, please refer to www.dehn.de/en/sil/

Accessory for DEHNconnect RK

Quick Labelling System, vertical Imprint

Plate with 2x plate numbers from 1 to 50 for DCO RK, vertical imprint

Type	BS 1 50 S DCO RK
Part No.	919 976
Material	plastic



Accessory for DEHNconnect RK

Jumper Bar

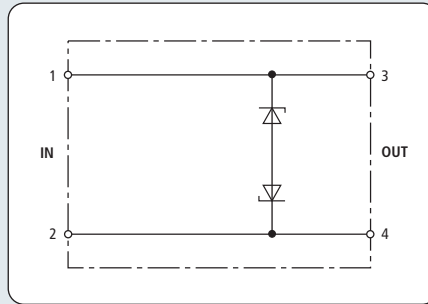
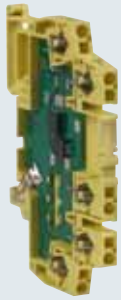
Multipole jumper bar for DCO RK

Type	KB 10 DCO RK
Part No.	919 880
Poles	10

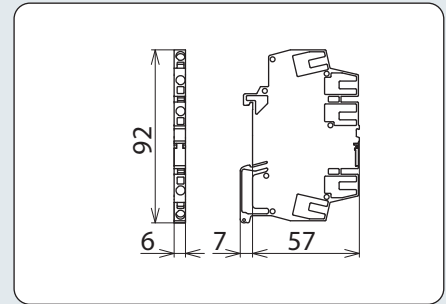


DCO RK D

Compact DIN Rail Mounted SPDs



Basic circuit diagram DCO RK D



Dimension drawing DCO RK D

- EMC protection in the form of blocks
- High nominal current
- For installation in conformity with the lightning protection zones concept at the boundaries from 1 – 2 and higher

Surge protective device with efficient diodes between the signal lines for SIEMENS-SPS S7-300 digital output modules (laboratory tested). The terminal allows increased EMC protection. No connection to PG.

Type	DCO RK D 5 24
Part No.	919 986
SPD class	TYPE 4 P1
Nominal voltage (U _N)	+ 24 V / - 5 V
Max. continuous operating d.c. voltage (U _c)	+ 30 V / - 6 V
Nominal current (I _n)	10 A
C1 Total nominal discharge current (8/20 μs) (I _n)	0.3 kA
C1 Nominal discharge current (8/20 μs) per line (I _n)	0.3 kA
Voltage protection level line-line for I _n C1 (U _p)	≤ 70 V
Voltage protection level line-line at 1 kV/μs C3 (U _p)	≤ 45 V
Cut-off frequency line-line (f _G)	3.5 MHz
Capacitance line-line (C)	≤ 2 nF
Operating temperature range	-40°C...+80°C
Degree of protection	IP 00, with cover IP 20
For mounting on	35 mm DIN rail acc. to EN 60715
Connection (input/output)	spring / spring
Cross-sectional area, solid	0.08 - 2.5 mm ²
Cross-sectional area, flexible	0.08 - 2.5 mm ²
Enclosure material	polyamide PA 6.6
Colour	yellow
Test standards	IEC 61643-21 / EN 61643-21
SIL classification	SIL1 / SIL3 *)
Approvals	GOST

*) For more detailed information, please refer to www.dehn.de/en/sil/

Accessory for DEHNconnect RK

End Plate

for DCO RK



Type	AD DCO RK GE
Part No.	919 979
Enclosure material	polyamide PA 6.6
Colour	yellow

Type	AD DCO RK GE
Part No.	919 979
Material	polyamide PA 6.6
Colour	yellow

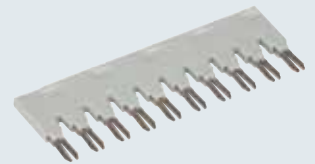


- Easy to snap on

Jumper Bar

Multipole jumper bar for DCO RK

Type	KB 10 DCO RK
Part No.	919 88
Poles	10



- Reduced wiring
- Only to be used at the protected output of DCO RK

Quick Labelling System, horizontal Imprint

Plate with 2x plate numbers from 1 to 50 for DCO RK, horizontal imprint

Type	BS 1 50 DCO RK
Part No.	919 977
Material	plastic



- Pre-printed labels for DCO RK

Quick Labelling System, vertical Imprint

Plate with 2x plate numbers from 1 to 50 for DCO RK, vertical imprint

Type	BS 1 50 S DCO RK
Part No.	919 976
Material	plastic



- Pre-printed labels for DCO RK



Compact DIN rail mounted surge protective device with screw terminals for multi-core lines.

- Cost-effective protection of multi-core signal lines
- Interface-specific versions, e.g. TTY, RS485
- Versions for d.c. power supply systems

BLITZDUCTOR VT, a family of compact DIN rail mounted arresters, comes in different types of enclosures. The majority of the arrester versions pro-

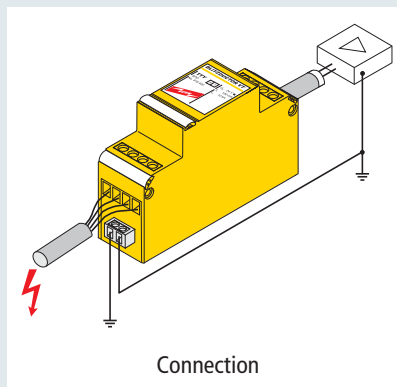
tect four-core signal lines or special applications. The arrester is earthed via a screw terminal.



BVT enclosure family

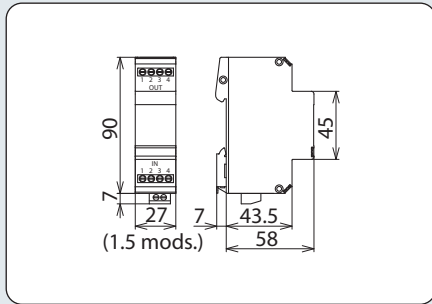
The BLITZDUCTOR VT enclosure concept is variable. Depending on the application, arresters are distinguished between:

- Width: 1.5 modules, 4 protected signal lines
- Width: 1.5 modules, 2 protected lines for d.c. power supply systems
- Width: 3 modules, 6 protected lines for RS485/422

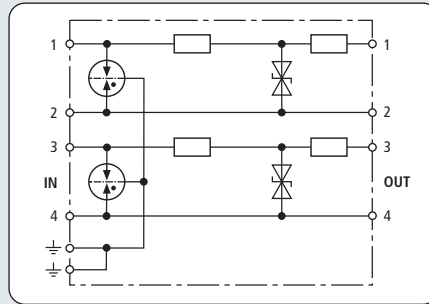


The arrester has to be connected to earth by means of a terminal **instead** of the snap-in fixing mechanism.

Direct equipotential bonding with terminal equipment can be established by means of the second slot of this double terminal.



Dimension drawing BVT TTY



Basic circuit diagram BVT TTY



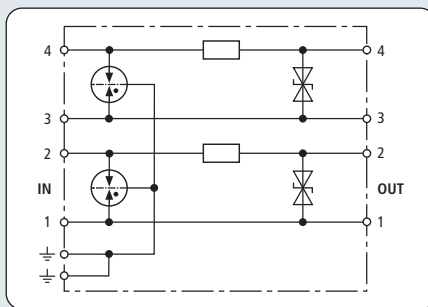
- Simultaneous protection of two TTY loops
- Additional decoupling with regard to the terminal device
- For installation in conformity with the lightning protection zones concept at the boundaries from $0_B - 2$ and higher

Owing to the additional decoupling resistors at the output, even diodes with a low absorption capacity in terminal equipment are integrated into the energy coordination of the protection stages. This is especially important for optocoupler interfaces.

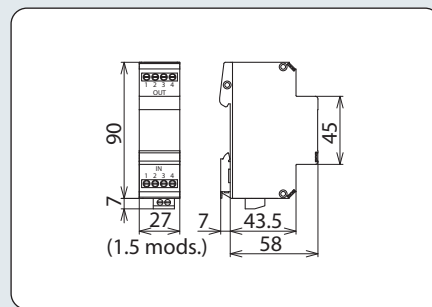
Type	BVT TTY 24
Part No.	918 400
SPD class	TYPE 2 P1
Nominal d.c. voltage (U_N)	24 V
Max. continuous operating d.c. voltage (U_C)	26.8 V
Max. continuous operating a.c. voltage (U_C)	18.9 V
Nominal current (I_L)	0.1 A
C2 Total nominal discharge current (8/20 μ s) (I_n)	10 kA
C2 Nominal discharge current (8/20 μ s) per line (I_n)	10 kA
Voltage protection line-line for I_n C2 (U_p)	≤ 65 V
Voltage protection level line-PG for I_n C2 (U_p)	≤ 700 V
Voltage protection level line-line at 1 kV/ μ s C3 (U_p)	≤ 36 V
Voltage protection level line-PG at 1 kV/ μ s C3 (U_p)	≤ 600 V
Series impedance per line	17.2 ohms per pair
Cut-off frequency line-line (f_G)	8 MHz
Capacitance line-line (C)	≤ 1 nF
Operating temperature range	-40°C...+80°C
Degree of protection	IP 20
For mounting on	35 mm DIN rail acc. to EN 60715
Connection (input/output)	screw / screw
Cross-sectional area, solid	0.08 - 2.5 mm ²
Cross-sectional area, flexible	0.08 - 2.5 mm ²
Tightening torque (terminals)	0.5 Nm
Earthing via	screw terminal
Enclosure material	thermoplastic, UL 94 V-0
Colour	yellow
Test standards	IEC 61643-21 / EN 61643-21, UL 497B
Approvals	CSA, GOST

BVT MTTY

Compact DIN Rail Mounted SPDs



Basic circuit diagram BVT MTTY

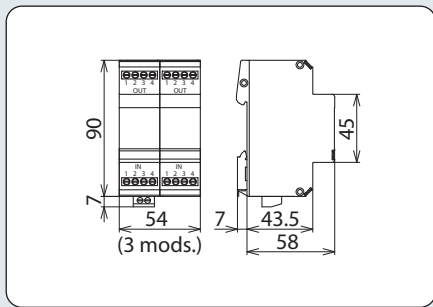


Dimension drawing BVT MTTY

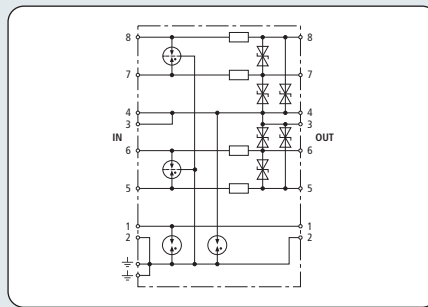
- Cost-effective compact protection
- For installation in conformity with the lightning protection zones concept at the boundaries from $0_B - 2$ and higher

Energy-coordinated surge arrester, no leakage currents to earth, for two unearthed pairs. Unbalanced use of the decoupling impedance.

Type	BVT MTTY 24
Part No.	918 407
SPD class	TYPE 2 P1
Nominal d.c. voltage (U_N)	24 V
Max. continuous operating d.c. voltage (U_C)	26.8 V
Max. continuous operating a.c. voltage (U_C)	18.9 V
Nominal current (I_n)	0.1 A
C2 Total nominal discharge current (8/20 μ s) (I_n)	20 kA
C2 Nominal discharge current (8/20 μ s) per line (I_n)	10 kA
Voltage protection line-line for I_n C2 (U_p)	≤ 65 V
Voltage protection level line-PG for I_n C2 (U_p)	≤ 700 V
Voltage protection level line-line at 1 kV/ μ s C3 (U_p)	≤ 36 V
Voltage protection level line-PG at 1 kV/ μ s C3 (U_p)	≤ 600 V
Series impedance per line	2.2 ohms per pair
Cut-off frequency line-line (f_c)	10 MHz
Capacitance line-line (C)	≤ 1 nF
Operating temperature range	-40°C...+80°C
Degree of protection	IP 20
For mounting on	35 mm DIN rail acc. to EN 60715
Connection (input/output)	screw / screw
Cross-sectional area, solid	0.08 - 2.5 mm ²
Cross-sectional area, flexible	0.08 - 2.5 mm ²
Tightening torque (terminals)	0.5 Nm
Earthing via	screw terminal
Enclosure material	thermoplastic, UL 94 V-0
Colour	yellow
Test standards	IEC 61643-21 / EN 61643-21
Approvals	GOST



Dimension drawing BVT RS485



Basic circuit diagram BVT RS485



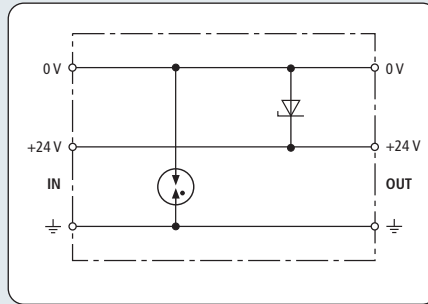
- Terminals for four bus lines and SG
- Direct or indirect shield earthing
- For installation in conformity with the lightning protection zones concept at the boundaries from $0_B - 2$ and higher

Surge arrester for a wide range of applications, e.g. for balanced four-wire RS485/422 interfaces or temperature sensors. Direct or indirect shield earthing, connection of a signal ground (SG).

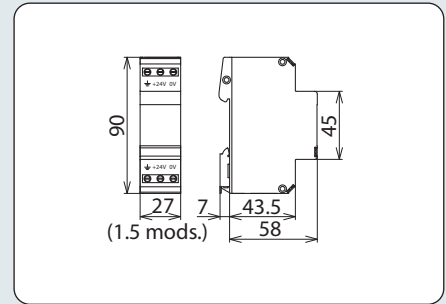
Type	BVT RS485 5
Part No.	918 401
SPD class	TYPE 2P1
Nominal d.c. voltage (U_N)	5 V
Max. continuous operating d.c. voltage (U_C)	6 V
Max. continuous operating a.c. voltage (U_C)	4.2 V
Nominal current (I_L)	0.5 A
C2 Total nominal discharge current (8/20 μ s) (I_n)	10 kA
C2 Nominal discharge current (8/20 μ s) per line (I_n)	10 kA
Voltage protection line-line for I_n C2 (U_p)	≤ 20 V
Voltage protection level line-PG for I_n C2 (U_p)	≤ 700 V
Voltage protection level line-line at 1 kV/ μ s C3 (U_p)	≤ 8.5 V
Voltage protection level line-PG at 1 kV/ μ s C3 (U_p)	≤ 600 V
Series impedance per line	1.8 ohms
Cut-off frequency line-line (f_C)	1.7 MHz
Capacitance line-line (C)	≤ 5 nF
Operating temperature range	-40°C...+80°C
Degree of protection	IP 20
For mounting on	35 mm DIN rail acc. to EN 60715
Connection (input/output)	screw / screw
Cross-sectional area, solid	0.08 - 2.5 mm ²
Cross-sectional area, flexible	0.08 - 2.5 mm ²
Tightening torque (terminals)	0.5 Nm
Earthing via	screw terminal
Enclosure material	thermoplastic, UL 94 V-0
Colour	yellow
Test standards	IEC 61643-21 / EN 61643-21, UL 497B
Approvals	CSA, GOST

BVT AD

Compact DIN Rail Mounted SPDs



Basic circuit diagram BVT AD

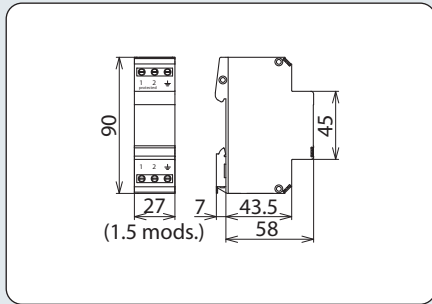


Dimension drawing BVT AD

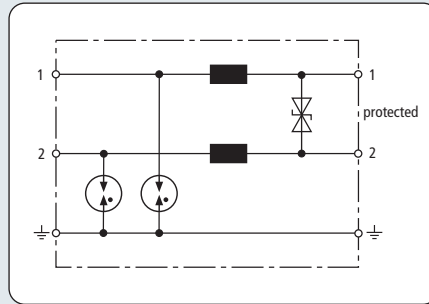
- EMC protection for PLC 24 V power supply systems
- Extremely low protection level
- For installation in conformity with the lightning protection zones concept at the boundaries from 1 – 2 and higher

DIN rail mounted surge arrester for EMC protection of electronic components with d.c. voltage power supply, for e.g. Siemens SPS S7-300. Since a unipolar diode is used, the polarity of the operating voltage must be observed.

Type	BVT AD 24
Part No.	918 402
SPD class	TYPE 3 P1
Nominal d.c. voltage (U_N)	24 V
Max. continuous operating d.c. voltage (U_C)	35 V
Nominal current (I_N)	10 A
C2 Total nominal discharge current (8/20 μ s) (I_n)	2 kA
C2 Nominal discharge current (8/20 μ s) per line (I_n)	1 kA
Voltage protection line-line for I_n C2 (U_p)	≤ 70 V
Voltage protection level line-PG for I_n C2 (U_p)	≤ 700 V
Voltage protection level line-line at 1 kV/ μ s C3 (U_p)	≤ 50 V
Voltage protection level line-PG at 1 kV/ μ s C3 (U_p)	≤ 700 V
Capacitance line-line (C)	≤ 7 nF
Capacitance line-PG (C)	≤ 10 pF
Operating temperature range	-40°C...+80°C
Degree of protection	IP 20
For mounting on	35 mm DIN rail acc. to EN 60715
Connection (input/output)	screw / screw
Cross-sectional area, solid	0.5 - 4.0 mm ²
Cross-sectional area, flexible	0.5 - 4.0 mm ²
Tightening torque (terminals)	0.8 Nm
Earthing via	screw terminal
Enclosure material	thermoplastic, UL 94 V-0
Colour	yellow
Test standards	IEC 61643-21 / EN 61643-21, UL 497B
Approvals	CSA, GOST, UL



Dimension drawing BVT ALD



Basic circuit diagram BVT ALD



Energy-coordinated, DIN rail mounted combined lightning current and surge arrester for protecting unearthed d.c. power supply systems.

- For d.c. power supply systems up to nominal currents of 4 A
- Low voltage protection level
- For installation in conformity with the lightning protection zones concept at the boundaries from 0_A – 2 and higher

Type	BVT ALD 36	BVT ALD 60 *)
Part No.	918 408	918 409 NEW
SPD class	TYPE 1P1	TYPE 1P1
Nominal d.c. voltage (U _N)	36 V	60 V
Max. continuous operating d.c. voltage (U _C)	45 V	65 V
Nominal current at 80°C (I _L)	4 A	4 A
Nominal current at 40°C (I _L)	7 A	7 A
Backup fuse for	—	U _N ≥ 45 V and I _L ≥ 1 A
D1 Lightning impulse current (10/350 μs) per line (I _{imp})	2.5 kA	2.5 kA
D1 Total lightning impulse current (10/350 μs) (I _{imp})	5 kA	5 kA
C2 Total nominal discharge current (8/20 μs) (I _n)	20 kA	20 kA
C2 Nominal discharge current (8/20 μs) per line (I _n)	10 kA	10 kA
Voltage protection line-line for I _n C2 (U _p)	≤ 80 V	≤ 120 V
Voltage protection level line-PG for I _n C2 (U _p)	≤ 1000 V	≤ 1000 V
Voltage protection level line-line at 1 kV/μs C3 (U _p)	≤ 60 V	≤ 90 V
Voltage protection level line-PG at 1 kV/μs C3 (U _p)	≤ 650 V	≤ 650 V
Series impedance per line	22 μH	22 μH
Capacitance line-line (C)	≤ 1.5 pF	≤ 1.0 nF
Capacitance line-PG (C)	≤ 100 pF	≤ 100 pF
Operating temperature range	-40°C...+80°C	-40°C...+80°C
Degree of protection	IP 20	IP 20
For mounting on	35 mm DIN rail acc. to EN 60715	35 mm DIN rail acc. to EN 60715
Connection (input/output)	screw / screw	screw / screw
Cross-sectional area, solid	0.5 - 6.0 mm ²	0.5 - 6.0 mm ²
Cross-sectional area, flexible	0.5 - 4.0 mm ²	0.5 - 4.0 mm ²
Tightening torque (terminals)	0.8 Nm	0.8 Nm
Earthing via	screw terminal	screw terminal
Enclosure material	thermoplastic, UL 94 V-0	thermoplastic, UL 94 V-0
Colour	yellow	yellow
Test standards	IEC 61643-21 / EN 61643-21	IEC 61643-21 / EN 61643-21
Approvals	GOST	—

*) Presumably available in the second quarter 2012



Arrester for protecting active cathodic corrosion protection systems. Integrated floating remote signalling contact (break contact) for function monitoring.

The protective circuit and voltage measuring circuit are protected against surge pulses caused by atmospheric discharges (lightning strikes) or switching operations (in power supply lines).

The devices are designed for permanent interference voltages up to 65 V a.c. between pipelines and earth. If this value is exceeded, the relevant regulations for protection against electric shock have to be observed and further measures have to be taken.



BVT KKS arrester family

In cathodic corrosion protection systems arresters for protective circuits and voltage measuring circuits are often used at the same time. The different colours of the arresters, i.e. yellow for voltage measuring circuits and red for protective circuits, allow easy identification.

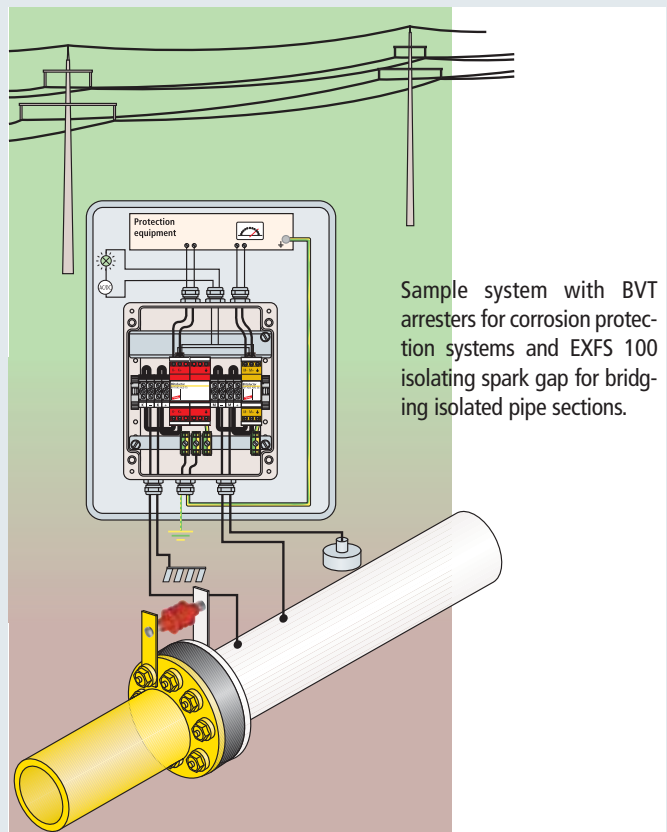


ITAK, serial No. 4305

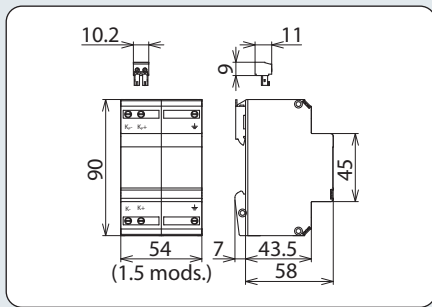
The installation of arresters into a separate metal enclosure has proven very effective in practice as the enclosure provides additional protection from overload caused by short circuits. With ITAK, DEHN provides adequate prewired units for cathodic corrosion protection systems. The ITAK serial number serves as order number.

- Extremely efficient due to high discharge capacity
- Easy maintenance due to remote signalling contact
- Resistant to permanent interference voltages up to 65 V a.c.

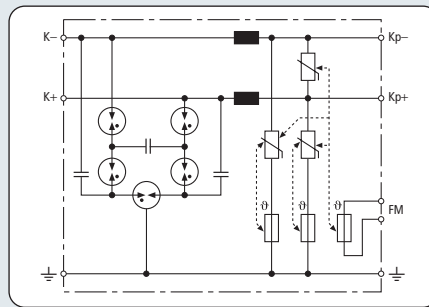
The devices may be overloaded by overcurrents caused by mains faults (short circuits or earth faults). For this reason, they should be installed into a separate metal enclosure or a prewired terminal unit (ITAK) should be used. The integrated remote signalling contact indicates thermal overload of the discharge paths.



Sample system with BVT arresters for corrosion protection systems and EXFS 100 isolating spark gap for bridging isolated pipe sections.



Dimension drawing BVT KKS ALD



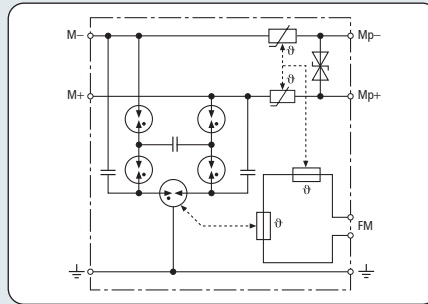
Basic circuit diagram BVT KKS ALD



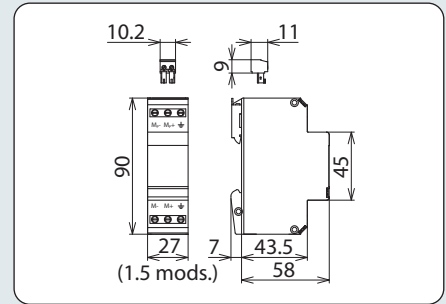
- For protective circuits
- High nominal current
- For installation in conformity with the lightning protection zones concept at the boundaries from 0_A – 2 and higher

Energy-coordinated combined lightning current and surge arrester for protecting the inverter in a protective circuit (red colour). Plug-in remote signalling contact (break contact) indicates overload (thermal monitoring of the varistors). Installation into steel-sheet enclosure recommended. A low impulse sparkover voltage is achieved by capacitive control.

Type	BVT KKS ALD 75
Part No.	918 420
SPD class	TYPE 1P1
Nominal voltage (U _N)	70 V
Max. continuous operating d.c. voltage (U _c)	75 V
Nominal current (I _N)	12 A
D1 Total lightning impulse current (10/350 μs) (I _{imp})	7 kA
D1 Lightning impulse current (10/350 μs) per line (I _{imp})	3.5 kA
C2 Total nominal discharge current (8/20 μs) (I _n)	40 kA
C2 Nominal discharge current (8/20 μs) per line (I _n)	20 kA
Voltage protection level line-line for I _{imp} D1 (U _p)	≤ 400 V
Voltage protection level line-PG for I _{imp} D1 (U _p)	≤ 400 V
Voltage protection level line-line at 1 kV/μs C3 (U _p)	≤ 350 V
Voltage protection level line-PG at 1 kV/μs PG (U _p)	≤ 350 V
A2 Total a.c. current carrying capacity	20 A
Series impedance per line	5 μH
Cut-off frequency line-line (f _c)	1 MHz
Capacitance line-line (C)	≤ 2 nF
Capacitance line-PG (C)	≤ 2 nF
Operating temperature range	-40°C...+80°C
Degree of protection	IP 20
For mounting on	35 mm DIN rail acc. to EN 60715
Connection (input/output)	screw / screw
Cross-sectional area, solid	0.5 - 6 mm ²
Cross-sectional area, flexible	0.5 - 4 mm ²
Tightening torque (terminal)	0.8 Nm
Earthing via	screw terminal
Enclosure material	thermoplastic, UL 94 V-0
Colour	red
Test standards	IEC 61643-21 / EN 61643-21
Approvals	GOST
Type of remote signalling contacts	break contact
d.c. switching capacity	250 V/0.1 A, 125 V/0.2 A, 75 V/0.5 A
a.c. switching capacity	250 V/0.5 A
Cross-sectional area for remote signalling terminals	max 1.5 mm ²



Basic circuit diagram BVT KKS APD

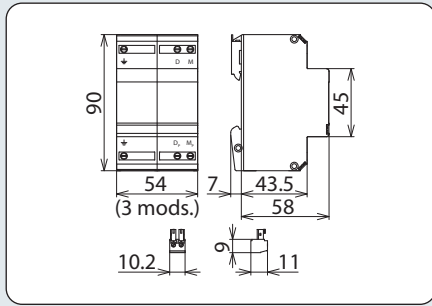


Dimension drawing BVT KKS APD

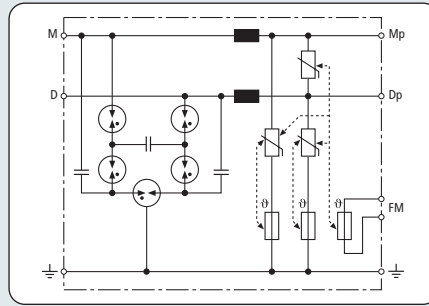
- For voltage measuring circuits
- Plug-in remote signalling contact
- For installation in conformity with the lightning protection zones concept at the boundaries from $0_A - 2$ and higher

Energy-coordinated combined lightning current and surge arrester for protecting voltage measuring circuits (yellow colour). Plug-in remote signalling contact (break contact) indicates overload (thermal monitoring of the discharge paths). Installation into steel-sheet enclosure recommended. A low impulse sparkover voltage is achieved by capacitive control.

Type	BVT KKS APD 36
Part No.	918 421
SPD class	TYPE 1P1
Nominal voltage (U_N)	36 V
Max. continuous operating d.c. voltage (U_c)	36.8 V
Nominal current (I_L)	0.05 A
D1 Total lightning impulse current (10/350 μ s) (I_{imp})	7 kA
D1 Lightning impulse current (10/350 μ s) per line (I_{imp})	3.5 kA
C2 Total nominal discharge current (8/20 μ s) (I_n)	40 kA
C2 Nominal discharge current (8/20 μ s) per line (I_n)	20 kA
Voltage protection level line-line for I_{imp} D1 (U_p)	≤ 65 V
Voltage protection level line-PG for I_{imp} D1 (U_p)	≤ 800 V
Voltage protection level line-line at 1 kV/ μ s C3 (U_p)	≤ 48 V
Voltage protection level line-PG at 1 kV/ μ s PG (U_p)	≤ 600 V
A2 Total a.c. current carrying capacity	20 A
Series impedance per line	70 ohms
Cut-off frequency line-line (f_G)	4.5 dB at 1 MHz (100 ohms)
Capacitance line-line (C)	≤ 1 nF
Capacitance line-PG (C)	≤ 10 pF
Operating temperature range	-40°C...+80°C
Degree of protection	IP 20
For mounting on	35 mm DIN rail acc. to EN 60715
Connection (input/output)	screw / screw
Cross-sectional area, solid	0.5 mm - 6 mm ²
Cross-sectional area, flexible	0.5 mm - 4 mm ²
Tightening torque (terminal)	0.8 Nm
Earthing via	screw terminal
Enclosure material	thermoplastic, UL 94 V-0
Colour	yellow
Test standards	IEC 61643-21 / EN 61643-21
Approvals	GOST
Type of remote signalling contacts	break contact
d.c. switching capacity	250 V/0.1 A, 125 V/0.2 A, 75 V/0.5 A
a.c. switching capacity	250 V/0.5 A
Cross-sectional area for remote signalling terminals	max. 1.5 mm ²



Dimension drawing BVT KKS ALD SN



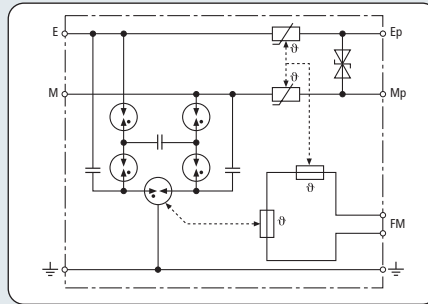
Basic circuit diagram BVT KKS ALD SN



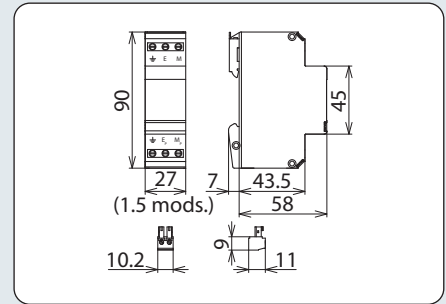
- For protective circuits
- Compliance with SNAM specification
- For installation in conformity with the lightning protection zones concept at the boundaries from 0_A – 2 and higher

Energy-coordinated combined lightning current and surge arrester for protecting the inverter in a protective circuit (red colour). Plug-in remote signalling contact (break contact) indicates overload (thermal monitoring of the varistors). Installation into steel-sheet enclosure recommended. Compliance with SNAM specification. A low impulse sparkover voltage is achieved by capacitive control.

Type	BVT KKS ALD SN
Part No.	918 404
SPD class	TYPE 1P1
Nominal voltage (U _N)	70 V
Max. continuous operating d.c. voltage (U _c)	75 V
Nominal current (I _N)	12 A
D1 Total lightning impulse current (10/350 μs) (I _{imp})	7 kA
D1 Lightning impulse current (10/350 μs) per line (I _{imp})	3.5 kA
C2 Total nominal discharge current (8/20 μs) (I _n)	40 kA
C2 Nominal discharge current (8/20 μs) per line (I _n)	20 kA
Voltage protection level line-line for I _{imp} D1 (U _p)	≤ 400 V
Voltage protection level line-PG for I _{imp} D1 (U _p)	≤ 400 V
Voltage protection level line-line at 1 kV/μs C3 (U _p)	≤ 350 V
Voltage protection level line-PG at 1 kV/μs PG (U _p)	≤ 350 V
A2 Total a.c. current carrying capacity	20 A
Series impedance per line	5 μH
Cut-off frequency line-line (f _c)	1 MHz
Capacitance line-line (C)	≤ 2 nF
Capacitance line-PG (C)	≤ 2 nF
Operating temperature range	-40°C...+80°C
Degree of protection	IP 20
For mounting on	35 mm DIN rail acc. to EN 60715
Connection (input/output)	screw / screw
Cross-sectional area, solid	0.5 - 6 mm ²
Cross-sectional area, flexible	0.5 - 4 mm ²
Tightening torque (terminal)	0.8 Nm
Earthing via	screw terminal
Enclosure material	thermoplastic, UL 94 V-0
Colour	red
Test standards	IEC 61643-21 / EN 61643-21
Approvals	SNAM specification, GOST
Type of remote signalling contacts	break contact
d.c. switching capacity	250 V/0.1 A, 125 V/0.2 A, 75 V/0.5 A
a.c. switching capacity	250 V/0.5 A
Cross-sectional area for remote signalling terminals	max. 1.5 mm ²



Basic circuit diagram BVT KKS APD SN



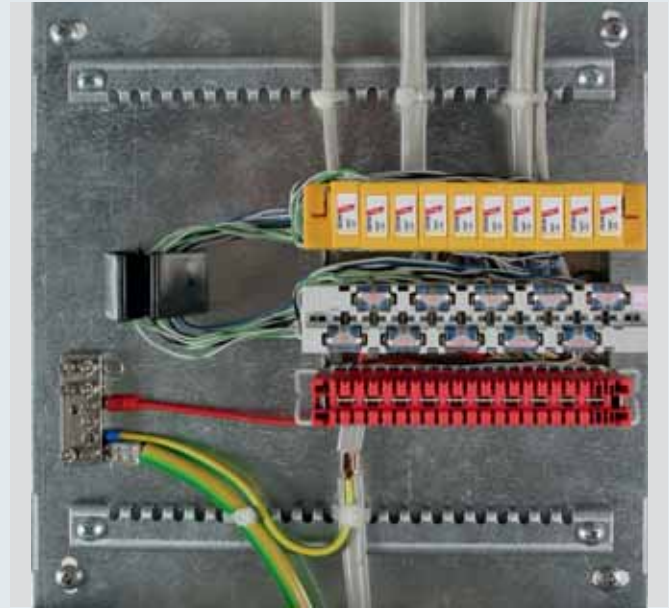
Dimension drawing BVT KKS APD SN

- For voltage measuring circuits
- Compliance with SNAM specification
- For installation in conformity with the lightning protection zones concept at the boundaries from $0_A - 2$ and higher

Energy-coordinated combined lightning current and surge arrester for protecting voltage measuring circuits (yellow colour). Plug-in remote signalling contact (break contact) indicates overload (thermal monitoring of the discharge paths). Installation into steel-sheet enclosure recommended. Compliance with SNAM specification. A low impulse sparkover voltage is achieved by capacitive control.

Type	BVT KKS APD SN
Part No.	918 405
SPD class	TYPE 1 P1
Nominal voltage (U_N)	36 V
Max. continuous operating d.c. voltage (U_c)	36.8 V
Nominal current (I_n)	0.1 A
D1 Total lightning impulse current (10/350 μ s) (I_{imp})	7 kA
D1 Lightning impulse current (10/350 μ s) per line (I_{imp})	3.5 kA
C2 Total nominal discharge current (8/20 μ s) (I_n)	40 kA
C2 Nominal discharge current (8/20 μ s) per line (I_n)	20 kA
Voltage protection level line-line for I_{imp} D1 (U_p)	≤ 65 V
Voltage protection level line-PG for I_{imp} D1 (U_p)	≤ 900 V
Voltage protection level line-line at 1 kV/ μ s C3 (U_p)	≤ 48 V
Voltage protection level line-PG at 1 kV/ μ s PG (U_p)	≤ 600 V
A2 Total a.c. current carrying capacity	20 A
Series impedance per line	10 ohms
Cut-off frequency line-line (f_G)	6 MHz
Capacitance line-line (C)	≤ 1 nF
Capacitance line-PG (C)	≤ 10 pF
Operating temperature range	-40°C...+80°C
Degree of protection	IP 20
For mounting on	35 mm DIN rail acc. to EN 60715
Connection (input/output)	screw / screw
Cross-sectional area, solid	0.5 - 6 mm ²
Cross-sectional area, flexible	0.5 - 4 mm ²
Tightening torque (terminal)	0.8 Nm
Earthing via	screw terminal
Enclosure material	thermoplastic, UL 94 V-0
Colour	yellow
Test standards	IEC 61643-21 / EN 61643-21
Approvals	SNAM specification, GOST
Type of remote signalling contacts	break contact
d.c. switching capacity	250 V/0.1 A, 125 V/0.2 A, 75 V/0.5 A
a.c. switching capacity	250 V/0.5 A
Cross-sectional area for remote signalling terminals	max. 1.5 mm ²

- Variable protection for 1 to 10 pairs in LSA systems of 2/10 type
- LSA disconnection block function integrated in the lightning current arrester provides protection during testing, disconnecting and patching
- Modular system of lightning current and surge arresters can be combined to a single combined arrester



Lightning current arrester, surge arrester or combined lightning current and surge arrester, pluggable into type 2 LSA disconnection blocks. The integrated disconnection block contacts in the 10-pair plug-in SPD block allow protected testing, disconnecting or patching within the system or additional attachment of single-pair surge arresters.

DRL plug-in SPD block (10 pairs): Lightning current arrester for 10 pairs

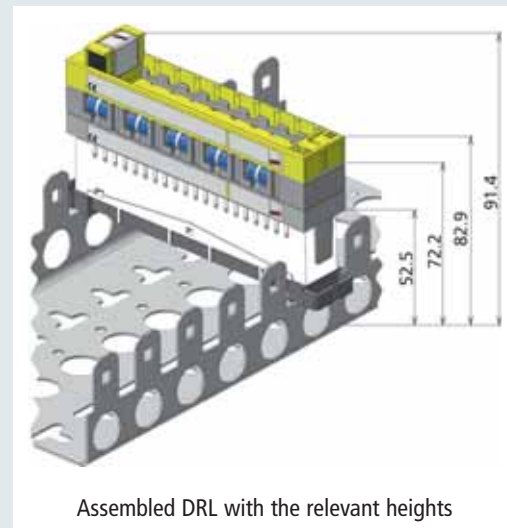
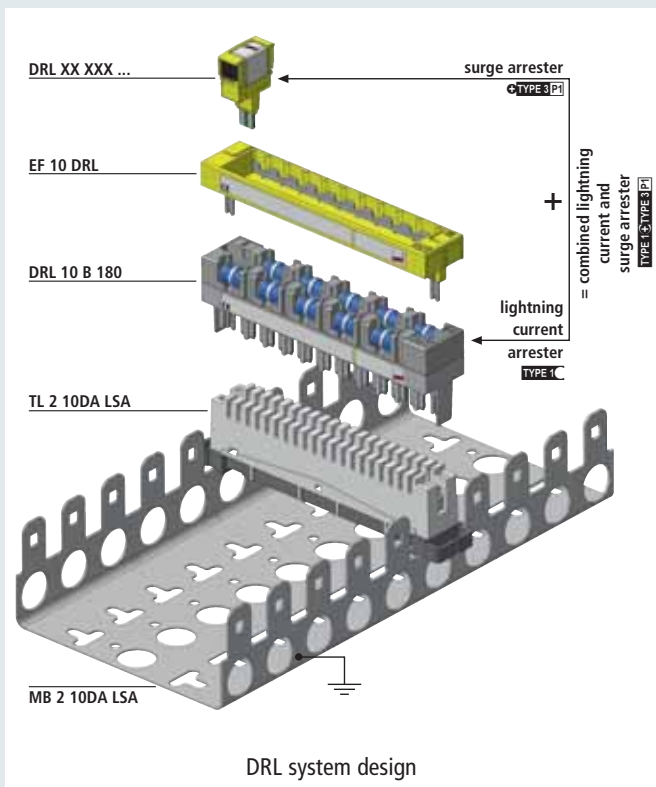
DRL plug (1 pair): Surge protective plug for 1 pair, energy-coordinated with DRL plug-in SPD blocks

Surge protective plug for 1 pair, energy-coordinated with DRL plug-in SPD blocks

Lightning current arrester, surge arrester or combined lightning current and surge arrester that can be plugged into type 2 LSA disconnection blocks. The lightning current carrying 10-pair plug-in SPD block incorporates gas discharge tubes (optionally with visual fault indication) and disconnection block contacts. This allows testing, disconnecting or patching

of pairs with plugged-in protection or the additional attachment of single-pair surge arresters to ensure optimal protection of terminal equipment. The surge arresters snap into the earthing frame and can be removed as a block, whenever required.

The DEHNrapid LSA plug-in SPD block for LSA disconnection blocks effectively protects sensitive hardware from overvoltage and at the same time allows testing, disconnecting and patching of connected lines. The modular arrester system for LSA disconnection blocks can be combined to a combined lightning current and surge arrester and features fail-safe overload protection with visual fault indication of the discharge elements.



Lightning current / surge arrester

SPDs for LSA Technology

With an appropriate earthing frame, the fine limiting DEHNrapid LSA single-pair surge arresters can be plugged directly into the DRL plug-in SPD block or optionally into LSA disconnection blocks. The decoupling impedances integrated in the protective plugs allow energy coordination with the DRL plug-in SPD block irrespective of the cable length. The single-pair plug also allows partial equipment of LSA disconnection blocks and protective plugs with different circuits or nominal voltages can be plugged into one block.

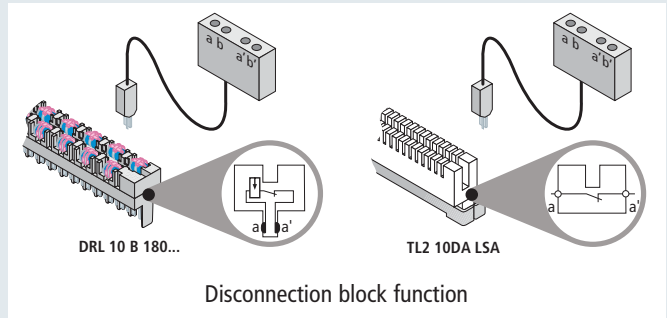


DRL protective plugs with earthing frame



DRL combined lightning current and surge arrester

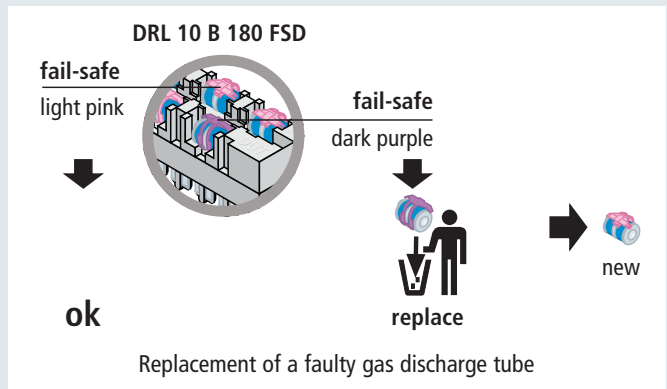
The assembled unit of plug-in SPD block, earthing frame and protective plug (combined lightning current and surge arrester) can be removed and plugged in as a complete unit. The combined lightning current and surge arrester complies with SPD class **TYPE 1+TYPE 3 P1**



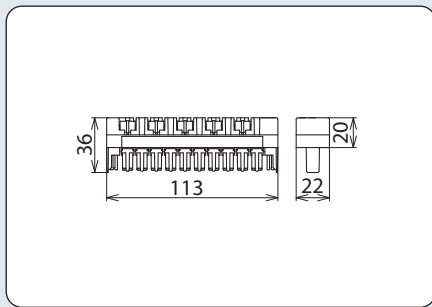
Disconnection block function

The plug-in SPD block incorporates disconnection contacts that are compatible with the disconnection block. A measuring or disconnection adapter can be plugged into the DRL in the same way as a disconnection block to ensure protection even during maintenance operation.

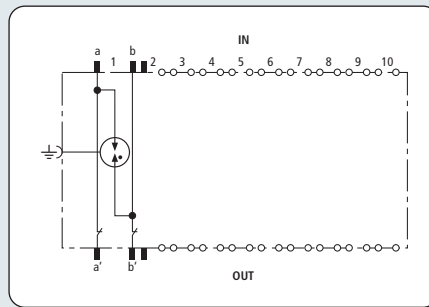
To protect the gas discharge tube from a possible burn-off due to over-current, a fail-safe function short-circuits the lines to earth. In the event of an overcurrent, the disconnecting solder between the spring and the arrester melts, the lines are short-circuited and the temperature-sensitive colour on the spring changes from light pink to dark purple, indicating that the arrester must be replaced.



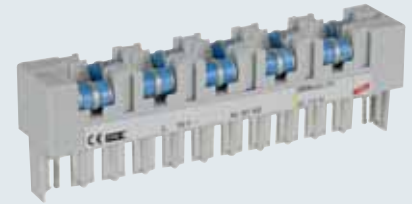
Replacement of a faulty gas discharge tube



Dimension drawing DRL 10 B



Basic circuit diagram DRL 10 B



Lightning current carrying DRL plug-in SPD block (10 pairs) with three-pole gas discharge tubes for almost all applications. It can be combined to a combined lightning current and surge arrester by means of a DRL protective plug. The integrated disconnection block contacts allow testing, measuring and patching in case of plugged-in protection.

- Lightning current arrester for use as plug-in SPD block with integrated LSA disconnection block function
- Expandable to a combined lightning current and surge arrester
- For installation in conformity with the lightning protection zones concept at the boundaries from $0_A - 1$ and higher

Type	DRL 10 B 180
Part No.	907 400
SPD class	TYPE 1C
Nominal voltage (U_N)	180 V
Max. continuous operating d.c. voltage (U_C)	180 V
Max. continuous operating a.c. voltage (U_C)	127 V
Nominal current (I_N)	0.4 A
D1 Total lightning impulse current (10/350 μ s) (I_{imp})	5 kA
D1 Lightning impulse current (10/350 μ s) per line (I_{imp})	2.5 kA
C2 Total nominal discharge current (8/20 μ s) (I_n)	10 kA
C2 Nominal discharge current (8/20 μ s) per line (I_n)	5 kA
Voltage protection level line-line for I_{imp} D1 (U_p)	≤ 500 V
Voltage protection level line-PG for I_{imp} D1 (U_p)	≤ 500 V
Voltage protection level line-line at 1 kV/ μ s C3 (U_p)	≤ 500 V
Voltage protection level line-PG at 1 kV/ μ s C3 (U_p)	≤ 450 V
Series impedance per line	≤ 0.005 ohms
Capacitance line-line (C)	≤ 5 pF
Capacitance line-PG (C)	≤ 5 pF
Operating temperature range	-40°C...+80°C
Degree of protection	IP 10
Plugs into	LSA disconnection block 2/10
Earthing via	mounting frame
Enclosure material	polyamide PA 6.6
Colour	grey
Test standards	IEC 61643-21 / EN 61643-21
Approvals	VdS, GOST

Accessory for DEHNrapid® LSA

Label Holder

Universal label holder made of stainless steel for clear identification of LSA connections. Can be snapped onto DEHNrapid LSA plug-in SPD blocks, earthing frames with protective plugs or mounting frames with LSA SPD blocks of 2/10 type.

Type	SR DRL
Part No.	907 497
Material	Stainless steel



Accessory for DEHNrapid® LSA

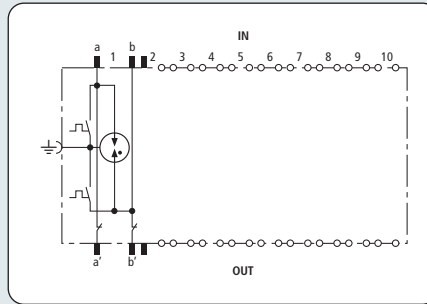
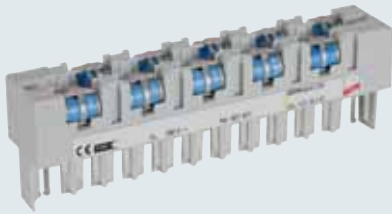
Gas Discharge Tube

High-capacity replacement gas discharge tube for DRL 10 or BM 10 DRL.

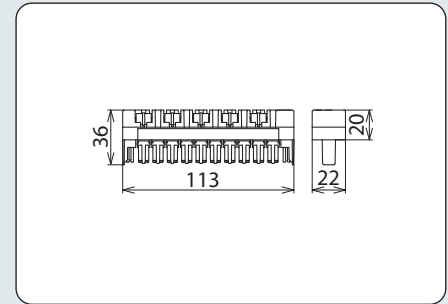
Three-pole unit with common arcing chamber for a constant voltage protection level line-line and line-ground.

Type	GDT 230 B3	GDT 230 B3 FSD
Part No.	907 218	907 219
Integrated into Part No.	907400	907401
Visual fault indicator	—	✓
Fail-safe spring	—	✓





Basic circuit diagram DRL 10 B FSD



Dimension drawing DRL 10 B FSD

- Lightning current arrester for use as plug-in SPD block with integrated LSA disconnection block function
- Visual fault indicator of the gas discharge tubes
- Can be combined to a combined lightning current and surge arrester by means of a DRL protective plug
- For installation in conformity with the lightning protection zones concept at the boundaries from 0_A – 1 and higher

Lightning current carrying DRL plug-in SPD block (10 pairs) for almost all applications. It can be combined to a combined lightning current and surge arrester by means of a DRL protective plug. The integrated disconnection block contacts allow testing, measuring and patching in case of plugged-in protection. The three-pole gas discharge tubes have a fail-safe function with visual fault indicator.

Type	DRL 10 B 180 FSD
Part No.	907 401
SPD class	TYPE 1C
Fault indication	visual, colour change
Nominal voltage (U _N)	180 V
Max. continuous operating d.c. voltage (U _c)	180 V
Max. continuous operating a.c. voltage (U _c)	127 V
Nominal current (I _n)	0.4 A
D1 Total lightning impulse current (10/350 μs) (I _{imp})	5 kA
D1 Lightning impulse current (10/350 μs) per line (I _{imp})	2.5 kA
C2 Total nominal discharge current (8/20 μs) (I _n)	10 kA
C2 Nominal discharge current (8/20 μs) per line (I _n)	5 kA
Voltage protection level line-line for I _{imp} D1 (U _p)	≤ 500 V
Voltage protection level line-PG for I _{imp} D1 (U _p)	≤ 500 V
Voltage protection level line-line at 1 kV/μs C3 (U _p)	≤ 500 V
Voltage protection level line-PG at 1 kV/μs C3 (U _p)	≤ 450 V
Series impedance per line	≤ 0.005 ohms
Capacitance line-line (C)	≤ 5 pF
Capacitance line-PG (C)	≤ 5 pF
Fail-safe function	gas discharge tube with spring contacts
Operating temperature range	-40°C...+80°C
Degree of protection	IP 10
Plugs into	LSA disconnection block 2/10
Earthing via	mounting frame
Enclosure material	polyamide PA 6.6
Colour	grey
Test standards	IEC 61643-21 / EN 61643-21
Approvals	VdS, GOST

Accessory for DEHNrapid® LSA

Gas Discharge Tube

High-capacity replacement gas discharge tube for DRL 10 or BM 10 DRL.

Three-pole unit with common arcing chamber for a constant voltage protection level line-line and line-ground.

Type	GDT 230 B3	GDT 230 B3 FSD
Part No.	907 218	907 219
Integrated into Part No.	907400	907401
Visual fault indicator	—	✓
Fail-safe spring	—	✓



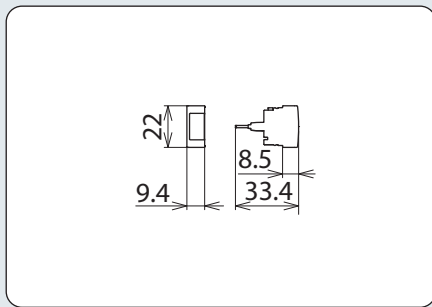
Accessory for DEHNrapid® LSA

Label Holder

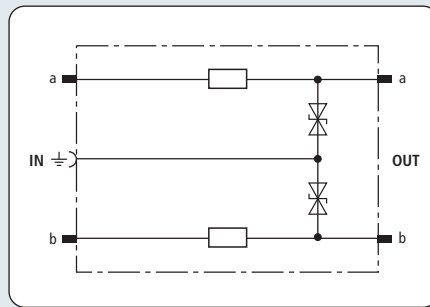
Universal label holder made of stainless steel for clear identification of LSA connections. Can be snapped onto DEHNrapid LSA plug-in SPD blocks, earthing frames with protective plugs or mounting frames with LSA SPD blocks of 2/10 type.

Type	SR DRL
Part No.	907 497
Material	Stainless steel





Dimension drawing DRL RE



Basic circuit diagram DRL RE



Protective plug (one pair), energy-coordinated with DRL plug-in SPD block, for use as single-stage protective device for terminal equipment with decoupling impedances. Ideally suited for signal circuits with common reference potential. Earthing via EF 10 DRL. For disconnection blocks or DRL plug-in SPD blocks only.

- Low voltage protection level for the protection of terminal equipment
- Energy-coordinated with DRL plug-in SPD block
- For installation in conformity with the lightning protection zones concept at the boundaries from 1 – 2 and higher

Type	DRL RE 5	DRL RE 12	DRL RE 24	DRL RE 48	DRL RE 60	DRL RE 180
Part No.	907 420	907 421	907 422	907 423	907 424	907 425
SPD class	⊕ TYPE 3 P1	⊕ TYPE 3 P1	⊕ TYPE 3 P1	⊕ TYPE 3 P1	⊕ TYPE 3 P1	⊕ TYPE 3 P1
Nominal voltage (U _N)	5 V	12 V	24 V	48 V	60 V	180 V
Max. continuous operating d.c. voltage (U _C)	6 V	14 V	28 V	54 V	70 V	180 V
Max. continuous operating a.c. voltage (U _C)	4.2 V	9.5 V	19.5 V	38 V	49.5 V	127 V
Nominal current (I _N)	0.4 A	0.4 A	0.4 A	0.4 A	0.4 A	0.1 A
D1 Total lightning impulse current (10/350 μs) in combination with DRL 10 B... (I _{imp})	5 kA	5 kA	5 kA	5 kA	5 kA	5 kA
D1 Lightning impulse current (10/350 μs) per line in combination with DRL 10 B... (I _{imp})	2.5 kA	2.5 kA	2.5 kA	2.5 kA	2.5 kA	2.5 kA
C2 Total nominal discharge current (8/20 μs) in combination with DRL 10 B... (I _n)	10 kA	10 kA	10 kA	10 kA	10 kA	10 kA
C2 Nominal discharge current (8/20 μs) per line in combination with DRL 10 B... (I _n)	5 kA	5 kA	5 kA	5 kA	5 kA	5 kA
Voltage protection level line-PG for I _{imp} D1 in combination with DRL 10 B... (U _p)	≤ 40 V	≤ 45 V	≤ 65 V	≤ 95 V	≤ 115 V	≤ 280 V
Voltage protection level line-line at 1 kV/μs C3 (U _p)	≤ 17.0 V	≤ 36 V	≤ 72 V	≤ 135 V	≤ 185 V	≤ 500 V
Voltage protection level line-PG at 1 kV/μs C3 (U _p)	≤ 9.5 V	≤ 19 V	≤ 38 V	≤ 70 V	≤ 95 V	≤ 270 V
Series impedance per line	4.7 ohms	4.7 ohms	4.7 ohms	6.8 ohms	6.8 ohms	4.7 ohms
Cut-off frequency line-PG (f _c)	0.95 MHz	2.7 MHz	4.5 MHz	7.35 MHz	10.5 MHz	42 MHz
Capacitance line-line (C)	≤ 3 nF	≤ 1 nF	≤ 0.55 pF	≤ 350 pF	≤ 250 pF	≤ 50 pF
Capacitance line-PG (C)	≤ 6 nF	≤ 2 nF	≤ 1.1 nF	≤ 700 pF	≤ 500 pF	≤ 80 pF
Operating temperature range	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C
Degree of protection	IP 20 (when plugged in)					
Plugs into	LSA disconnection block 2/10 or DRL 10 B ... plug-in SPD block					
Earthing via	earthing frame	earthing frame	earthing frame	earthing frame	earthing frame	earthing frame
Enclosure material	polyamide PA 6.6	polyamide PA 6.6	polyamide PA 6.6	polyamide PA 6.6	polyamide PA 6.6	polyamide PA 6.6
Colour	yellow	yellow	yellow	yellow	yellow	yellow
Test standards	IEC 61643-21 / EN 61643-21	IEC 61643-21 / EN 61643-21	IEC 61643-21 / EN 61643-21	IEC 61643-21 / EN 61643-21	IEC 61643-21 / EN 61643-21	IEC 61643-21 / EN 61643-21
Approvals	VdS, GOST	VdS, GOST	VdS, GOST	VdS, GOST	VdS, GOST	VdS, GOST

Accessory for DEHNrapid® LSA

Label Holder

Universal label holder made of stainless steel for clear identification of LSA connections. Can be snapped onto DEHNrapid LSA plug-in SPD blocks, earthing frames with protective plugs or mounting frames with LSA SPD blocks of 2/10 type.

Type	SR DRL
Part No.	907 497
Material	Stainless steel

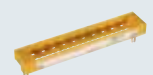


Accessory for DEHNrapid® LSA

Earthing Frame

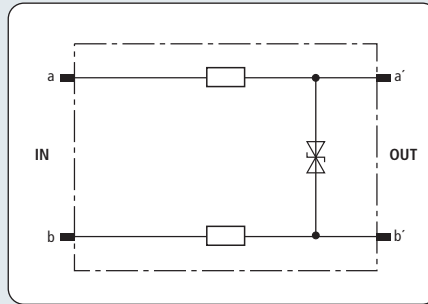
Snap-on earthing frame for earthing and mounting of max. 10 DRL protective plugs. Plugs into a 10-pair disconnection block or DRL plug-in SPD block.

Type	EF 10 DRL
Part No.	907 498
Colour	yellow

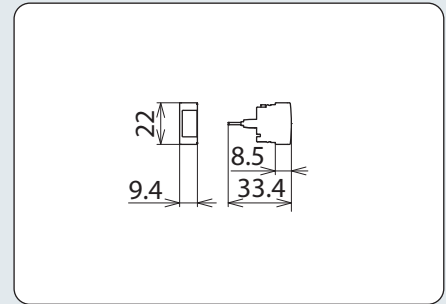


DRL RD

SPDs for LSA Technology



Basic circuit diagram DRL RD



Dimension drawing DRL RD

- Low voltage protection level line/line for protecting terminal equipment
- Energy-coordinated with DRL plug-in SPD block
- For installation in conformity with the lightning protection zones concept at the boundaries from 1 – 2 and higher

Protective plug (one pair), energy-coordinated with DRL plug-in SPD block, for use as single-stage protective device for terminal equipment. Low voltage protection level line-line for unearthed interfaces. To be mounted into EF 10 DRL. Installation recommended only in combination with DRL plug-in SPD block.

Type	DRL RD 5	DRL RD 12	DRL RD 24	DRL RD 48	DRL RD 60	DRL RD 110
Part No.	907 440	907 441	907 442	907 443	907 444	907 445
SPD class	±TYPE 3 P1	±TYPE 3 P1	±TYPE 3 P1	±TYPE 3 P1	±TYPE 3 P1	±TYPE 3 P1
Nominal voltage (U _N)	5 V	12 V	24 V	48 V	60 V	110 V
Max. continuous operating d.c. voltage (U _C)	6 V	14 V	28 V	54 V	70 V	180 V
Max. continuous operating a.c. voltage (U _C)	4.2 V	9.5 V	19.5 V	38 V	49.5 V	127 V
Nominal current (I _N)	0.4 A	0.4 A	0.4 A	0.4 A	0.4 A	0.4 A
D1 Total lightning impulse current (10/350 µs) in combination with DRL 10 B... (I _{imp})	5 kA	5 kA	5 kA	5 kA	5 kA	5 kA
D1 Lightning impulse current (10/350 µs) per line in combination with DRL 10 B... (I _{imp})	2.5 kA	2.5 kA	2.5 kA	2.5 kA	2.5 kA	2.5 kA
C2 Total nominal discharge current (8/20 µs) in combination with DRL 10 B... (I _n)	10 kA	10 kA	10 kA	10 kA	10 kA	10 kA
C2 Nominal discharge current (8/20 µs) per line in combination with DRL 10 B... (I _n)	5 kA	5 kA	5 kA	5 kA	5 kA	5 kA
Voltage protection level line-PG for I _{imp} D1 in combination with DRL 10 B... (U _p)	≤ 500 V	≤ 500 V	≤ 500 V	≤ 500 V	≤ 500 V	≤ 500 V
Voltage protection level line-line at 1 kV/µs C3 (U _p)	≤ 8.5 V	≤ 18 V	≤ 36 V	≤ 70 V	≤ 95 V	≤ 250 V
Series impedance per line	2.2 ohms	2.2 ohms	2.2 ohms	4.7 ohms	4.7 ohms	4.7 ohms
Cut-off frequency line-line (f _c)	1 MHz	2.7 MHz	5.4 MHz	7.8 MHz	11 MHz	20 MHz
Capacitance line-line (C)	≤ 5.5 nF	≤ 2.0 nF	≤ 1.1 nF	≤ 700 pF	≤ 500 pF	≤ 200 pF
Operating temperature range	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C
Degree of protection	IP 20 (when plugged in)					
Plugs into	LSA disconnection block 2/10 or DRL 10 B... plug-in SPD block					
Enclosure material	polyamide PA 6.6	polyamide PA 6.6	polyamide PA 6.6	polyamide PA 6.6	polyamide PA 6.6	polyamide PA 6.6
Colour	yellow	yellow	yellow	yellow	yellow	yellow
Test standards	IEC 61643-21 / EN 61643-21	IEC 61643-21 / EN 61643-21	IEC 61643-21 / EN 61643-21	IEC 61643-21 / EN 61643-21	IEC 61643-21 / EN 61643-21	IEC 61643-21 / EN 61643-21
Approvals	VdS, GOST	VdS, GOST	VdS, GOST	VdS, GOST	VdS, GOST	GOST

Accessory for DEHNrapid® LSA

Earthing Frame

Snap-on earthing frame for earthing and mounting of max. 10 DRL protective plugs. Plugs into a 10-pair disconnection block or DRL plug-in SPD block.



Type	EF 10 DRL
Part No.	907 498
Colour	yellow

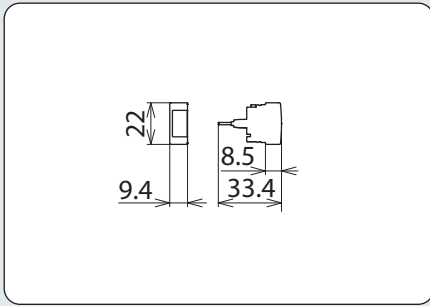
Accessory for DEHNrapid® LSA

Label Holder

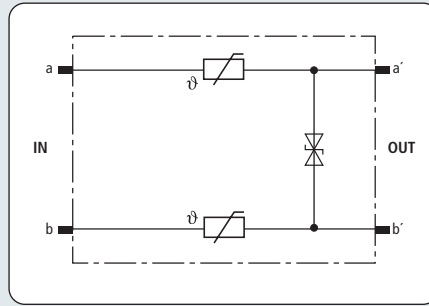
Universal label holder made of stainless steel for clear identification of LSA connections. Can be snapped onto DEHNrapid LSA plug-in SPD blocks, earthing frames with protective plugs or mounting frames with LSA SPD blocks of 2/10 type.



Type	SR DRL
Part No.	907 497
Material	Stainless steel



Dimension drawing DRL PD



Basic circuit diagram DRL PD



Protective plug (one pair), energy-coordinated with DRL plug-in SPD block, for use as single-stage protective device for terminal equipment. Low voltage protection level line-line and integrated overcurrent protection for ADSL, ISDN U_{k0} or a/b lines. To be mounted into EF 10 DRL. Installation recommended only in combination with DRL plug-in SPD block.

- For maximum transmission rates - combined with overcurrent protection
- Energy-coordinated with DRL plug-in SPD block
- For installation in conformity with the lightning protection zones concept at the boundaries from 1 – 2 and higher

Type	DRL PD 180
Part No.	907 430
SPD class	⚡ TYPE 3 P1
Nominal voltage (U_N)	180 V
Max. continuous operating d.c. voltage (U_C)	180 V
Max. continuous operating a.c. voltage (U_C)	127 V
Nominal current (I_N)	0.1 A
D1 Total lightning impulse current (10/350 μ s) in combination with DRL 10 B... (I_{imp})	5 kA
D1 Lightning impulse current (10/350 μ s) per line in combination with DRL 10 B... (I_{imp})	2.5 kA
C2 Total nominal discharge current (8/20 μ s) in combination with DRL 10 B... (I_n)	10 kA
C2 Nominal discharge current (8/20 μ s) per line in combination with DRL 10 B... (I_n)	5 kA
Voltage protection level line-PG for I_{imp} D1 in combination with DRL 10 B... (U_p)	≤ 500 V
Voltage protection level line-line at 1 kV/ μ s C3 (U_p)	≤ 270 V
Series impedance per line	10 ohms +/- 15%
Cut-off frequency line-line (f_G)	61 MHz
Capacitance line-line (C)	≤ 80 pF
Version	integrated overcurrent protection
Operating temperature range	0°C...+70°C
Degree of protection	IP 20 (when plugged in)
Plugs into	LSA disconnection block 2/10 or DRL 10 B... plug-in SPD block
Enclosure material	polyamide PA 6.6
Colour	yellow
Test standards	IEC 61643-21 / EN 61643-21
Approvals	VdS, GOST

Accessory for DEHNrapid® LSA

Label Holder

Universal label holder made of stainless steel for clear identification of LSA connections. Can be snapped onto DEHNrapid LSA plug-in SPD blocks, earthing frames with protective plugs or mounting frames with LSA SPD blocks of 2/10 type.

Type	SR DRL
Part No.	907 497
Material	Stainless steel

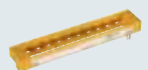


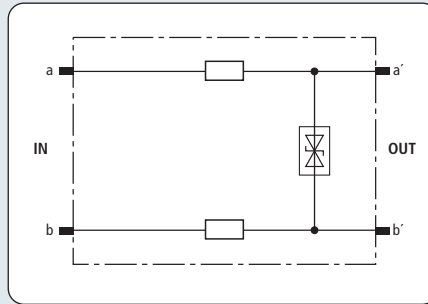
Accessory for DEHNrapid® LSA

Earthing Frame

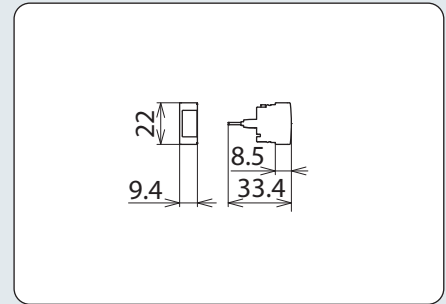
Snap-on earthing frame for earthing and mounting of max. 10 DRL protective plugs. Plugs into a 10-pair disconnection block or DRL plug-in SPD block.

Type	EF 10 DRL
Part No.	907 498
Colour	yellow





Basic circuit diagram DRL HD



Dimension drawing DRL HD

- For maximum transmission rates
- Energy-coordinated with DRL plug-in SPD block
- For installation in conformity with the lightning protection zones concept at the boundaries from 1 – 2 and higher

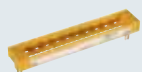
Protective plug (one pair), energy-coordinated with DRL plug-in SPD block, for use as single-stage protective device for terminal equipment for high-frequency transmissions such as G.703 or ISDN U_{2m} , S_{2m} and S_0 . To be mounted into EF 10 DRL. Installation recommended only in combination with DRL plug-in SPD block.

Type	DRL HD 5	DRL HD 24
Part No.	907 465	907 470
SPD class	⊕ TYPE 3 P1	⊕ TYPE 3 P1
Nominal voltage (U_N)	5 V	24 V
Max. continuous operating d.c. voltage (U_C)	6.5 V	28 V
Max. continuous operating a.c. voltage (U_C)	4.6 V	19.5 V
Nominal current (I_N)	0.4 A	0.4 A
D1 Total lightning impulse current (10/350 μ s) in combination with DRL 10 B... (I_{imp})	5 kA	5 kA
D1 Lightning impulse current (10/350 μ s) per line in combination with DRL 10 B... (I_{imp})	2.5 kA	2.5 kA
C2 Total nominal discharge current (8/20 μ s) in combination with DRL 10 B... (I_n)	10 kA	10 kA
C2 Nominal discharge current (8/20 μ s) per line in combination with DRL 10 B... (I_n)	5 kA	5 kA
Voltage protection level line-PG for I_{imp} D1 in combination with DRL 10 B... (U_p)	≤ 500 V	≤ 500 V
Voltage protection level line-line at 1 kV/ μ s C3 (U_p)	≤ 25 V	≤ 46 V
Series impedance per line	2.2 ohms	4.7 ohms
Cut-off frequency line-line (f_c)	90 MHz	94 MHz
Capacitance line-line (C)	≤ 22 pF	≤ 22 pF
Operating temperature range	-40°C...+80°C	-40°C...+80°C
Degree of protection	IP 20 (when plugged in)	IP 20 (when plugged in)
Plugs into	LSA disconnection block 2/10 or DRL 10 B... plug-in SPD block	LSA disconnection block 2/10 or DRL 10 B... plug-in SPD block
Enclosure material	polyamide PA 6.6	polyamide PA 6.6
Colour	yellow	yellow
Test standards	IEC 61643-21 / EN 61643-21	IEC 61643-21 / EN 61643-21
Approvals	GOST	VdS, GOST

Accessory for DEHNrapid® LSA

Earthing Frame

Snap-on earthing frame for earthing and mounting of max. 10 DRL protective plugs. Plugs into a 10-pair disconnection block or DRL plug-in SPD block.



Type	EF 10 DRL
Part No.	907 498
Colour	yellow

Accessory for DEHNrapid® LSA

Label Holder

Universal label holder made of stainless steel for clear identification of LSA connections. Can be snapped onto DEHNrapid LSA plug-in SPD blocks, earthing frames with protective plugs or mounting frames with LSA SPD blocks of 2/10 type.



Type	SR DRL
Part No.	907 497
Material	Stainless steel

SPDs for LSA Technology

Gas Discharge Tube

High-capacity replacement gas discharge tube for DRL 10 or BM 10 DRL. Three-pole unit with common arcing chamber for a constant voltage protection level line-line and line-ground.



Type	GDT 230 B3 FSD
Part No.	907 219
Integrated into Part No.	907 401
Visual fault indicator	✓
Fail-safe spring	✓
Static sparkover voltage	230 V +/- 20%
D1 Total lightning impulse current (10/350 µs)	5 kA

- Original replacement part for DRL 10
- Common arcing chamber of the poles for an optimised voltage protection level
- With fail-safe function and visual indicator

Gas Discharge Tube

High-capacity replacement gas discharge tubes for DRL 10 or BM 10 DRL. Three-pole unit with common arcing chamber for a consistent voltage protection level line-line and line-ground.

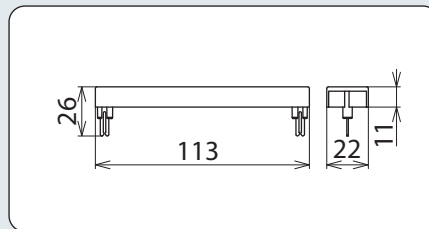


Type	GDT 230 B3
Part No.	907 218
Integrated into Part No.	907 400
Static sparkover voltage	230 V +/- 20%
D1 Total lightning impulse current (10/350 µs)	5 kA

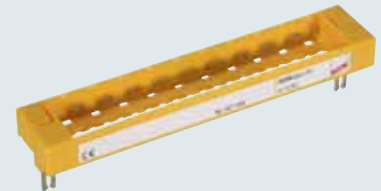
- Original replacement part for DRL 10
- Common arcing chamber of the poles for an optimised voltage protection level

Earthing Frame

Snap-on earthing frame for earthing and mounting of max. 10 DRL protective plugs. Plugs into a 10-pair disconnection block or DRL plug-in SPD block.



Dimension drawing EF 10 DRL



Type	EF 10 DRL
Part No.	907 498
Plugs into	LSA disconnection blocks or DRL SPD plug-in blocks
Earthing via	mounting frame or DRL SPD plug-in block
Enclosure material	polyamide PA 6.6
Colour	yellow

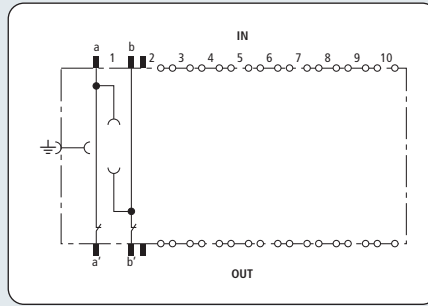
Label Holder

Universal label holder made of stainless steel for clear identification of LSA connections. Can be snapped onto DEHNrapid LSA plug-in SPD blocks, earthing frames with protective plugs or mounting frames with LSA SPD blocks of 2/10 type.

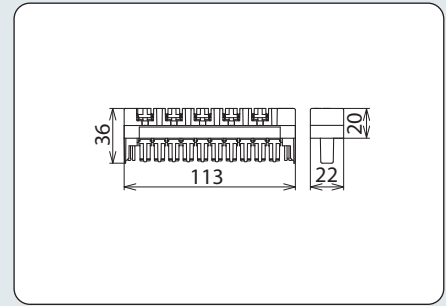


Type	SR DRL
Part No.	907 497
Plugs into	DRL B, EF DRL, LSA terminal blocks 2/10 (profile, with earth connecting clip)
Enclosure material	stainless steel
Colour	bare surface

- Universal label holder for labelling surge protective devices or LSA blocks
- Break-proof support made of corrosion-resistant stainless steel
- Easily replaceable label insert



Basic circuit diagram BM 10 DRL



Dimension drawing BM 10 DRL

- Integrated disconnection contacts
- For LSA disconnection blocks of 2/10 type
- Can be individually equipped with arresters

Plug-in SPD block (without SPDs) for 1 to max. 10 three-pole GDT 230 B3 ... gas discharge tubes. Also suitable for insertion of DRL protective plugs with earthing frame.

Type	BM 10 DRL
Part No.	907 499
Pluggable into	LSA disconnection blocks
Earthing via	mounting frame
Enclosure material	polyamide PA 6.6
Colour	grey

Accessory for DEHNrapid® LSA plug-in SPD Block (without SPDs)

Gas Discharge Tube

High-capacity replacement gas discharge tube for DRL 10 or BM 10 DRL.

Three-pole unit with common arcing chamber for a constant voltage protection level line-line and line-ground.

Type	GDT 230 B3	GDT 230 B3 FSD
Part No.	907 218	907 219
Integrated into Part No.	907 400	907 401
Visual fault indicator	—	✓
Fail-safe spring	—	✓



Label Holder

Universal label holder made of stainless steel for clear identification of LSA connections. Can be snapped onto DEHNrapid LSA plug-in SPD blocks, earthing frames with protective plugs or mounting frames with LSA SPD blocks of 2/10 type.

Type	SR DRL
Part No.	907 497
Material	Stainless steel



- Suitable for disconnection or terminal blocks of LSA systems of 2/10 type
- Equipped with individually tested gas discharge tubes for ten pairs
- Individually replaceable protection elements (gas discharge tubes)



Pluggable arresters for use in LSA systems of 2/10 type. For use as protection block for 10 pairs with individually replaceable protection elements.

Pluggable surge arresters for use as protection blocks in IT systems and devices which have to be connected via terminal or disconnection blocks using the LSA insulation displacement method. Installation onto terminal blocks, however, is the preferred method, as their contact forces provide better fixation – even in case of slight vibrations.

The surge arresters for 10 pairs can be easily installed and removed for testing purposes. Contact to earth via the mounting frame is automatically established as soon as the arrester is plugged in. After being overloaded, the protection elements can be individually replaced.

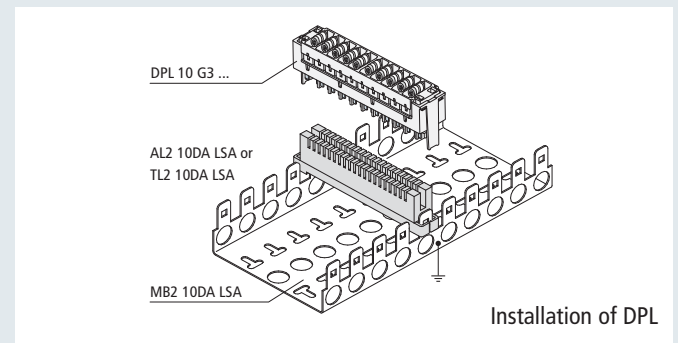


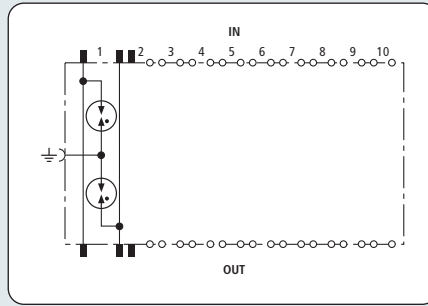
DPL 10 G3 family

The protection blocks consist of similar basic SPD blocks equipped and tested with different protection elements according to needs.

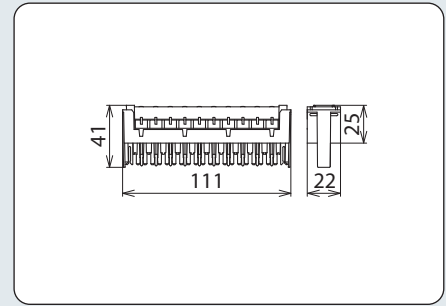
DPL 10 G3:
10 standard gas discharge tubes

DPL 10 G3 FSD:
10 gas discharge tubes with fail-safe function and visual indicator





Basic circuit diagram DPL 10 G3



Dimension drawing DPL 10 G3

- Powerful SPD block
- Types with/without fail-safe function or visual indicator
- For installation in conformity with the lightning protection zones concept at the boundaries from $0_B - 1$ and higher

SPD block for ten pairs with three-pole gas discharge tubes for almost all applications. FSD arresters feature a fail-safe function and additional visual indication after the fail-safe feature has been activated. Thus it can be immediately identified whether an arrester has to be replaced.

Type	DPL 10 G3 110	DPL 10 G3 110 FSD
Part No.	907 214	907 216
SPD class	TYPE 2	TYPE 2
Fault indicator	—	colour change
Nominal voltage (U_N)	110 V	110 V
Max. continuous operating d.c. voltage (U_C)	180 V	180 V
Max. continuous operating a.c. voltage (U_C)	127 V	127 V
Nominal current (I_n)	0.4 A	0.4 A
C2 Total nominal discharge current (8/20 μ s) (I_n)	10 kA	10 kA
C2 Nominal discharge current (8/20 μ s) per line (I_n)	5 kA	5 kA
Overstressed fault mode	10 kA (8/20): open line EN 61643-21: mode 3	10 kA (8/20 μ s): open line EN 61643-21: mode 3
Impulse reset	no backup fuse under nominal conditions	no backup fuse under nominal conditions
Voltage protection level line-PG for I_{imp} 10/350 μ s D1 (U_p)	≤ 600 V	≤ 600 V
Voltage protection level line-line for I_n C2 (U_p)	≤ 600 V	≤ 600 V
Voltage protection level line-PG for I_n C2 (U_p)	≤ 600 V	≤ 600 V
Voltage protection level line-line for 1 kV/ μ s C3 (U_p)	≤ 600 V	≤ 600 V
Voltage protection level line-PG for 1 kV/ μ s (U_p)	≤ 600 V	≤ 600 V
Capacitance line-line (C)	≤ 5 pF	≤ 5 pF
Capacitance line-PG (C)	≤ 5 pF	≤ 5 pF
Fail-safe function	—	gas discharge tube with spring contacts
Operating temperature range	-40°C...+80°C	-40°C...+80°C
Pluggable into	LSA disconnection and terminal blocks (type 2)	LSA disconnection and terminal blocks (type 2)
Earthing via	mounting frame	mounting frame
Enclosure material	polyamide	polyamide
Colour	grey	grey
Test standards	IEC 61643-21 / EN 61643-21	IEC 61643-21 / EN 61643-21

Accessory for DPL 10 G3

Gas Discharge Tube

High-capacity replacement gas discharge tubes for DPL 10 G3. Three-pole unit with common arc chamber for a constant voltage protection level for line-line and line-ground.

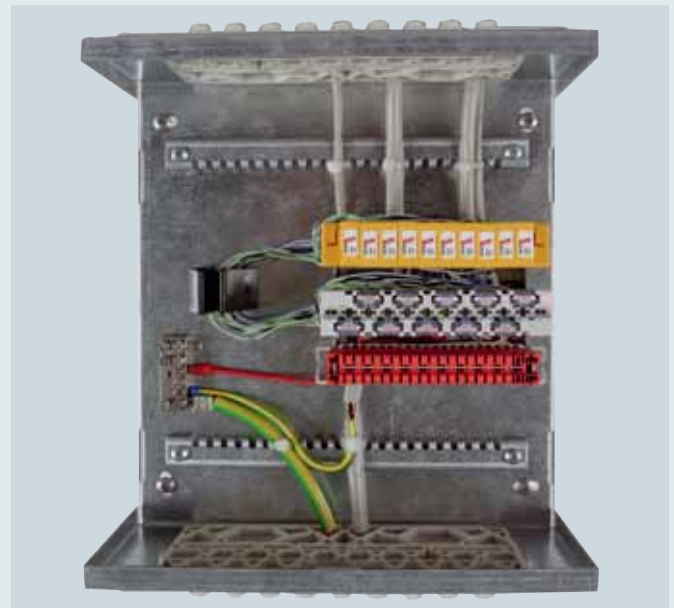


Type	GDT 230 G3	GDT 230 G3 FSD
Part No.	907 208	907 217
Integrated into Part No.	907 214	907 216
Visual fault indicator	—	✓
Fail-safe spring	—	✓

- Premounted enclosure system for wiring and protection components
- Tested lightning impulse current carrying capacity
- Optimised for equipotential bonding (surge arrester and shield connection)
- Metal enclosure, lockable against unauthorised access

DEHN Enclosure for Equipotential Bonding

Enclosure system for SPDs protecting IT equipment



DEHN enclosures for equipotential bonding (DPG) are lockable metal enclosures for installation of wiring and protection components. Available in four different sizes, the lightning current carrying enclosures provide terminals that allow to integrate surge arresters and shields into the equipotential bonding system.

Lightning current carrying enclosure with degree of protection IP 40 for different designs of distribution boards and for the insertion of surge arresters. The cover can be removed from the wall plate without tools and is equipped with a lock with cylinder quarter turn and a key. The C-shaped design of the wall plate allows side and front access during installation work. LSA mounting frames or DIN rails can be mounted on the wall plate with cable entry plates and cable rails.

Despite of a high packing density, structured cable management is ensured – crossing of cables with wires is avoided and the cables of e.g. the LSA blocks are clearly structured due to the 30 mm grid dimensions. For this kind of cabling, an optional shield connection system is available (constant force spring). The well-conceived earthing system permanently connects all conductive components of the enclosure system to the earthing block via mechanical contact or earth conductors.

DEHN enclosures for equipotential bonding (DPG) come in four different sizes, allowing the insertion of 3/6/12/22 LSA blocks. Even if 20/50/100/200 pairs are used, enough space is provided for the earthing module for inserting sheath wires.

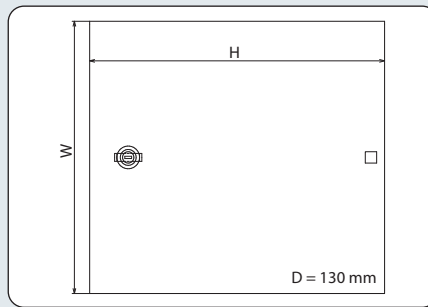
The shields of incoming lines can be contacted with SA KRF constant force springs in a space-saving way and with lightning current carrying capacity. All equipotential bonding conductors are led together in the central earthing block.



Shield connection with SA KRF



DEHN enclosures for equipotential bonding (DPG) come in 4 different sizes



DPG LSA is a completely premounted enclosure system with LSA mounting frame and allows optimised use of arresters and shield connection systems (constant force spring).

- Lightning current carrying earthing system for arresters and shield connection
- Integrated mounting frame for LSA blocks with a grid dimension of 30 mm
- Reserved space for uninterfered cabling and surge arresters

Type	DPG LSA 30 P	DPG LSA 60 P	DPG LSA 120 P	DPG LSA 220 P
Part No.	906 100	906 101	906 102	906 103
Carrying capacity of connection elements				
D1 Total lightning impulse current (10/350 µs) (I _{imp})	15 kA	30 kA	50 kA	50 kA
LSA mounting frame for	1 x 3 blocks 2/10	1 x 6 blocks 2/10	2 x 6 blocks 2/10	2 x 11 blocks 2/10
Grid dimension of mounting frame	30 mm	30 mm	30 mm	30 mm
Wiring systems	1 pc(s).	2 pc(s).	2 pc(s).	3 pc(s).
Cable entries	top / bottom	top / bottom	top / bottom	top / bottom
Cable rail	top / bottom	top / bottom	top / bottom	top / bottom
Lock	yes	yes	yes	yes
For mounting on	walls	walls	walls	walls
Degree of protection	IP 40	IP 40	IP 40	IP 40
Earthing via	earthing block	earthing block	earthing block	earthing block
Dimensions W x H x D	240 x 260 x 130 mm	240 x 350 x 130 mm	330 x 350 x 130 mm	330 x 500 x 130 mm
Enclosure material	sheet steel	sheet steel	sheet steel	sheet steel
Colour	RAL 9002	RAL 9002	RAL 9002	RAL 9002

Accessories for DEHN Enclosure for Equipotential Bonding

Self-bonding Rubber Tape

Roll with 9 m self-bonding rubber tape for wrapping around constant force springs for permanent corrosion protection.



Type	SKB 19 9M SW
Part No.	919 030
Colour	black

Constant Force Spring

Constant force springs allow solderless shield connections for equipotential bonding or lightning equipotential bonding. They can be installed subsequently without interrupting the line shield or requiring tools for installation. Approved for nuclear installations according to TÜV Certificate No. T12-04-ETL003 (TÜV = German Technical Inspectorate).



Type SA KRF ...	10 V2A	15 V2A	22 V2A	29 V2A	37 V2A
Part No.	919 031	919 032	919 033	919 034	919 035
Clamping range (mm)	4 - 10	9 - 15	14 - 22	18.5 - 29	23.5 - 37
Material	StSt	StSt	StSt	StSt	StSt

SPDs for LSA Technology

Well proven quality

- 45° angled blades in the disconnection block ensure a lower change in cross-section
- Enhanced stability of the conductor
- Enhanced corrosion resistance
- Further accessories available on request



The insulation displacement method is used for quickly connecting several lines at reasonable costs. This method is commonly used in telecommunications systems (e.g. Deutsche Telekom AG).

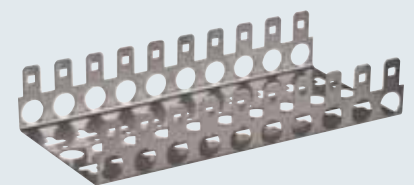
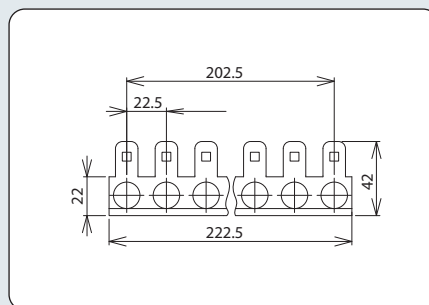
The blocks are suitable for connecting plastic-insulated wires with copper conductor material:

Conductor diameter: 0.4-0.8 mm

Outer diameter: 0.7-1.5 mm

After using wires with a conductor diameter of 0.65 mm, rewiring to smaller diameters is no longer possible.

Mounting Frame



Mounting frame for 10 LSA blocks of 2/10 type, total width: 104.5 mm

Type	MB2 10 LSA
Part No.	907 995
Dimensions	223 x 105 x 42 mm

Insertion Tool

Insertion tool with sensor for LSA technology for connecting the wires and simultaneously cutting them to the required length. With fold-out extraction hook and blade.

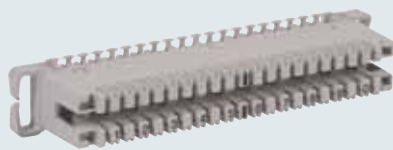
Type	AW2 LSA
Part No.	907 994
Colour	white



Terminal Block

SPDs for LSA Technology

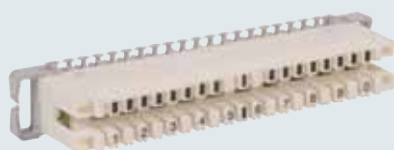
Type 2 for LSA technology for inseparably connecting 10 pairs each on the cable and routing side. Accommodates DPL 10 G3 arresters. Parallel protective circuit only.



Type	AL2 10DA LSA
Part No.	907 997
Enclosure material	PBT
Test standards	DIN 47608-1, -2
Conductor diameter (solid)	0.40 - 0.80 mm
Conductor diameter with insulation	0.70 - 1.50 mm
Contacting frequency for conductor diameters ≤ 0.65 mm	> 50 x
Contacting frequency for conductor diameters of 0.8 mm	≤ 50 x
Contact material	special brass
Contact surface	silver
Flame protection	UL 94 V-0
Insulation resistance	5 x 10,000 Mohms
Volume resistance of IPC terminal	< 10 mohms
Electric strength	2 kV / 50 Hz

Disconnection Block

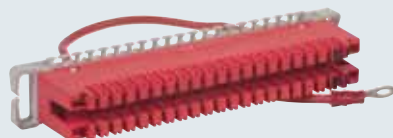
Type 2 for LSA technology for connecting 10 pairs each on the cable and routing side. Protection is provided between the disconnection contacts as soon as DRL components are plugged in. DPL 10 G3 arresters can also be plugged into the disconnection block.



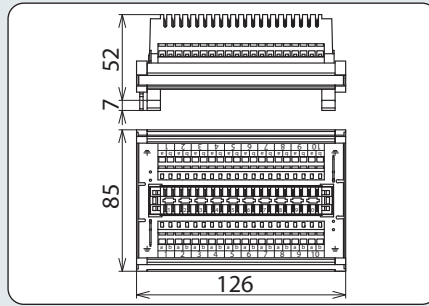
Type	TL2 10DA LSA
Part No.	907 996
Enclosure material	PBT
Test standards	DIN 47608-1, -2
Approvals	compliance with DTAG TS 0272/96
Conductor diameter (solid)	0.40 - 0.80 mm
Conductor diameter with insulation	0.70 - 1.50 mm
Contacting frequency for conductor diameters ≤ 0.65 mm	> 50 x
Contacting frequency for conductor diameters of 0.8 mm	≤ 50 x
Contact material	special brass
Contact surface	silver
Flame protection	UL 94 V-0
Insulation resistance	5 x 10.000 Mohms
Volume resistance of IPC terminal	< 10 mohms
Electric strength	2 kV / 50 Hz

Earthing Module

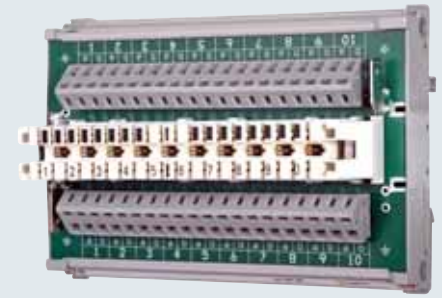
Type 2 for LSA technology for connecting 38 earth wires or shields.



Type	EL2 38EA LSA
Part No.	907 993
Colour	red



Dimension drawing



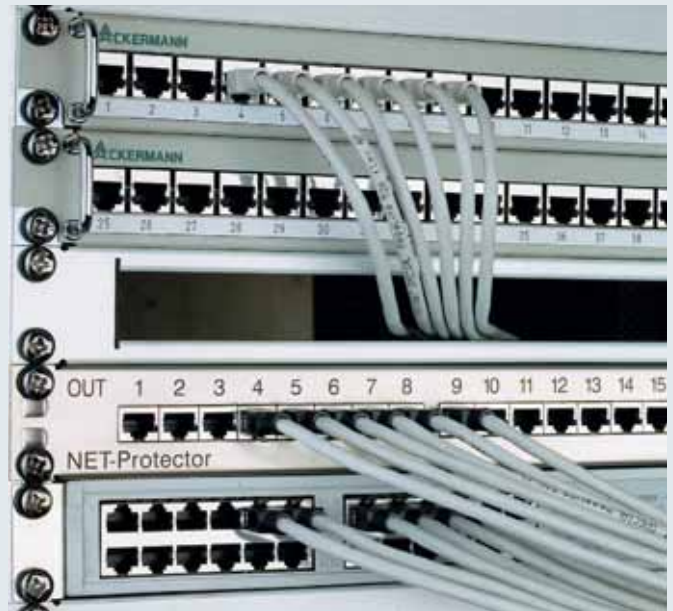
DIN rail mounted routing module for disconnection blocks with LSA disconnection block of 2/10 type as well as spring-loaded terminals for variable wire connection. DPL and DEHNrapid LSA surge arresters can be plugged into the routing module.

- Optional connection to LSA or spring-loaded terminals
- Routing of different wire diameters
- Adaption of DRL to DIN rail systems

Type	TL2 10DA CC
Part No.	907 991
Carrying capacity of connection components D1 Total lightning impulse current (10/350 μs) (I _{imp})	5 kA
Operating temperature range	-40°C...+80°C
Degree of protection	IP 20
For mounting on	35 mm DIN rails acc. to EN 60715
Connection (input / output)	spring or LSA / spring or LSA
Cross-sectional area of spring terminal, solid	0.08 mm ² - 2.5 mm ²
Cross-sectional area of spring terminal, flexible	0.08 mm ² - 2.5 mm ²
Earthing via	DIN rail / flat connector 6.3 mm
Enclosure material	PA / PBT
Conductor diameter (solid)	0.40 - 0.80 mm
Conductor diameter with insulation	0.70 - 1.60 mm
Volume resistance of IPC terminal	< 10 mohms



- Protects switches, hubs and telecommunications systems against overvoltage
- Allows for class D according to EN 50173 (Gigabit Ethernet)
- Patch panels can be flexibly equipped
- Retrofit versions with plug-in inputs and outputs



The 482.6 mm (19 inch) enclosure can be equipped with surge protection components for protecting network components (class D) or telecommunications systems.

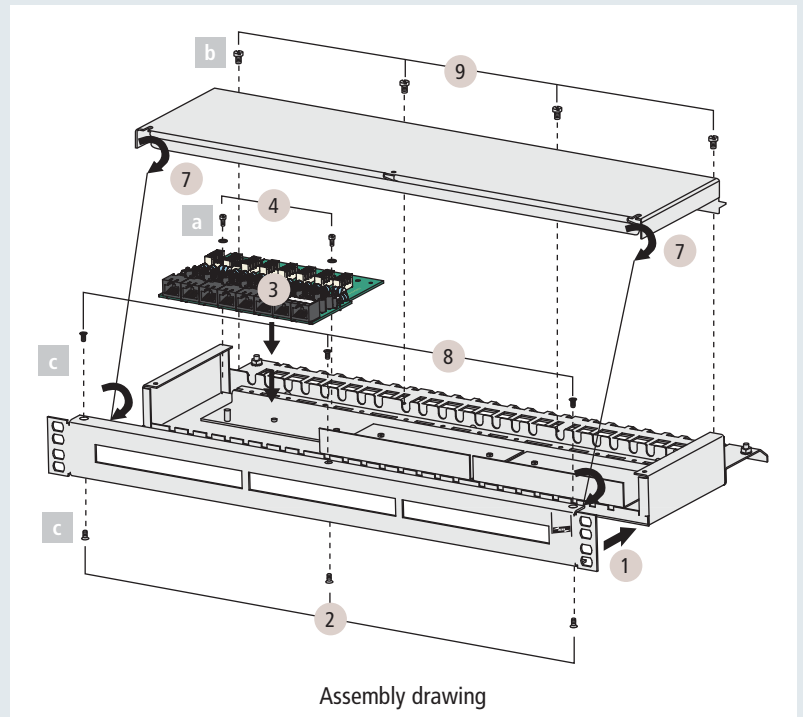
The 482.6 mm (19 inch) enclosure can be equipped with up to 3 surge protection components to protect active network components such as hubs, switches (class D) or telecommunication systems. NET Protector is typically used for Ethernet, Token Ring, E1 and telephone systems.

It only requires the space of one vertical module and is generally installed in terminal boards. It is inserted as a patch panel with surge protection or as a retrofit version for patching between the patch panel and the device to be protected.



GHMT Certificate

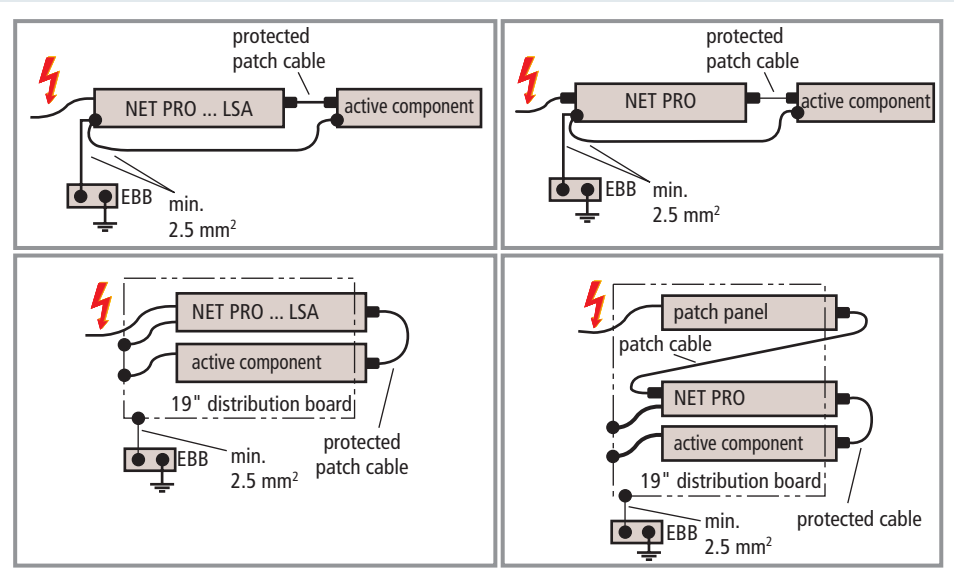
The NET Protector with its fully shielded 482.6 mm (19 inch) enclosure and its 4TP surge protection component allows class D networks to be established. This has been confirmed by the independent GHMT test institute.



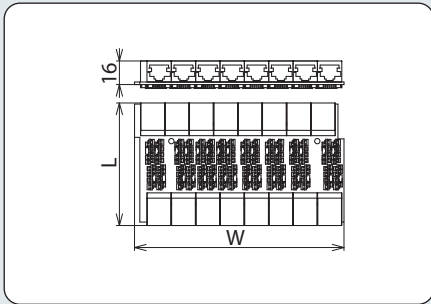
Assembly drawing

NET Protectors are modular in design. The empty enclosure can be optionally equipped with 1, 2 or 3 surge protection components.

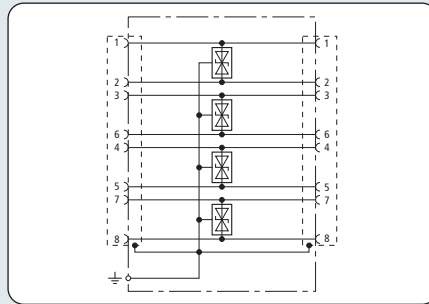
The surge protection components do not only have a different protective circuit, but are also connected differently. While the protected output is always designed as a RJ45 connection system, the input can be designed as insulation displacement or RJ45 system. Insulation displacement terminals are often used to equip a new installation which does not incorporate a patch panel yet. The RJ45 version is a retrofit version for existing systems and is patched easily between the patch panel and the active component.



LSA type as patch panel (left) / retrofit version (right)



Dimension drawing NET PRO 4TP



Basic circuit diagram NET PRO 4TP



Surge protection component fitted with eight shielded ports for universal cabling systems (class D). Multi-purpose solution since all four pairs (4 TP) are protected by a low-capacitance diode matrix per pair. To be installed into EG NET PRO 19" into distribution cabinets as a patch panel or retrofit version.

- GHMT certificate for class D channel link
- Low voltage protection level for all lines
- For installation in conformity with the lightning protection zones concept at the boundaries from 1 – 2 and higher

Type	NET PRO 4TP	NET PRO LSA 4TP	NET PRO 4TP 30
Part No.	929 035	929 036	929 037
SPD class	TYPE 3 P1	TYPE 3 P1	TYPE 4 P1
Nominal voltage (U _N)	5 V	5 V	24 V
Max. continuous operating d.c. voltage (U _c)	6 V	6 V	30 V
Max. continuous operating a.c. voltage (U _e)	4.2 V	4.2 V	21.1 V
Nominal current (I _N)	100 mA	100 mA	100 mA
C2 Nominal discharge current (8/20 μs) per port (I _n)	2.4 kA	2.4 kA	0.8 kA
C2 Nominal discharge current (8/20 μs) per line (I _n)	0.3 kA	0.3 kA	0.1 kA
Voltage protection level line-line for I _n C2 (U _p)	≤ 35 V	≤ 35 V	≤ 60 V
Voltage protection level line-PG for I _n C2 (U _p)	≤ 35 V	≤ 35 V	≤ 60 V
Voltage protection level line-line at 1 kV/μs C3 (U _p)	≤ 13 V	≤ 13 V	≤ 40 V
Voltage protection level line-PG at 1 kV/μs C3 (U _p)	≤ 13 V	≤ 13 V	≤ 40 V
Cut-off frequency line-line at 100 ohms (f _c)	165 MHz	170 MHz	300 MHz
Insertion loss at 100 MHz	< 0.4 dB	< 0.3 dB	< 0.4 dB
Capacitance line-line (C)	≤ 35 pF	≤ 35 pF	≤ 16 pF
Capacitance line-PG (C)	≤ 50 pF	≤ 50 pF	≤ 20 pF
Operating temperature range	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C
Degree of protection	IP 00	IP 00	IP 00
For mounting on	enclosure	enclosure	enclosure
Connection (input/output)	RJ45 shielded / RJ45 shielded	LSA / RJ45 shielded	RJ45 shielded / RJ45 shielded
Pinning	1/2, 3/6, 4/5, 7/8	1/2, 3/6, 4/5, 7/8	1/2, 3/6, 4/5, 7/8
Earthing via	enclosure	enclosure	enclosure
Dimensions (W x L)	135 x 77 mm	135 x 107 mm	135 x 77 mm
Test standards	IEC 61643-21 / EN 61643-21	IEC 61643-21 / EN 61643-21	IEC 61643-21 / EN 61643-21
Approvals	GHMT, GOST	GOST	GOST

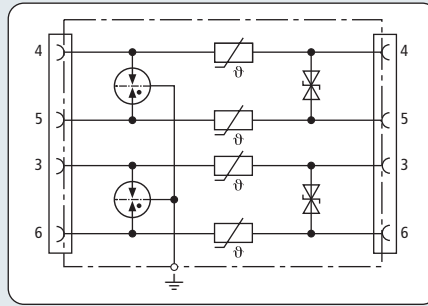
Accessory for NET Protector

482.6 mm (19 inch) Enclosure

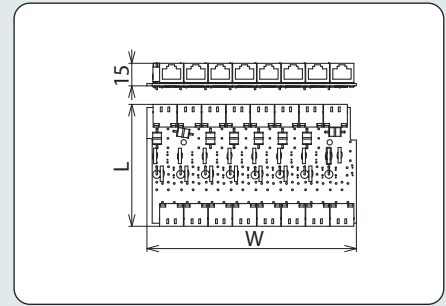
Fully shielded empty enclosure for max. 3 NET Protector protective boards.

Type	EG NET PRO 19"
Part No.	929 034
Dimensions	1 rack unit
Enclosure material	stainless steel front / galvanised sheet metal





Basic circuit diagram NET PRO TC



Dimension drawing NET PRO TC

- Patch panel or retrofit version
- Integrated protection against power crossing
- For installation in conformity with the lightning protection zones concept at the boundaries from $0_B - 2$ and higher

Surge protection component with eight unshielded ports for protecting telecommunications systems with analogue or system transmission from overvoltage and a.c. interference. PTC thermistors decouple the protection stages and thus additionally protect terminal equipment in case of power crossing. To be mounted into EG NET PRO 19" as retrofit or patch panel version (LSA).

Type	NET PRO TC 2	NET PRO TC 2 LSA
Part No.	929 071	929 072
SPD class	TYPE 2P2	TYPE 2P2
Nominal voltage (U_N)	130 V	130 V
Max. continuous operating d.c. voltage (U_C)	170 V	170 V
Max. continuous operating a.c. voltage (U_C)	120 V	120 V
Nominal current (I_N)	150 mA	150 mA
C2 Nominal discharge current (8/20 μ s) per port (I_n)	10 kA	20 kA
C2 Nominal discharge current (8/20 μ s) per line (I_n)	2.5 kA	5 kA
Voltage protection level line-line for I_n C2 (U_p)	≤ 250 V	≤ 275 V
Voltage protection level line-PG for I_n C2 (U_p)	≤ 600 V	≤ 600 V
Voltage protection level line-line at 1 kV/ μ s C3 (U_p)	≤ 230 V	≤ 230 V
Voltage protection level line-PG at 1 kV/ μ s C3 (U_p)	≤ 600 V	≤ 600 V
Series impedance per line	10 ohms	10 ohms
Cut-off frequency line-line (f_c)	10 MHz	10 MHz
Capacitance line-line (C)	≤ 300 pF	≤ 300 pF
Capacitance line-PG (C)	≤ 15 pF	≤ 25 pF
Operating temperature range	-40°C...+80°C	-40°C...+80°C
Degree of protection	IP 00	IP 00
For mounting on	enclosure	enclosure
Connection (input/output)	RJ45 / RJ45	LSA / RJ45
Pinning	4/5, 3/6	4/5, 3/6
Earthing via	enclosure	enclosure
Dimensions (W x L)	135 x 77 mm	135 x 107 mm
Test standards	IEC 61643-21 / EN 61643-21	IEC 61643-21 / EN 61643-21
Approvals	GOST	GOST

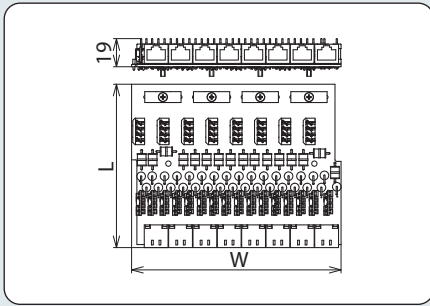
Accessory for NET Protector

482.6 mm (19 inch) Enclosure

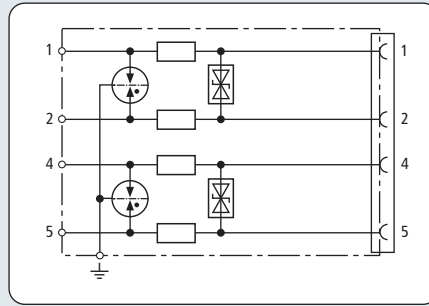
Fully shielded empty enclosure for max. 3 NET Protector protective boards.

Type	EG NET PRO 19"
Part No.	929 034
Dimensions	1 rack unit
Enclosure material	stainless steel front / galvanised sheet metal





Dimension drawing NET PRO E1 LSA



Basic circuit diagram NET PRO E1 LSA



- Patch panel version
- Compliance with G.703 specification
- For installation in conformity with the lightning protection zones concept at the boundaries from $0_B - 2$ and higher

Surge protection component (patch panel version) with energy-coordinated protective circuit for two pairs and eight unshielded ports for E1 interfaces. To be mounted into EG NET PRO 19" and in distribution cabinets upstream of the telecommunications system. For 2 MBit/s transmissions according to G.703.

Type	NET PRO E1 LSA G703
Part No.	929 075
SPD class	TYPE 2 P1
Nominal voltage (U_N)	5 V
Max. continuous operating d.c. voltage (U_C)	6 V
Max. continuous operating a.c. voltage (U_C)	4.2 V
Nominal current (I_L)	200 mA
C2 Nominal discharge current (8/20 μ s) per port (I_n)	20 kA
C2 Nominal discharge current (8/20 μ s) per line (I_n)	5 kA
Voltage protection level line-line for I_n C2 (U_p)	≤ 40 V
Voltage protection level line-PG for I_n C2 (U_p)	≤ 500 V
Voltage protection level line-line at 1 kV/ μ s C3 (U_p)	≤ 15 V
Voltage protection level line-PG at 1 kV/ μ s C3 (U_p)	≤ 450 V
Series impedance per line	1 ohm
Cut-off frequency line-line at 100 ohms (f_G)	210 MHz
Capacitance line-line (C)	≤ 20 pF
Capacitance line-PG (C)	≤ 25 pF
Operating temperature range	-40°C...+80°C
Degree of protection	IP 00
For mounting on	enclosure
Connection (input/output)	LSA / RJ45 socket
Pinning	1/2, 4/5
Earthing via	enclosure
Dimensions (W x L)	135 x 108 mm
Test standards	IEC 61643-21 / EN 61643-21
Approvals	GOST

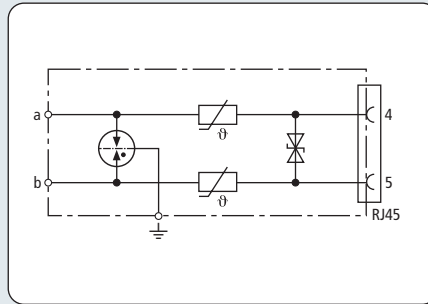
Accessory for NET Protector

482.6 mm (19 inch) Enclosure

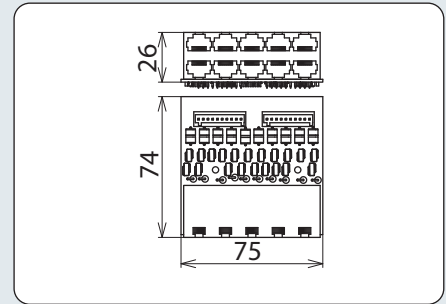
Fully shielded empty enclosure for max. 3 NET Protector protective boards.

Type	EG NET PRO 19"
Part No.	929 034
Dimensions	1 rack unit
Enclosure material	stainless steel front / galvanised sheet metal





Basic circuit diagram NET PRO 10X TC1 RST



Dimension drawing NET PRO 10X TC1 RST

- Extremely compact design
- Integrated protection against power crossing
- Installation in conformity with the lightning protection zones concept at the boundaries from $0_B - 2$ and higher

Surge protection component with ten ports for protecting telecommunications systems with analogue or system transmission from overvoltage and a.c. interference. Cage spring terminals which can be removed from the PCB as a block are situated on the input side, thus allowing to test the lines. For installation into EG NET PRO 10X 19" or EG NET PRO 10X 3HE enclosures.

Type	NET PRO 10X TC1 RST
Part No.	929 230
SPD class	TYPE 2 P2
Nominal voltage (U_N)	180 V
Max. continuous operating d.c. voltage (U_C)	180 V
Max. continuous operating a.c. voltage (U_C)	120 V
Nominal current at 20°C / 50°C / 70°C (I_N)	120 mA / 100 mA / 60 mA
C2 Nominal discharge current (8/20 μ s) per port (I_n)	10 kA
C2 Nominal discharge current (8/20 μ s) per line (I_n)	5 kA
Voltage protection level line-line for I_n C2 (U_p)	≤ 275 V
Voltage protection level line-PG for I_n C2 (U_p)	≤ 800 V
Voltage protection level line-line at 1 kV/ μ s C3 (U_p)	≤ 250 V
Voltage protection level line-PG at 1 kV/ μ s C3 (U_p)	≤ 600 V
A2 a.c. durability per line	5 A
Series impedance per line	3 ohms to 12 ohms
Cut-off frequency at 100 ohms (f_G)	55 MHz
Capacitance line-line (C)	≤ 50 pF
Capacitance line-PG (C)	≤ 25 pF
Operating temperature range	-40°C...+70°C
Degree of protection	IP 00
For mounting on	enclosure
Connection (input/output)	plug-in spring terminal / RJ45
Pinning	4/5
Earthing via	enclosure
Dimensions (W x L)	75 x 73 mm
Test standards	IEC 61643-21 / EN 61643-21

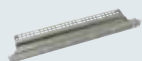
Accessory for NET Protector

482.6 mm (19 inch) Enclosure, unshielded

Unshielded 19 inch enclosure (one rack unit) with a max. capacity of five NET PRO 10X modules, two earth terminals and cable anchoring rail.

Accessories: two nuts, two flat washers and two toothed lock washers for installing the earth terminal.

Type	EG NET PRO 10X 19"
Part No.	929 234
Dimensions	1 rack unit
Enclosure material	StSt (V2A)



Accessory for NET Protector

482.6 mm (19 inch) Enclosure, (three Rack Units)

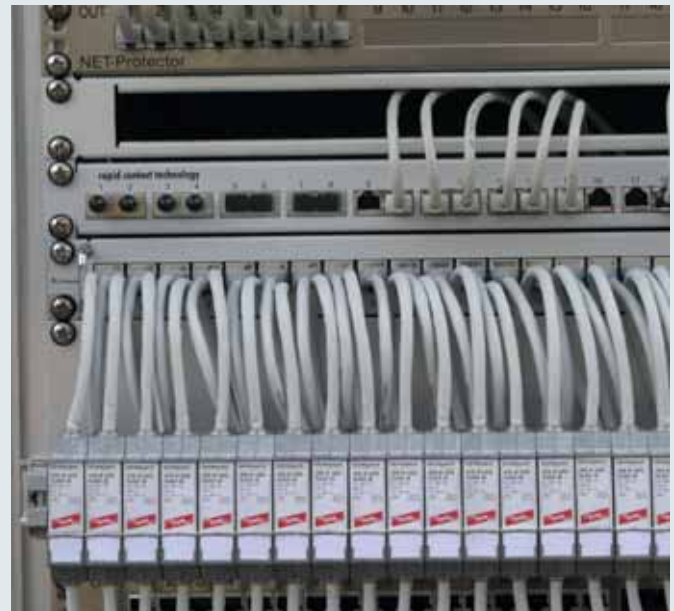
Unshielded 19 inch enclosure for vertical installation (three rack units) with a capacity of one NET PRO 10X, with earth connection.

Accessories: nut, flat washer and toothed lock washer for installing the earth terminal.

Type	EG NET PRO 10X 3HE
Part No.	929 235
Dimensions	3 rack units
Enclosure material	StSt (V2A)



- Patch cable with built-in surge protection
- Cat. 6 according to ISO/IEC 11801
- CAT 6A in the channel according to ANSI/TIA/EIA-568
- Power over Ethernet (PoE+ according to IEEE 802.3at)
- Easy to retrofit



DEHNpatch is the first Cat. 6A certified patch cable with built-in surge protection that can be used according to IEEE 802.3at for voltages up to 57 V.

Designed as a patch cable, DEHNpatch is easy to install. It is equally suited for use in new installations or retrofitting into existing installations with little effort.

DEHNpatch is simply plugged in between the patch panel and the active component (a switch for example) instead of the conventional patch cable. The snap-in mechanism of the supporting foot allows the device to be safely earthed via the DIN rail. For single applications, delivery includes a piece of DIN rail and fixing material. For multiple applications in 19" distribution boards, the DEHNpatch mounting set should be used which is available as accessory.

DEHNpatch fulfils the requirements of Category 6 and can be universally used for all data services up to nominal voltages of 57 V. It is well suited for existing services in offices and industrial environments such as Gigabit Ethernet, ATM or ISDN as well as future services such as Voice over IP and Power over Ethernet.

Due to its fully shielded design, DEHNpatch can be used in shielded and unshielded networks. Its width is similar to that of an RJ45 socket, allowing up to 24 devices to be installed next to one another in one series and to be integrated into a 19" rack.

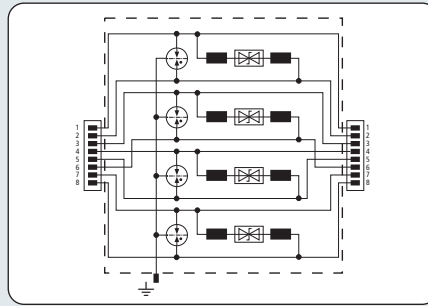
DEHNpatch with a total patch cable length of 3 m and 5 m is supplied as standard (other lengths available on request).



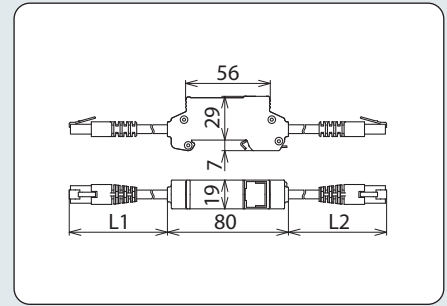
GHMT certificate DPA M CAT6 RJ45S 48



GHMT certificate DPA M CAT6 RJ45H 48



Basic circuit diagram DPA M CAT6 RJ45



Dimension drawing DPA M CAT6 RJ45

- Ideally suited for retrofitting, protection of all lines
- CAT 6A in the channel according to ANSI/TIA/EIA-568
- Power over Ethernet (PoE+ according to IEEE 802.3at)
- For installation in conformity with the lightning protection zones concept at the boundaries from $O_B - 2$ and higher

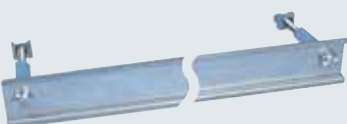
Universal arrester for Industrial Ethernet, Power over Ethernet (PoE+ according to IEEE 802.3at up to 57 V) and similar applications in structured cabling systems according to Cat. 6 and class E_A up to 500 MHz. Fully shielded type for DIN rail mounting.

Accessories: Earthing bracket with flat connector sleeve

Type	DPA M CAT6 RJ45S 48	DPA M CAT6 RJ45H 48
Part No.	929 100	929 110
SPD class	TYPE 2 P1	TYPE 2 P1
Nominal voltage (U_n)	48 V	48 V
Max. continuous operating d.c. voltage (U_c)	48 V	48 V
Max. continuous operating a.c. voltage (U_e)	34 V	34 V
Max. continuous d.c. voltage pair-pair (PoE) (U_c)	57 V	57 V
Nominal current (I_n)	1 A	1 A
C2 Nominal discharge current (8/20 μ s) line-line (I_n)	150 A	150 A
C2 Nominal discharge current (8/20 μ s) line-PG (I_n)	2.5 kA	2.5 kA
C2 Total nominal discharge current (8/20 μ s) line-PG (I_n)	10 kA	10 kA
C2 Nominal discharge current (8/20 μ s) pair-pair (PoE) (I_n)	150 A	150 A
Voltage protection level line-line for I_n C2 (U_p)	≤ 190 V	≤ 190 V
Voltage protection level line-PG for I_n C2 (U_p)	≤ 600 V	≤ 600 V
Voltage protection level line-line for I_n C2 (PoE) (U_p)	≤ 600 V	≤ 600 V
Voltage protection level line-line at 1 kV/ μ s C3 (U_p)	≤ 145 V	≤ 145 V
Voltage protection level line-PG at 1 kV/ μ s C3 (U_p)	≤ 500 V	≤ 500 V
Voltage protection level pair-pair at 1 kV/ μ s C3 (PoE) (U_p)	≤ 600 V	≤ 600 V
Insertion loss at 250 MHz	≤ 2 dB	≤ 3 dB
Capacitance line-line (C)	≤ 165 pF	≤ 250 pF
Capacitance line-PG (C)	≤ 255 pF	≤ 400 pF
Operating temperature range	-20°C ...+60°C	-20°C ...+60°C
Degree of protection	IP 20	IP 20
For mounting on	35 mm DIN rails acc. to EN 60715	35 mm DINs rail acc. to EN 60715
Connection (input/output)	RJ45 connecting lead / RJ45 connecting lead	RJ45 connecting lead / RJ45 connecting lead
Pinning	1/2, 3/6, 4/5, 7/8	1/2, 3/6, 4/5, 7/8
Connecting lead	A = approx. 0.5 m, G = approx. 3 m *)	A = approx. 1 m, G = approx. 5 m *)
Connector	Stewart 39 series	Hirose TM 21P
Earthing via	35 mm DIN rail acc. to EN 60715	35 mm DIN rail acc. to EN 60715
Enclosure material	zinc die casting	zinc die casting
Colour	bare surface	bare surface
Test standards	IEC 61643-21 / EN 61643-21	IEC 61643-21 / EN 61643-21
Transmission class according to ISO/IEC 11801	Cat. 6	Cat. 6
Transmission class according to EN 50173-1	Class E_A	Class E_A
Transmission class according to ANSI/TIA/EIA-568	Cat. 6A in the channel	Cat. 6A in the channel
Approvals	GHMT, GOST	GHMT, GOST
Accessories	fixing material	fixing material

*) Special lengths on request

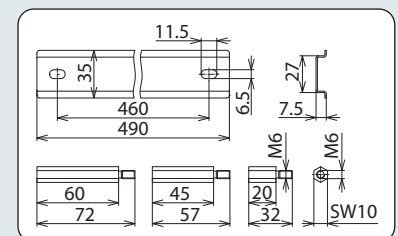
Accessory for DEHNpatch

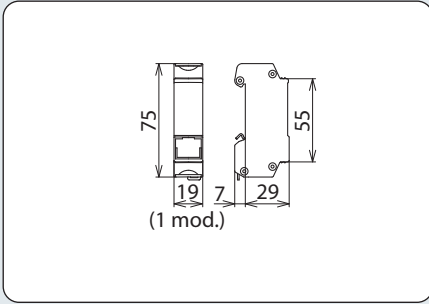


Mounting Set for DEHNpatch

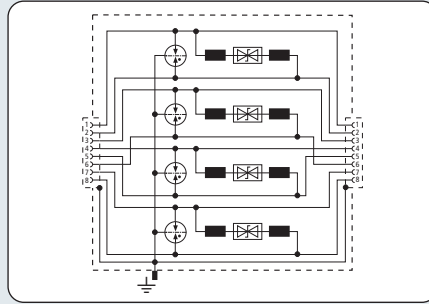
The set comprises a DIN rail for up to 24 DEHNpatch devices and different distance bolts with sliding nuts for installation into data distributors. To save space, the DIN rail can be mounted at the distributor panel or even upstream of the mounting sections in a 19" grid dimension.

Type	MS DPA
Part No.	929 199
Mounting in	19" cabinets





Dimension drawing DPA CLE



Basic circuit diagram DPA CLE



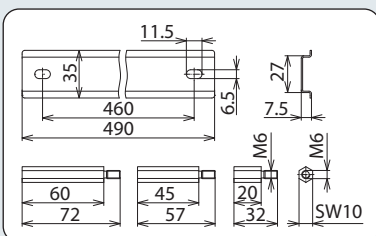
Universal arrester ideally suited for Industrial Ethernet, Power over Ethernet (PoE+ acc. to IEEE 802.3at up to 57 V) and similar applications in structured cabling systems according to class E up to 250 MHz. Protection of all pairs by means of powerful gas discharge tubes and one adapter filter matrix per pair. Fully shielded adapter with sockets for DIN rail mounting.

Accessories: Earthing bracket with flat connector sleeve

- Ideally suited for retrofitting, protection of all lines
- Cat. 6 in the channel (class E)
- Power over Ethernet (PoE+ according to IEEE 802.3at)
- For installation in conformity with the lightning protection zones concept at the boundaries from $O_B - 2$ and higher

Type	DPA M CLE RJ45B 48
Part No.	929 121
SPD class	TYPE 2 P1
Nominal voltage (U_N)	48 V
Max. continuous operating d.c. voltage (U_C)	48 V
Max. continuous operating a.c. voltage (U_E)	34 V
Max. continuous d.c. voltage pair-pair (PoE) (U_D)	57 V
Nominal current (I_N)	1 A
C2 Nominal discharge current (8/20 μ s) line-line (I_{n1})	150 A
C2 Nominal discharge current (8/20 μ s) line-PG (I_{n2})	2.5 kA
C2 Total nominal discharge current (8/20 μ s) line-PG (I_{n3})	10 kA
C2 Nominal discharge current (8/20 μ s) pair-pair (PoE) (I_{n4})	150 A
Voltage protection level line-line for I_{n1} C2 (U_p)	≤ 190 V
Voltage protection level line-PG for I_{n2} C2 (U_p)	≤ 600 V
Voltage protection level line-line for I_{n4} C2 (PoE) (U_p)	≤ 600 V
Voltage protection level line-line at 1 kV/ μ s C3 (U_p)	≤ 180 V
Voltage protection level line-PG at 1 kV/ μ s C3 (U_p)	≤ 500 V
Voltage protection level pair-pair at 1 kV/ μ s C3 (PoE) (U_p)	≤ 600 V
Insertion loss at 250 MHz	≤ 3 dB
Capacitance line-line (C)	≤ 30 pF
Capacitance line-PG (C)	≤ 25 pF
Operating temperature range	-40°C ... +80°C
Degree of protection	IP 10
For mounting on	35 mm DIN rails acc. to EN 60715
Connection (input/output)	RJ45 socket / RJ45 socket
Pinning	1/2, 3/6, 4/5, 7/8
Earthing via	35 mm DIN rail acc. to EN 60715
Enclosure material	zinc die casting
Colour	bare surface
Test standards	IEC 61643-21 / EN 61643-21
Approvals	CSA, UL, GOST
Accessories	fixing material

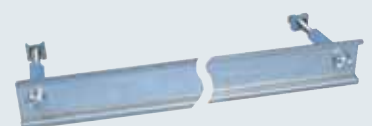
Accessory for DEHNpatch



Mounting Set for DEHNpatch

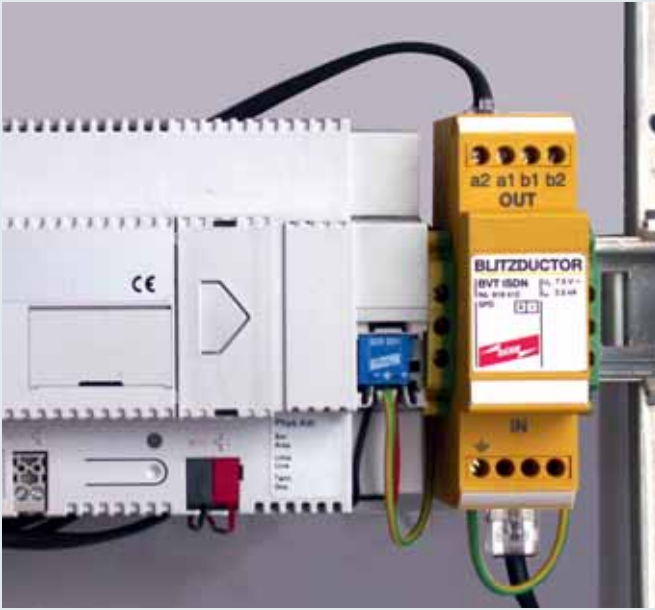
The set comprises a DIN rail for up to 24 DEHNpatch devices and different distance bolts with sliding nuts for installation into data distributors. To save space, the DIN rail can be mounted at the distributor panel or even upstream of the mounting sections in a 19" grid dimension.

Type	MS DPA
Part No.	929 199
Mounting in	19" cabinets



Surge arrester

SPDs for RJ Connection



DIN rail mounted surge arrester for terminal equipment of telecommunications systems as well as telephone systems with RJ plug.

DIN rail mounted surge arrester for telecommunications terminal equipment and telephone systems with RJ plug. They are often used in instal-

- Ideally suited for DIN rail mounted modems or gateways
- Ease of installation due to RJ sockets
- Adaptable to suit the installation environment with additional screw terminals

lations upstream of residential gateways (TC/EIB interface) or for protecting DIN rail mounted industrial modems.



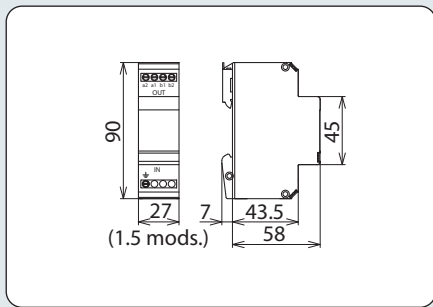
BLITZDUCTOR VT TC1

RJ sockets and screw terminals at the input and output of BVT TC 1 surge arresters allow for universal use, e.g. for installation upstream of NTBAs by means of screw wiring or upstream of modems and telecommunications systems by means of screw/plug-in connection.

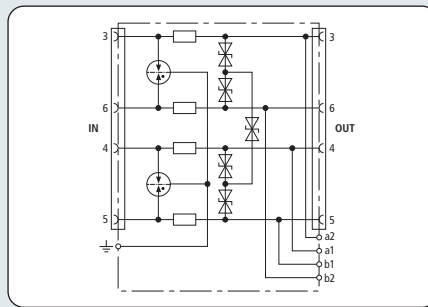


BLITZDUCTOR VT ISDN

The DIN rail mounted surge arresters were developed for installation-friendly protection of the S_0 input of residential gateways. The integrated connection system at the protected output allows wiring of two protected outgoing ISDN bus circuits.



Dimension drawing BVT ISDN



Basic circuit diagram BVT ISDN



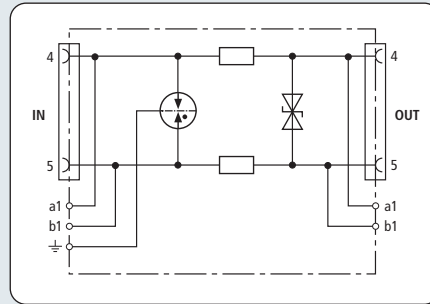
- RJ45 sockets
- Additional screw terminals at the output for the ISDN lines
- For installation in conformity with the lightning protection zones concept at the boundaries from $O_B - 2$ and higher

Energy-coordinated surge arrester for ISDN S_0 buses with RJ45 plugs and additional protection of the remote power supply. The additional screw terminals at the protected output allows double wiring of the S_0 bus.

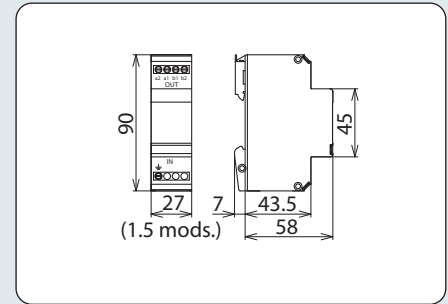
Type	BVT ISDN
Part No.	918 410
SPD class	TYPE 2P1
Nominal voltage (U_N)	5 V
Nominal voltage pair-pair (U_N)	40 V
Max. continuous operating d.c. voltage (U_C)	7.5 V
Max. continuous operating d.c. voltage pair-pair (U_C)	60 V
Nominal current (I_n)	200 mA
C2 Total nominal discharge current (8/20 μ s) (I_n)	10 kA
C2 Nominal discharge current (8/20 μ s) per line (I_n)	2.5 kA
Voltage protection level line-line for I_n C2 (U_p)	≤ 30 V
Voltage protection level line-PG for I_n C2 (U_p)	≤ 600 V
Voltage protection level pair-pair for I_n C2 (U_p)	≤ 130 V
Voltage protection level line-line at 1 kV/ μ s C3 (U_p)	≤ 17 V
Voltage protection level line-PG at 1 kV/ μ s C3 (U_p)	≤ 600 V
Voltage protection level pair-pair at 1 kV/ μ s C3 (U_p)	≤ 100 V
Series impedance per line	1.0 ohm
Cut-off frequency line-line (f_G)	1.7 MHz
Capacitance line-line (C)	≤ 3.3 nF
Capacitance line-PG (C)	≤ 15 pF
Capacitance pair-pair (C)	≤ 600 pF
Operating temperature range	-40°C...+80°C
Degree of protection	IP 10
For mounting on	35 mm DIN rails acc. to EN 60715
Connection (input/output)	RJ45 / RJ45 or terminals
Pinning	3/6, 4/5
Cross-sectional area, solid	0.08 - 2.5 mm ²
Cross-sectional area, flexible	0.08 - 2.5 mm ²
Earthing via	terminal
Enclosure material	thermoplastic, UL 94 V-0
Colour	yellow
Test standards	IEC 61643-21 / EN 61643-21
Approvals	GOST

BVT TC

SPDs for RJ Connection



Basic circuit diagram BVT TC



Dimension drawing BVT TC

- Pins of RJ sockets compatible with RJ12
- Additional screw terminals for a/b lines
- For installation in conformity with the lightning protection zones concept at the boundaries from $0_B - 2$ and higher

Energy-coordinated leakage-current-free surge arrester for a/b lines, ISDN U_{k0} or ADSL with RJ45 plugs and additional screw terminals. Pinning of the RJ45 sockets is compatible with RJ11/12. The parallel screw terminals are more robust than the RJ45 sockets and increase the total nominal discharge current to 10 kA.

Type	BVT TC 1
Part No.	918 411
SPD class	TYPE 2 P2
Nominal voltage (U_N)	130 V
Max. continuous operating d.c. voltage (U_C)	170 V
Nominal current (I_n)	200 mA
C2 Total nominal discharge current (8/20 μ s) (I_n)	5 kA
C2 Nominal discharge current (8/20 μ s) per line (I_n)	2.5 kA
Voltage protection level line-line for I_n C2 (U_p)	≤ 275 V
Voltage protection level line-PG for I_n C2 (U_p)	≤ 600 V
Voltage protection level line-line at 1 kV/ μ s C3 (U_p)	≤ 240 V
Voltage protection level line-PG at 1 kV/ μ s C3 (U_p)	≤ 600 V
Series impedance per line	4.7 ohms
Cut-off frequency line-line (f_c)	17 MHz
Capacitance line-line (C)	≤ 300 pF
Capacitance line-PG (C)	≤ 15 pF
Operating temperature range	-40°C...+80°C
Degree of protection	IP 10
For mounting on	35 mm DIN rails acc. to EN 60715
Connection (input/output)	RJ45 or terminals / RJ45 or terminals
Pinning	4/5
Cross-sectional area, solid	0.08 - 2.5 mm ²
Cross-sectional area, flexible	0.08 - 2.5 mm ²
Earthing via	screw terminal
Enclosure material	thermoplastic, UL 94 V-0
Colour	yellow
Test standards	IEC 61643-21 / EN 61643-21
Approvals	GOST

- Surge arrester for ISDN or Ethernet applications
- Minimum space required for flush mounting
- Ideally suited for Touch Manager wave (residential gateway)



Flush-mounted surge arrester used in LAN interfaces

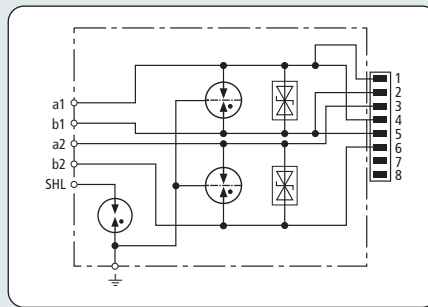
DSM TM surge arresters are installed close to terminal equipment and are designed for Touch Manager wave (Siemens). The surge arresters are integrated in flush-mounted or small distribution boards and connected to the local equipotential bonding of the terminal equipment. Because of

the universal pin assignment options of the pluggable RJ45 output, it can be used for protecting both ISDN S₀ and Ethernet 10 BT (class C cabling) applications. The screw terminals at the input can be connected to both rigid and flexible conductors or shields.

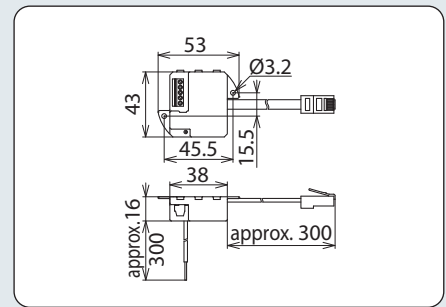
A self-adhesive fixing strip and a four-pole plug-in distribution terminal are included in delivery.



Scope of delivery of DSM TM



Basic circuit diagram DSM TM



Dimension drawing DSM TM

- Indirect shield earthing
- Installation accessories included
- For installation in conformity with the lightning protection zones concept at the boundaries from $O_B - 2$ and higher

Low-capacitance surge arrester with high discharge capacity and low protection level between the signal lines. For IT installations of class C or services such as Ethernet 10 BT or ISDN S_0 interfaces. With screw terminal on the input side and RJ45 plug on the output side. No leakage pickups due to indirect shield earthing.

Type	DSM TM
Part No.	924 274
SPD class	TYPE 2 P1
Nominal voltage (U_N)	5 V
Max. continuous operating d.c. voltage (U_C)	6 V
Max. continuous operating a.c. voltage (U_C)	4.2 V
Nominal current (I_N)	200 mA
C1 Nominal discharge current (8/20 μ s) line-line (I_n)	500 A
C2 Nominal discharge current (8/20 μ s) line-PG (I_n)	5 kA
C2 Total nominal discharge current (8/20 μ s) line-PG (I_n)	10 kA
Voltage protection level line-line for I_n C1 (U_p)	≤ 28 V
Voltage protection level line-PG for I_n C2 (U_p)	≤ 600 V
Voltage protection level shield-PG for I_n C2 (U_p)	≤ 600 V
Voltage protection level line-line at 1 kV/ μ s C3 (U_p)	≤ 11 V
Voltage protection level line-PG at 1 kV/ μ s C3 (U_p)	≤ 380 V
Voltage protection level shield-PG at 1 kV/ μ s C3 (U_p)	≤ 600 V
Cut-off frequency (f_G)	55 MHz
Capacitance line-line (C)	≤ 75 pF
Capacitance line-PG (C)	≤ 20 pF
Operating temperature range	-40°C...+80°C
Degree of protection	IP 20
Connection (input/output)	screw terminal / RJ45 connecting lead
Pinning	Ethernet 1/2, 3/6 or ISDN 4/5, 3/6
Cross-sectional area, solid	0 - 1.0 mm ²
Cross-sectional area, flexible	0 - 1.0 mm ²
Tightening torque (terminal)	0.3 Nm
Earthing via	lead 1.0 mm ²
Enclosure material	polyamide PA 6.6
Colour	yellow
Test standards	IEC 61643-21 / EN 61643-21
Approvals	GOST
Accessories	adhesive pad, socket terminal

Surface-Mounted SPDs

Universal lightning current / surge arrester

- **Combined lightning current and surge arrester**
 - Capable of carrying lightning currents up to 10 kA (10/350 μ s)
 - Low voltage protection level, also suited for the protection of terminal equipment
 - For installation in conformity with the lightning protection zones concept at the boundaries from $O_A - 2$ and higher
- **actiVsense technology**
 - Automatically detects the signal voltage from 0 to 180 V
 - Optimally adapts the voltage protection level to the currently applied signal
 - Adapted voltage protection level allows terminal equipment to be protected
- **Universal use**
 - One arrester type for two different signal circuits
 - Suitable for wall mounting, degree of protection IP 65
 - Easy retrofitting



DEHNbox used for a telecommunication connection (example: U_{k0} interface)

The compact DEHNbox combined lightning current and surge arrester is designed for protecting information and automation equipment and systems. Due to its new actiVsense technology, the nominal voltage is not specified. This allows the arrester to be used for voltages ranging from 0 to 180 V with a ± 5 V/50 MHz signal voltage. The nominal current is limited to 100 mA which is completely sufficient for information technology systems.

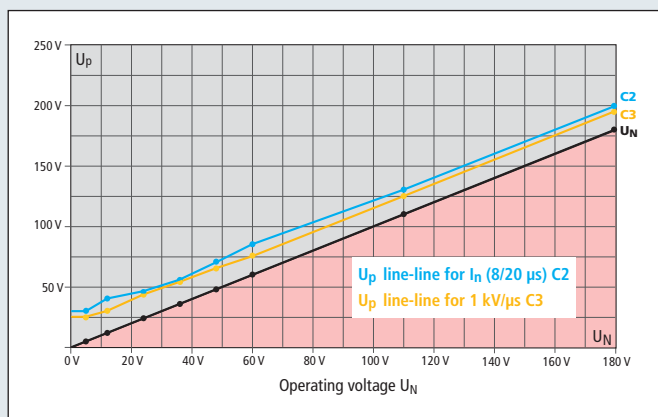
Its innovative actiVsense technology allows the arrester to detect the signal voltage and to automatically adapt its voltage protection level to this voltage. This makes the arrester ideal for applications where changing or slowly fluctuating signal levels (≤ 400 Hz) are to be expected. In case of interference, DEHNbox arresters have an adapted minimal residual voltage for every signal voltage to provide maximum protection for devices and system circuits connected to them.

DEHNbox is available in two versions. The four-pole version provides protection for two separate balanced interfaces, that is the arrester automatically detects the operating / signal voltage for every pair and optimally adapts the voltage protection level for every signal circuit. This allows to protect two different balanced interfaces by means of a single

arrester, thus reducing installation time, saving costs and reducing the number of arresters to be used. If only one signal interface is to be protected, a two-pole version can be used for a balanced data interface (one pair).

With its surface-mounted plastic enclosure with integrated fixing lugs, DEHNbox is ideally suited for wall mounting and can be easily retrofitted into existing equipment and systems. The IP 65 degree of protection allows the arresters to be used in harsh environments such as in moist environments. Cables are therefore entered via easy-to-install self-sealing rubber membranes. These membranes allow easy and fast installation and prevent the ingress of moisture and dust. Both the line wires and an installed line shield can be contacted by means of spring-loaded terminals without the use of screws. Two separate terminals allow a line shield to be directly or indirectly connected to the equipotential bonding system.

The arresters are ideally suited for domestic and industrial use in information technology transmission systems such as telecommunication, bus and measuring and control systems.



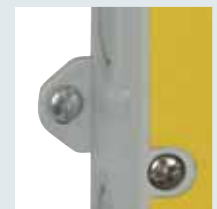
Voltage protection level diagram DEHNbox



Self-sealing rubber membranes



Spring-loaded terminals allow lines to be connected without screws

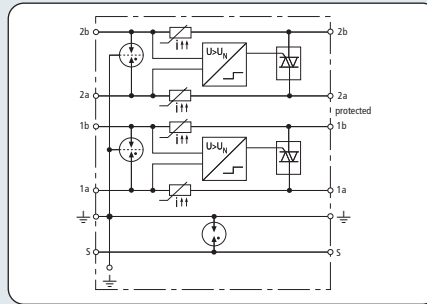


Fixing lugs on the enclosure for wall mounting

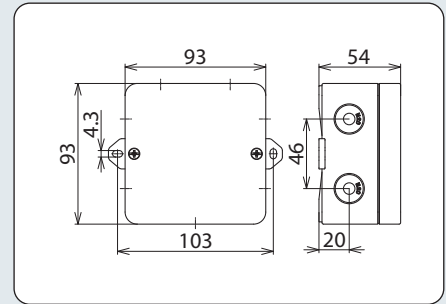
DBX U4 KT BD S 0-180

Surface-Mounted SPDs

NEW



Basic circuit diagram DBX U4 KT BD S 0-180

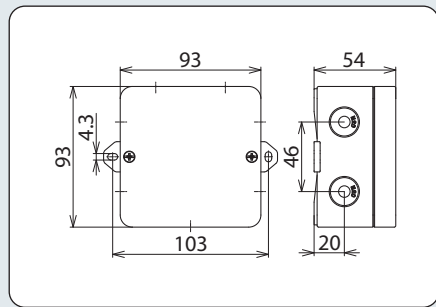


Dimension drawing DBX U4 KT BD S 0-180

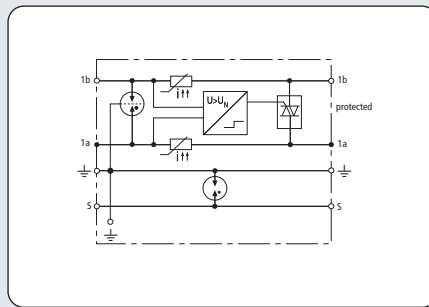
- Universal voltage type with actiVsense technology
- Suitable for wall mounting, IP65
- For installation in conformity with the lightning protection zones concept at the boundaries from 0_A – 2 and higher

Compact combined lightning current and surge arrester in a surface-mounted plastic enclosure with actiVsense technology for protecting two pairs with the same or a different signal voltage of galvanically isolated balanced interfaces. Direct or indirect shield earthing.

Type	DBX U4 KT BD S 0-180
Part No.	922 400
SPD class	TYPE 1 P1
Nominal voltage (U _N)	0 - 180 V
Frequency of the nominal voltage (f _{UN})	0 - 400 Hz
Max. continuous operating d.c. voltage (U _C)	180 V
Permissible superimposed signal voltage (U _{signal})	≤ +/- 5 V
Cut-off frequency line-line (U _{signal} , balanced 100 ohms) (f _c)	50 MHz
Nominal current at 80°C I _l (according to max. short-circuit current)	100 mA
D1 Total lightning impulse current (10/350 μs) (I _{imp})	10 kA
D1 Lightning impulse current (10/350 μs) per line (I _{imp})	2.5 kA
C2 Total nominal discharge current (8/20 μs) (I _n)	20 kA
C2 Nominal discharge current (8/20 μs) per line (I _n)	10 kA
Voltage protection level line-line for I _n C2 (U _p)	see diagram, line C2
Voltage protection level line-line at 1 kV/μs C3 (U _p)	see diagram, line C3
Voltage protection level line-line for I _{imp} D1 (U _p)	≤ U _N + 50 V
Voltage protection level line-PG for D1/C2/C3	≤ 550 V
Series impedance per line	≤ 9 ohms; typically 7.9 ohms
Capacitance line-line (C)	≤ 80 pF
Capacitance line-PG (C)	≤ 70 pF
Operating temperature range	-25°C...+40°C
Degree of protection (arrester plugged-in)	IP 65
Dimensions (L x W x H)	93 x 93 x 55 mm
Enclosure material	polycarbonate
Colour	grey
Test standards	IEC 61643-21 / EN 61643-21



Dimension drawing DBX U2 KT BD S 0-180



Basic circuit diagram DBX U2 KT BD S 0-180



NEW

Compact combined lightning current and surge arrester in a surface-mounted plastic enclosure with actiVsense technology for protecting one pair of galvanically isolated balanced interfaces. Direct or indirect shield earthing.

- Universal voltage type with actiVsense technology
- Suitable for wall mounting, IP65
- Installation in conformity with the lightning protection zones concept at the boundaries from 0_A – 2 and higher

Type	DBX U2 KT BD S 0-180
Part No.	922 200
SPD class	TYPE 1P1
Nominal voltage (U _N)	0 - 180 V
Frequency of the nominal voltage (f _{UN})	0 - 400 Hz
Max. continuous operating d.c. voltage (U _C)	180 V
Permissible superimposed signal voltage (U _{signal})	≤ +/- 5 V
Cut-off frequency line-line (U _{signal} , balanced 100 ohms) (f _C)	50 MHz
Nominal current at 80°C I _n (according to max. short-circuit current)	100 mA
D1 Total lightning impulse current (10/350 μs) (I _{imp})	9 kA
D1 Lightning impulse current (10/350 μs) per line (I _{imp})	2.5 kA
C2 Total nominal discharge current (8/20 μs) (I _n)	20 kA
C2 Nominal discharge current (8/20 μs) per line (I _n)	10 kA
Voltage protection level line-line for I _n C2 (U _p)	see diagram, line C2
Voltage protection level line-line at 1 kV/μs C3 (U _p)	see diagram, line C3
Voltage protection level line-line for I _{imp} D1 (U _p)	≤ UN + 50 V
Voltage protection level line-PG for D1/C2/C3	≤ 550 V
Series impedance per line	≤ 9 ohms; typically 7.9 ohms
Capacitance line-line (C)	≤ 80 pF
Capacitance line-PG (C)	≤ 70 pF
Operating temperature range	-25°C...+40°C
Degree of protection (arrester plugged-in)	IP 65
Dimensions (L x W x H)	93 x 93 x 55 mm
Enclosure material	polycarbonate
Colour	grey
Test standards	IEC 61643-21 / EN 61643-21

Surge arrester

Surface-Mounted SPDs



Surface-mounted surge arrester for terminal equipment of telecommunications systems as well as telephone systems with RJ plug.

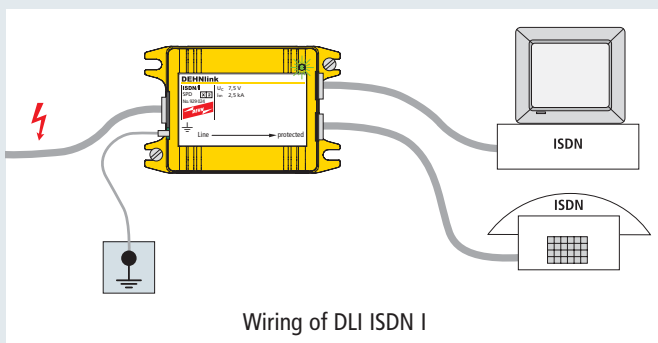
The surface-mounted surge arresters with a modern design particularly protect modems and telephone systems with RJ plugs. The plug-in terminals allow easy installation.

- Surface-mounted surge protective device for telecommunication systems
- Quick installation due to plug-in terminals
- Different interface-specific types

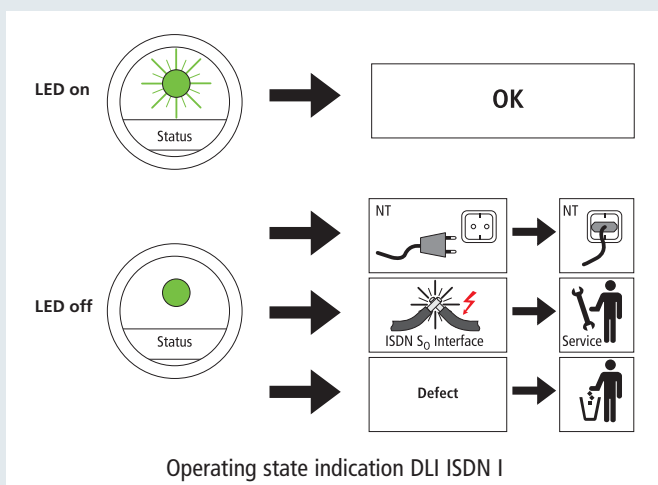


Devices with and without operating state indication

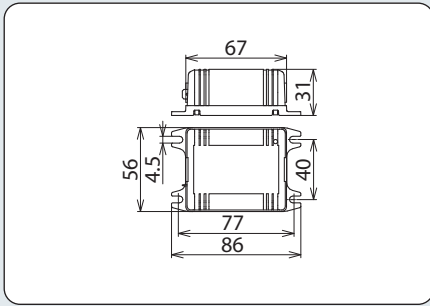
Compared to conventional devices (... ECO), the different ...I types have an additional LED indicating the supply voltage. This helps to immediately recognise system failures. Furthermore, a wide range of accessories such as connecting cables or fixing material is available.



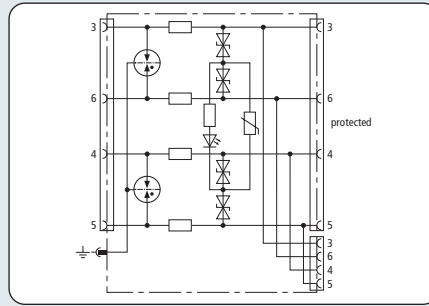
Their integrated connection system allows DLI ISDN I arresters to protect two terminal devices at the same time. The operating state indicator only lights up if the NTBA is also connected to the power supply system. No indication is provided during emergency operation (remote supply of telecommunication network operator).



The operating state indicator informs on the proper operation of the device. In the event of a fault, the connections and cables have to be checked. If no installation fault is identified, the arrester has been overloaded and must be replaced.



Dimension drawing DLI ISDN I



Basic circuit diagram DLI ISDN I



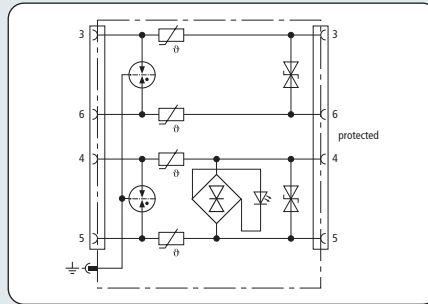
- Two protected outputs
- Surge protection and LED indication for the remote supply included
- For installation in conformity with the lightning protection zones concept at the boundaries from $O_B - 2$ and higher

Energy-coordinated surge arrester with two protected ISDN S_0 outputs and operating state indication (LED) of the remote supply voltage. No indication during emergency operation (supply from telephone network only). Connecting cable and mounting material included.

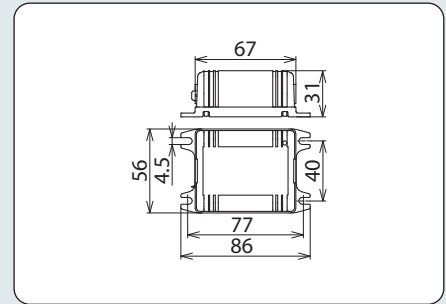
Type	DLI ISDN I
Part No.	929 024
SPD class	TYPE 2P1
Nominal voltage (U_N)	5 V
Nominal voltage pair-pair (U_N)	40 V
Max. continuous operating d.c. voltage (U_c)	7.5 V
Max. continuous operating a.c. voltage (U_c)	5.2 V
Max. continuous d.c. voltage pair-pair (U_c)	45 V
Nominal current (I_n)	200 mA
C2 Total nominal discharge current (8/20 μ s) (I_n)	10 kA
C2 Nominal discharge current (8/20 μ s) per line (I_n)	2.5 kA
Voltage protection level line-line for I_n C2 (U_p)	≤ 30 V
Voltage protection level line-PG for I_n C2 (U_p)	≤ 600 V
Voltage protection level pair-pair for I_n C2 (U_p)	≤ 180 V
Voltage protection level line-line at 1 kV/ μ s C3 (U_p)	≤ 17 V
Voltage protection level line-PG at 1 kV/ μ s C3 (U_p)	≤ 600 V
Voltage protection level pair-pair at 1 kV / μ s C3 (U_p)	≤ 100 V
Series impedance per line	1 ohm
Cut-off frequency line-line	2 MHz
Capacitance line-line (C)	≤ 3 nF
Capacitance line-PG (C)	≤ 15 pF
Operating temperature range	-40°C...+80°C
Degree of protection	IP 20
Connection (input/output)	RJ45 / 2 x RJ45
Pinning	3/6, 4/5
Earthing via	flat connector 6.3 mm
Enclosure material	polyamide PA 6.6
Colour	yellow
Test standards	IEC 61643-21 / EN 61643-21
Approvals	GOST
Accessories	connecting cable, mounting material

DLI TC I

Surface-Mounted SPDs



Basic circuit diagram DLI TC 2 I

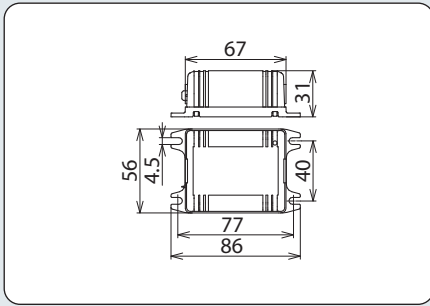


Dimension drawing DLI TC 2 I

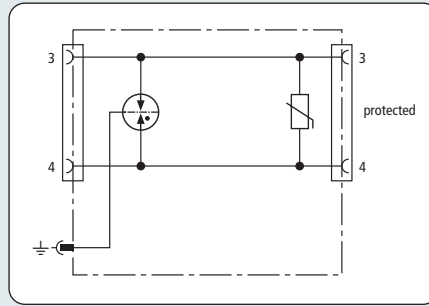
- LED indicates supply voltage
- Integrated protection against power crossing
- For installation in conformity with the lightning protection zones concept at the boundaries from $0_B - 2$ and higher

Two-stage surge arrester with overcurrent protection for analogue or system telephones with operating state indication (LED). Even protects from alternating current interference. Pinning compatible with RJ11/12 plugs. Connecting cable and mounting material included.

Type	DLI TC 2 I
Part No.	929 028
SPD class	TYPE 2 P2
Nominal voltage (U_N)	110 V
Max. continuous operating d.c. voltage (U_C)	170 V
Max. continuous operating a.c. voltage (U_C)	120 V
Nominal current (I_n)	150 mA
C2 Total nominal discharge current (8/20 μ s) (I_n)	10 kA
C2 Nominal discharge current (8/20 μ s) per line (I_n)	2.5 kA
Voltage protection level line-line for I_n C2 (U_p)	≤ 250 V
Voltage protection level line-PG for I_n C2 (U_p)	≤ 600 V
Voltage protection level line-line at 1 kV/ μ s C3 (U_p)	≤ 230 V
Voltage protection level line-PG at 1 kV/ μ s C3 (U_p)	≤ 600 V
Series impedance per line	10 ohms
Cut-off frequency line-line	10 MHz
Capacitance line-line (C)	≤ 0.3 nF
Capacitance line-PG (C)	≤ 15 pF
Operating temperature range	-40°C...+80°C
Degree of protection	IP 20
Connection (input/output)	RJ45 / RJ 45 (compatible with RJ12)
Pinning	3/6, 4/5 (3/4, 2/5 for RJ12)
Earthing via	flat connector 6.3 mm
Enclosure material	polyamide PA 6.6
Colour	yellow
Test standards	IEC 61643-21 / EN 61643-21
Approvals	GOST
Accessories	connecting cable, mounting material



Dimension drawing DLI TC



Basic circuit diagram DLI TC



- Cost-effective protection for one pair
- Modern design
- For installation in conformity with the lightning protection zones concept at the boundaries from $0_B - 2$ and higher

High-capacity surge arrester for analogue or system telephones, RJ12 sockets.

Type	DLI TC ECO RJ12
Part No.	929 081
SPD class	TYPE 2P2
Nominal voltage (U_N)	130 V
Max. continuous operating d.c. voltage (U_C)	170 V
Max. continuous operating a.c. voltage (U_C)	120 V
Nominal current (I_N)	200 mA
C2 Total nominal discharge current (8/20 μ s) (I_n)	5 kA
C2 Nominal discharge current (8/20 μ s) per line (I_n)	2.5 kA
Voltage protection level line-line for I_n C2 (U_p)	≤ 480 V
Voltage protection level line-PG for I_n C2 (U_p)	≤ 600 V
Voltage protection level line-line at 1 kV/ μ s C3 (U_p)	≤ 280 V
Voltage protection level line-PG at 1 kV/ μ s C3 (U_p)	≤ 600 V
Cut-off frequency line-line	10 MHz
Capacitance line-line (C)	≤ 0.7 nF
Capacitance line-PG (C)	≤ 15 pF
Operating temperature range	-40°C...+80°C
Degree of protection	IP 20
Connection (input/output)	RJ12 / RJ12
Pinning	3/4
Earthing via	flat connector 6.3 mm
Enclosure material	polyamide PA 6.6
Colour	yellow
Test standards	IEC 61643-21 / EN 61643-21
Approvals	GOST
Accessories	mounting material

Surge Arrester

Surface-Mounted SPDs



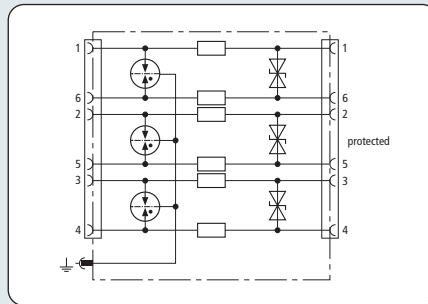
Surface-mounted surge arrester for telecommunications terminal equipment and telephone systems with BT plug-in terminal

- Surface-mounted protective device for telecommunications surge systems
- Plug-in terminals allow quick installation
- Im compliance with British Telecom requirements

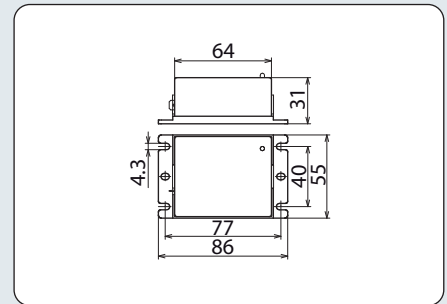
Surface-mounted surge arrester for telecommunications terminal equipment and telephone systems with BT plug-in terminal. The device meets the requirements of Oftel NS/G/23/L/100005 for connections between a terminal point of a public telephone installation and any telecommunications terminal equipment. Fulfils BS6651:1992, Appendix C, Category C-High and CCITT K17.



- In compliance with British Telecom requirements
- Protection of all lines
- For installation in conformity with the lightning protection zones concept at the boundaries from $0_B - 2$ and higher



Basic circuit diagram DLI TC BT



Dimension drawing DLI TC BT

Surge protective device for analogue or system telephones in accordance with British Telecom requirements. Plug-in terminals allow easy installation. Energy-coordinated protective circuit for all pairs, no leakage currents to earth.

Typ	DLI TC BT
Art.-Nr.	929 026
SPD class	TYPE 2 P2
Nominal voltage (U_N)	130 V
Max. continuous operating d.c. voltage (U_C)	145 V
Nominal current (I_N)	125 mA
C2 Total nominal discharge current (8/20 μ s) (I_n)	10 kA
C2 Nominal discharge current (8/20 μ s) per line (I_n)	5 kA
Voltage protection level line-line for I_n C2 (U_p)	≤ 210 V
Voltage protection level line-PG for I_n C2 (U_p)	≤ 550 V
Voltage protection level line-line at 1 kV / μ s C3 (U_p)	≤ 185 V
Voltage protection level line-PG at 1 kV / μ s C3 (U_p)	≤ 450 V
Series impedance per line	4.7 ohm(s)
Cutt-off frequency (f_c)	13 MHz
Capacitance line-line (C)	≤ 400 pF
Capacitance line-PG (C)	≤ 10 pF
Operating temperature range	-40°C...+80°C
Degree of protection	IP 20
Connection (input/output)	BT jack / BT jack
Pinning	1/6, 2/5, 3/4
Earthing via	flat connector (6.3 mm)
Enclosure material	thermoplastic
Colour	black
Test standards	IEC 61643-21
Accessory	connecting cable, mounting material

- Plug-in surge protective adapter for easy retrofitting
- Directly plugs into terminal equipment with coaxial connections
- Integrated indirect shield earthing avoids leakage pickups



Surge arrester designed as cable adapter for protecting coaxial systems such as video and camera systems from potential damage.

UGKF BNC shielded surge arresters are plugged into coaxial terminal equipment or connections. Common applications include the protection of outdoor video surveillance systems or video control centres. In order

to avoid being influenced by leakage pickups, the cable shield is earthed indirectly via a gas discharge tube. The arrester inputs are used as sockets and the protected outputs as plugs.



UGKF BNC types

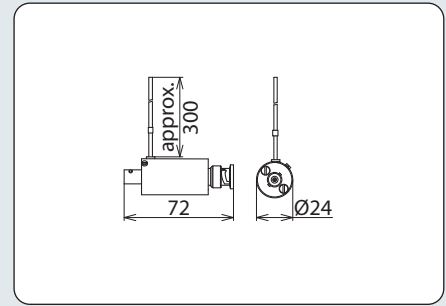
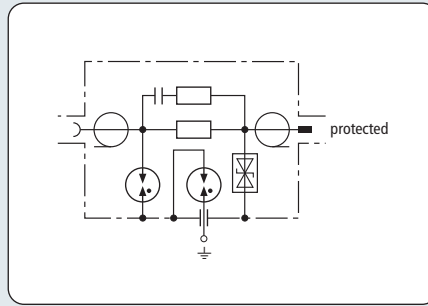
Devices for protecting video surveillance systems with a higher supply voltage or with sockets on both ends are available on request.



DGA BNC VC ...

DGA BNC VC ... surge arresters of the DEHNGate family allow easy installation on supporting rails.





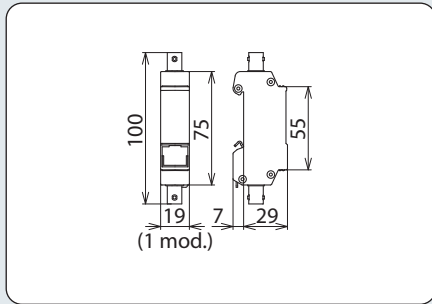
Basic circuit diagram UGKF BNC

Dimension drawing UGKF BNC

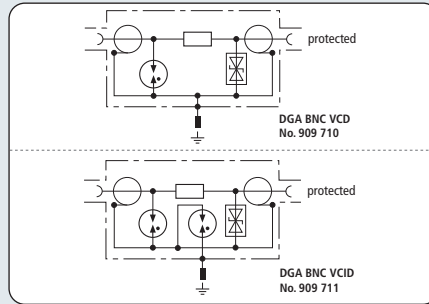
- Easily adaptable
- Avoids leakage pickups
- For installation in conformity with the lightning protection zones concept at the boundaries from $0_B - 2$ and higher

Two-stage surge arrester for protecting video cameras and Arcnet with BNC connection with indirect shield earthing to avoid being influenced by leakage pickups. Special versions for video cameras with a higher nominal voltage are available on request.

Type	UGKF BNC
Part No.	929 010
SPD class	TYPE 2 P1
Nominal voltage (U_N)	5 V
Max. continuous operating d.c. voltage (U_C)	8 V
C2 Nominal discharge current (8/20 μ s) per line (I_n)	2.5 kA
C2 Nominal discharge current (8/20 μ s) shield-PG (I_n)	10 kA
Voltage protection level line-shield for I_n C2 (U_p)	≤ 25 V
Voltage protection level line-shield at 1 kV/ μ s C3 (U_p)	≤ 15 V
Voltage protection level shield-PG at 1 kV/ μ s C3 (U_p)	≤ 600 V
Series impedance per line	10 ohms
Insertion loss at 265 MHz	≤ 3 dB
Return loss at 40 MHz	≥ 20 dB
Surge impedance (Z)	75 ohms
Capacitance line-shield (C)	≤ 50 pF
Operating temperature range	-40°C...+80°C
Connection (input/output)	BNC socket / BNC plug
Earthing via	outgoing earth conductor (0.75 mm ²)
Shield earthing	indirectly via an integrated spark gap
Test standards	IEC 61643-21 / EN 61643-21
Approvals	CSA, UL, GOST



Dimension drawing DGA BNC VC



Basic circuit diagram DGA BNC VC



- Easily adaptable due to BNC sockets
- Available with direct or indirect shield earthing according to type
- For installation in conformity with the lightning protection zones concept at the boundaries from $0_B - 2$ and higher

The space-saving surge arrester with BNC socket is mounted on supporting rails for protecting video and camera systems. Available with direct (VCD) or indirect shield connection (VCID) to prevent leakage pickups.

Type	DGA BNC VCD	DGA BNC VCID
Part No.	909 710	909 711
SPD class	TYPE 2 P1	TYPE 2 P1
Nominal voltage (U_N)	5 V	5 V
Max. continuous operating d.c. voltage (U_C)	6.4 V	6.4 V
Nominal current (I_L)	0.1 A	0.1 A
C2 Nominal discharge current (8/20 μ s) shield-PG (I_n)	10 kA	10 kA
C2 Nominal discharge current (8/20 μ s) line-shield (I_n)	5 kA	5 kA
Voltage protection level line-shield for I_n C2 (U_p)	≤ 35 V	≤ 35 V
Voltage protection level shield-PG for I_n C2 (U_p)	—	≤ 650 V
Voltage protection level line-shield at 1 kV/ μ s C3 (U_p)	≤ 13 V	≤ 13 V
Voltage protection level shield-PG at 1 kV/ μ s C3 (U_p)	—	≤ 600 V
Frequency range	0 - 300 MHz	0 - 300 MHz
Insertion loss at 160 MHz	≤ 0.4 dB	≤ 0.4 dB
Insertion loss at 300 MHz	≤ 3 dB	≤ 3 dB
Return loss at 130 MHz	≥ 20 dB	≥ 20 dB
Return loss at 300 MHz	≥ 8 dB	≥ 10 dB
Surge impedance (Z)	50 ohms	50 ohms
Series impedance per line	4.7 ohms	4.7 ohms
Capacitance line-shield (C)	≤ 25 pF	≤ 25 pF
Capacitance shield-PG (C)	—	≤ 20 pF
Operating temperature range	-40°C...+80°C	-40°C...+80°C
Degree of protection	IP 10	IP 10
For mounting on	35 mm DIN rails according to EN 60715	35 mm DIN rails according to EN 60715
Connection (input/output)	BNC socket / BNC socket	BNC socket / BNC socket
Earthing via	35 mm DIN rail according to EN 60715	35 mm DIN rail according to EN 60715
Enclosure material	zinc die casting	zinc die casting
Colour	bare surface	bare surface
Test standards	IEC 61643-21 / EN 61643-21	IEC 61643-21 / EN 61643-21
Approvals	CSA, UL, GOST	CSA, UL, GOST



Lightning current / surge arrester designed as a cable adapter for protecting coaxial systems such as CCTV, mobile radio stations and antenna systems from potential damage.

DEHNgate is a family of lightning current / surge arresters designed as a cable adapter for protecting coaxial systems such as mobile radio sta-

- Application-specific arrester designs
- Arrester for use in satellite and broadband cable systems with measuring output
- Combined lightning current and surge arrester with a high discharge capacity and low voltage protection level
- Contact materials with extremely long endurance

tions and antenna systems from potential damage. Depending on the application, different mechanical and electrical types are available.



DGA arrester family

The coaxial DGA arrester family comes in different designs to suit a wide range of applications. Different types of connectors and arrester technologies allow optimised solutions. Other types are available on request.



Scope of delivery of DGA FF TV

DGA FF TV can be mounted onto a DIN rail in a space-saving way to protect satellite systems with several outputs. For single applications such as broadband cable connections, the device can be simply snapped into a wall-mounted adapter. Two F cable connections are also included.



Quarter-wave principle

The quarter-wave surge arresters are bandpass filter. Only signals within a defined frequency band are transmitted. Since lightning interferences have a low frequency spectrum, the shorting stub acts as a short-circuit, conducting the lightning current to the ground. This makes the surge arresters mechanically very robust and maintenance-free. Due to their low protection level and high discharge capacity, they can be used as combined lightning current and surge arresters.

The use of quarter-wave surge arresters is advisable if high partial lightning currents could be coupled into antenna lines or if very high transmission performances are required. If additional remote supply is needed for the antenna, a combination of a gas discharge tube and quarter-wave technology (DGA LG) should be used. The arresters are made of top-quality material and provide excellent endurance.

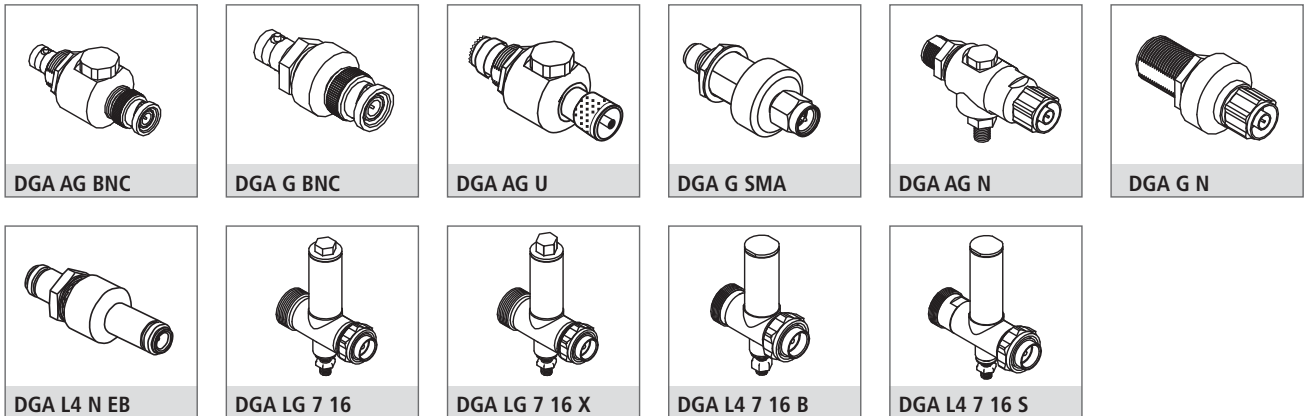
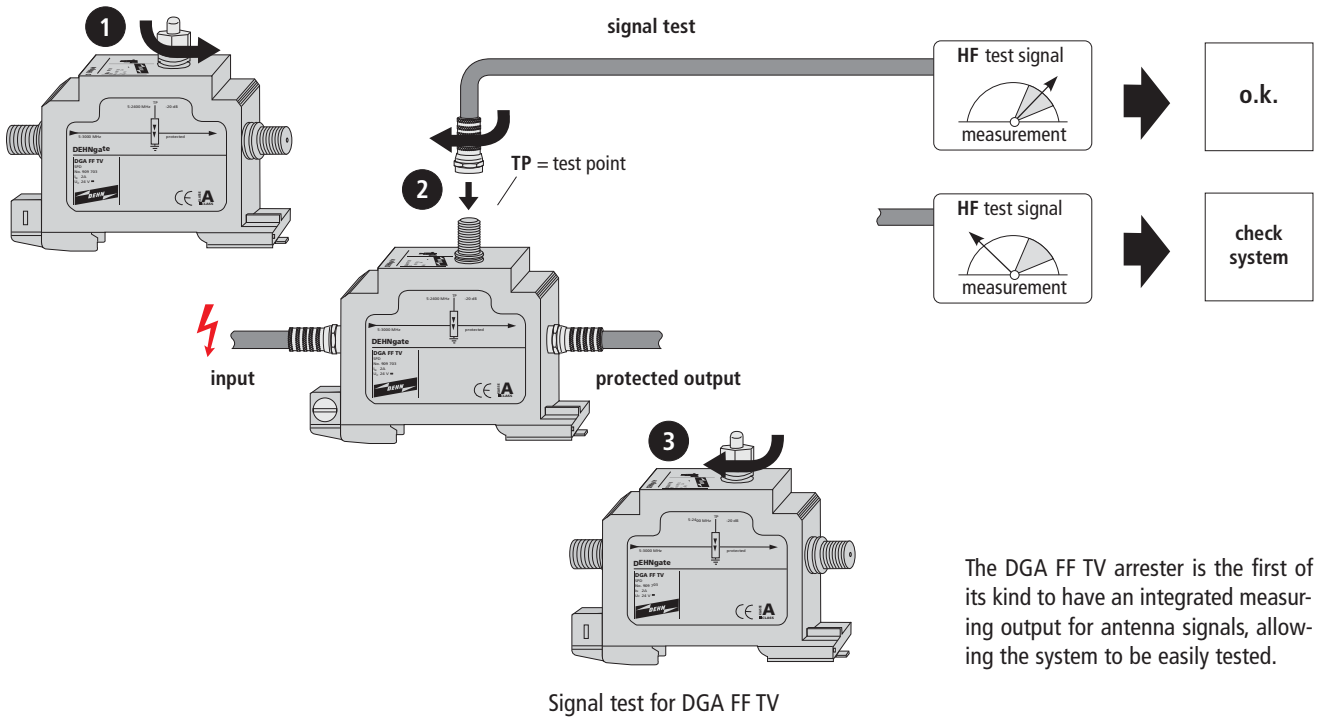


Application of quarter-wave arresters

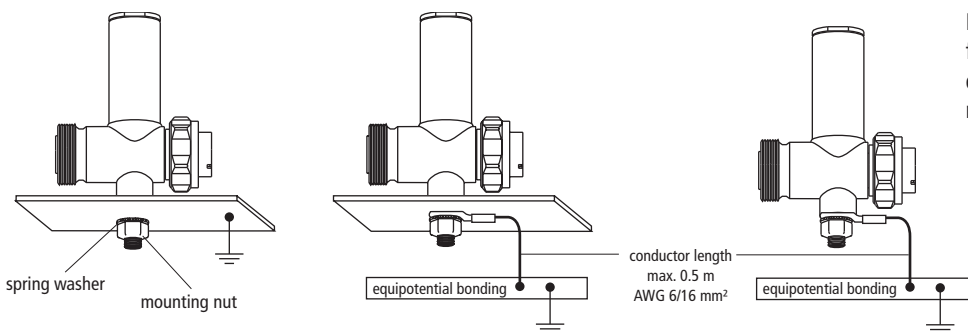


Principle of a spark-gap-based arrester

Spark-gap-based surge arresters have an internal gas-filled surge arrester and can be defined as a low pass. This also allows d.c. transmission (antenna supply). Voltage spikes exceeding the sparkover value of the gas discharge tube are discharged. These surge arresters provide large-area contact surfaces for a defined contact of the inner conductor with the gas discharge tube. This minimises material burn-off during the discharge process and ensures a constant transmission performance.



Different DGA ... types

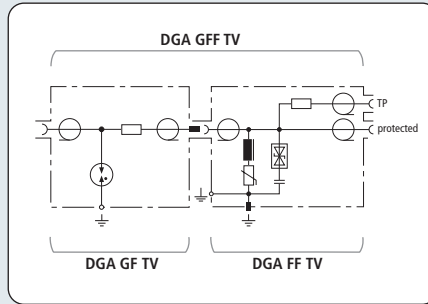


Earthing of DGA AG N and DGA L ...

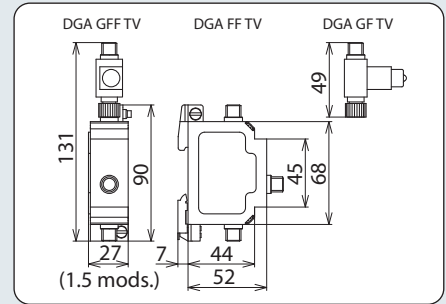
Earthing of the surge arresters is different for the various types. For more detailed information, please see the relevant data sheet.

DGA TV

SPDs for Coaxial Connection



Basic circuit diagram DGA GFF TV consisting of DGA GF TV and DGA FF TV

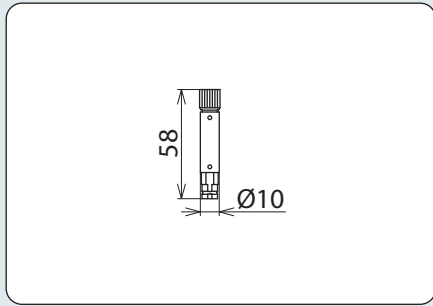


Dimension drawing DGA GFF TV consisting of DGA GF TV and DGA FF TV

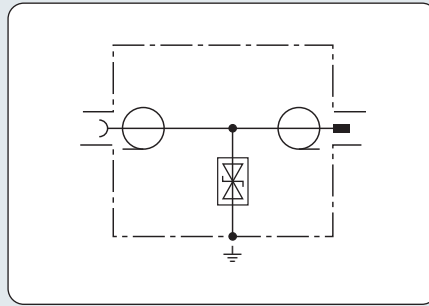
- Frequency range for analogue and digital TV, also suitable for reverse LAN channels
- Arresters of type FF and GFF with integrated measuring output
- Three types for adapted use in conformity with the lightning protection zones concept at the boundaries from
 - 0_A – 2 (combined lightning current and surge arresters of type GFF),
 - 0_A – 1 (lightning current arresters of type GF) and
 - 1 – 2 (surge arresters of type FF)

DGA ... TV are arresters with F connection for remote supply for protecting 75 ohm satellite and broadband cable systems. They fulfil the high shielding requirements of class A according to EN 50083-2. They allow space-saving installation into all common TV and satellite applications and are available as lightning current arresters, surge arresters as well as combined lightning current and surge arresters with integrated measuring output for testing installations.

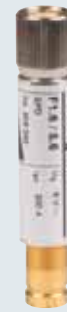
Type	DGA FF TV	DGA GF TV	DGA GFF TV
Part No.	909 703	909 704	909 705
SPD class	TYPE 3 P1	TYPE 1+	TYPE 1+ TYPE 3 P1
Max. continuous operating d.c. voltage (U _c)	24 V	60 V	24 V
Nominal current (I _n)	2 A	2 A	2 A
D1 Lightning impulse current (10/350 μs) (I _{imp})	0.2 kA	2.5 kA	2.5 kA
C2 Nominal discharge current (8/20 μs) (I _n)	1.5 kA	10 kA	10 kA
Voltage protection level for I _{imp} D1 (U _p)	≤ 230 V	≤ 700 V	≤ 230 V
Voltage protection level for I _n C2 (U _p)	≤ 300 V	≤ 700 V	≤ 300 V
Voltage protection level at 1 kV/μs C3 (U _p)	≤ 60 V	≤ 600 V	≤ 60 V
Frequency range	d.c., 5 - 3000 MHz	d.c. - 2400 MHz	d.c., 5-2400 MHz
Insertion loss	—	0.5 dB	—
Insertion loss 5 - 862 MHz typ.	1.2 dB	—	1.7 dB
Insertion loss 862 - 2400 MHz typ.	1.4 dB	—	1.9 dB
Insertion loss 2400 - 3000 MHz typ.	2 dB	—	—
Return loss	≥ 14 dB	≥ 18 dB (-1.5 dB/octave) dB	—
Return loss (5 - 8 MHz)	—	—	≥ 10 dB
Return loss (8 - 47 MHz)	—	—	≥ 14 dB
Return loss (47 - 2400 MHz)	≥ 18 dB (-1.5 dB/octave)	—	≥ 18 dB (-1.5 dB/octave)
Return loss test socket (5 - 47 MHz)	≥ 18 dB	—	≥ 18 dB
Test socket connection loss	20 dB	—	20 dB
Shield attenuation 5 - 300 MHz	≥ 85 dB	≥ 85 dB	≥ 85 dB
Shield attenuation 300 - 470 MHz	≥ 80 dB	≥ 80 dB	≥ 80 dB
Shield attenuation 470 - 1000 MHz	≥ 75 dB	≥ 75 dB	≥ 75 dB
Shield attenuation 1000 - 2400 MHz	≥ 55 dB	≥ 55 dB	≥ 55 dB
Surge impedance (Z)	75 ohms	75 ohms	75 ohms
Operating temperature range	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C
Degree of protection (if lines are connected)	IP 30	IP 30	IP 30
For mounting on	35 mm DIN rails acc. to EN 60715 or wall mounting	earthing brackets	35 mm DIN rails acc. to EN 60715 or wall mounting
Connection (input/output)	F socket / F socket	F socket / F plug	F socket / F socket
Earthing via	DIN rail or screw connection	earthing bracket with screw connection	DIN rail or screw connection
Enclosure material	metal	metal	metal
Colour	bare surface	bare surface	bare surface
Test standards	IEC 61643-21 / EN 61643-21	IEC 61643-21 / EN 61643-21	IEC 61643-21 / EN 61643-21
Approvals	GOST	GOST	GOST
Accessories	2 x F plugs	earthing bracket and 2 x F plug	2 x F plug



Dimension drawing DGA F



Basic circuit diagram DGA F



Quickly operating surge arrester for G.703 interfaces with low-capacitance diode matrix for optimised transmission performance. Earthing via enclosure. 1.6/5.6 connection.

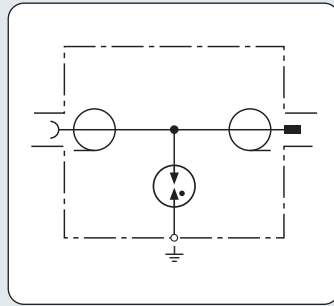
- Easy to retrofit
- For high transmission rates
- For installation in conformity with the lightning protection zones concept at the boundaries from 1 – 2 and higher

Type	DGA F 1.6 5.6
Part No.	929 040
SPD class	TYPE 3 P1
Nominal voltage (U _N)	5 V
Max. continuous operating d.c. voltage (U _C)	6 V
Nominal current (I _N)	0.25 A
C2 Nominal discharge current (8/20 μs) (I _n)	0.3 kA
Voltage protection level for I _n C2 (U _p)	≤ 30 V
Voltage protection level at 1 kV/μs C3 (U _p)	≤ 12 V
Frequency range	d.c. -80 MHz
Insertion loss	≤ 0.2 dB
Surge impedance (Z)	75 ohms
Capacitance line-shield (C)	50 pF
Operating temperature range	-40°C...+80°C
Degree of protection	IP 20
Connection (input/output)	1.6/5.6 plug / 1.6/5.6 socket
Earthing via	externally via shield earthing
Enclosure material	metal
Colour	bare surface
Test standards	IEC 61643-21 / EN 61643-21
Approvals	GOST

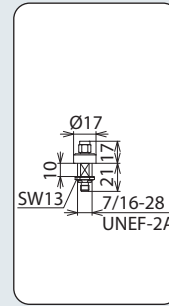


DGA G

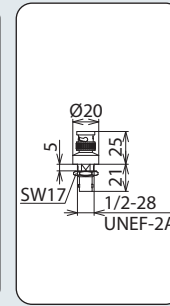
SPDs for Coaxial Connection



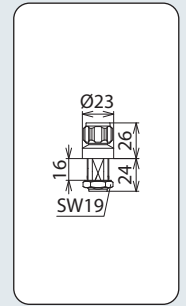
Basic circuit diagram DGA G



Dimension drawing
DGA G SMA



Dimension drawing
DGA G BNC



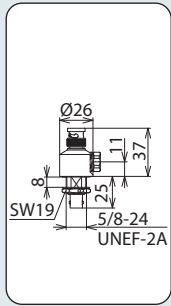
Dimension drawing
DGA G N

- Compact dimensions
- Extremely wide transmission range
- For installation in conformity with the lightning protection zones concept at the boundaries from $0_B - 1$ and higher

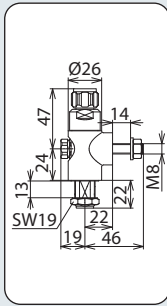
Surge arrester for remote power supply with integrated gas discharge tube. Ideally suited for wireless applications for coaxial interfaces of devices and antennas.

Available with SMA, BNC or N connection for bushing installation.

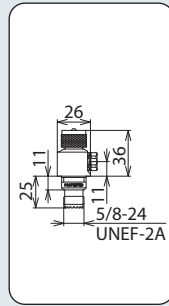
Type	DGA G SMA	DGA G BNC	DGA G N
Part No.	929 039	929 042	929 044
SPD class	TYPE 2	TYPE 2	TYPE 2
Max. continuous operating d.c. voltage (U_C)	135 V	135 V	135 V
Nominal current (I_n)	2 A	3.5 A	6 A
Max. transmission capacity	60 W	25 W	25 W
D1 Lightning impulse current (10/350 μ s) (I_{imp})	1 kA	1 kA	1 kA
C2 Nominal discharge current (8/20 μ s) (I_n)	5 kA	5 kA	5 kA
Voltage protection level for I_n , C2 (U_p)	≤ 700 V	≤ 500 V	≤ 650 V
Frequency range	d.c. - 5.8 GHz	d.c. - 4 GHz	d.c. - 5.8 GHz
Insertion loss	≤ 0.2 dB	≤ 0.2 dB	≤ 0.2 dB
Return loss (d.c. - 3 GHz)	≥ 20 dB	≥ 20 dB	≥ 20 dB
Return loss (3 GHz - 4 GHz)	≥ 18 dB	≥ 20 dB	≥ 20 dB
Return loss (4 GHz - 5.8 GHz)	≥ 18 dB	—	≥ 20 dB
Surge impedance (Z)	50 ohms	50 ohms	50 ohms
Operating temperature range	-40°C...+85°C	-40°C...+85°C	-40°C...+85°C
Degree of protection (if lines are connected)	IP 65	IP 20	IP 65
Connection (input/output)	SMA socket / SMA plug	BNC socket / BNC plug	N socket / N plug
Earthing via	bushing (Ø11.2 mm)	bushing (Ø12.9 mm)	bushing (Ø16.2 mm)
Enclosure material	gold-plated brass	brass, gold-plated	brass, gold-plated
Colour	gold	gold	gold
Test standards	IEC 61643-21 / EN 61643-21	IEC 61643-21 / EN 61643-21	IEC 61643-21 / EN 61643-21
Approvals	—	GOST	GOST



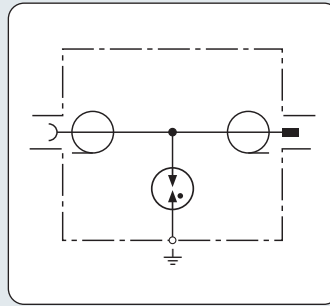
Dimension drawing
DGA AG BNC



Dimension drawing
DGA AG N



Dimension drawing
DGA AG U



Basic circuit diagram DGA AG



- Large-area contact surface of gas discharge tubes
- Longevity due to minimum contact erosion at the inner conductor
- For installation in conformity with the lightning protection zones concept at the boundaries from $0_A - 1$ and higher

Surge arrester suitable for remote supply with replaceable gas discharge tube. Excellent HF service life due to minimum contact erosion and large-area contact surface of the gas discharge tube in a special cage.

Type	DGA AG BNC	DGA AG N	DGA AG U
Part No.	929 043	929 045	929 057
SPD class	TYPE 1	TYPE 1	TYPE 1
Max. continuous operating d.c. voltage (U_C)	180 V	180 V	180 V
Nominal current (I_N)	3.5 A	6 A	10 A
Max. transmission capacity	150 W	150 W	150 W
D1 Lightning impulse current (10/350 μ s) (I_{imp})	5 kA	5 kA	5 kA
C2 Nominal discharge current (8/20 μ s) (I_n)	20 kA	20 kA	20 kA
Voltage protection level for I_n C2 (U_p)	≤ 750 V	≤ 950 V	≤ 750 V
Frequency range	d.c. - 1 GHz	d.c. - 2.5 GHz	d.c. - 300 MHz
Insertion loss	< 0.1 dB	< 0.2 dB	< 0.1 dB
Return loss	≥ 20 dB	≥ 20 dB	≥ 20.8 dB
Surge impedance (Z)	50 ohms	50 ohms	50 ohms
Operating temperature range	-40°C...+85°C	-40°C...+85°C	-40°C...+85°C
Degree of protection	IP 20	IP 65	IP 20
Connection (input/output)	BNC socket / BNC plug	N socket / N plug	UHF socket / UHF plug
Earthing via	bushing ($\varnothing 16.1$ mm)	bushing ($\varnothing 16.1$ mm) or earthing screw	bushing ($\varnothing 19.3$ mm)
Enclosure material	brass, refined surface with trimetal plating	brass, refined surface with trimetal plating	brass, refined surface with trimetal plating
Colour	bare surface	bare surface	bare surface
Replaceable gas discharge tube	yes	yes	yes
Test standards	IEC 61643-21 / EN 61643-21	IEC 61643-21 / EN 61643-21	IEC 61643-21 / EN 61643-21
Approvals	GOST	GOST	GOST

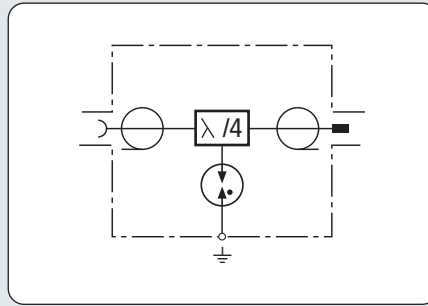
Accessory for DEHNgate

Gas Discharge Tube for DEHNgate

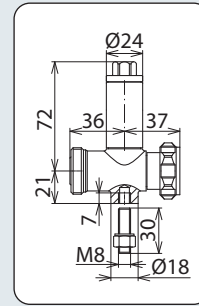
Lightning current carrying replacement gas discharge tube for DEHNgate arresters. High quality with extremely low capacitance.

Type	GDT DGA 230
Part No.	929 498
Lightning impulse current carrying capability (10/350 μ s)	5 kA
Design	H 8 x 6 mm

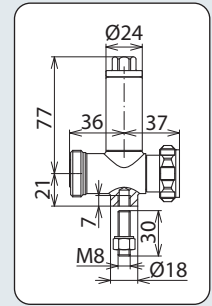




Basic circuit diagram DGA LG



Dimension drawing DGA LG 7 16



Dimension drawing DGA LG 7 16 X

- For multi-frequency applications with d.c. power supply
- Optionally available with self-extinguishing gas discharge capsule for nominal currents up to 2.5 A
- Maximum transmission and PIM performance
- For installation in conformity with the lightning protection zones concept at the boundaries from 0_A – 1 and higher

Quarterwave arrester combined with a spark gap suitable for remote supply for multi-frequency applications (multi-carrier systems) due to minimum passive intermodulation. Broadband device for all 4+3G services.

DGA LG 7 16 X arresters are equipped with a self-extinguishing gas discharge capsule with automatic reset function for a high degree of safety and negligible system downtimes.

Type	DGA LG 7 16	DGA LG 7 16 X
Part No.	929 046	929 446
SPD class	TYPE 1	TYPE 1
Max. continuous operating d.c. voltage (U _c)	65 V	65 V
Nominal current (I _n)	13 A	2.5 A
Max. transmission capacity	500 W	500 W
D1 Lightning impulse current (10/350 μs) (I _{imp})	5 kA	5 kA
C2 Nominal discharge current (8/20 μs) (I _n)	20 kA	20 kA
Voltage protection level for I _n C2 (U _p)	≤ 1000 V	≤ 1000 V
Frequency range	d.c., 806 MHz - 2.2 GHz	d.c., 806 MHz - 2.2 GHz
Insertion loss	≤ 0.15 dB	≤ 0.15 dB
Insertion loss 2176 MHz	typ. 0.1 dB	typ. 0.1 dB
Return loss	≥ 20 dB	≥ 20 dB
Return loss 2176 MHz	typ. 20.0 dB	typ. 20.0 dB
Surge impedance (Z)	50 ohms	50 ohms
Intermodulation	typ. -150 dBc @ 2*43 dBm	typ. -150 dBc @ 2*43 dBm
Operating temperature range	-40°C...+85°C	-20°C...+85°C
Degree of protection	IP 65	IP 65
Connection (input/output)	7/16 socket / 7/16 plug	7/16 socket / 7/16 plug
Earthing via	earthing screw	earthing screw
Enclosure material	brass, refined surface with trimetal plating	brass, surface-coated with trimetal plating
Colour	bare surface	bare surface
Replaceable gas discharge tube	yes	Part No. 929 496
Test standards	IEC 61643-21 / EN 61643-21	IEC 61643-21 / EN 61643-21
Approvals	GOST	GOST

Accessory for DEHNgate

Gas Discharge Tube for DEHNgate

Lightning current carrying replacement gas discharge tube for DEHNgate arresters. High quality with extremely low capacitance.



Type	GDT DGA 90
Part No.	929 497
Lightning impulse current carrying capability (10/350 μs)	5 kA
Design	H 8 x 6 mm

Accessory for DEHNgate

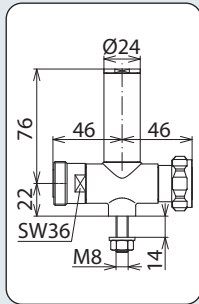
Screw-on Gas Discharge Tube

Lightning current carrying screw-on replacement gas discharge tube for DEHNgate LG 7 16 X arresters. Self-extinguishing gas capsule with automatic reset function in case of d.c. supply currents up to 2.5 A or higher HF performances.

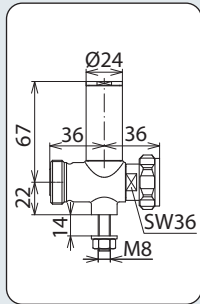
Also suited for retrofitting DEHNgate LG 7 16 with conventional gas capsule technology (replacement of the complete capsule unit!).



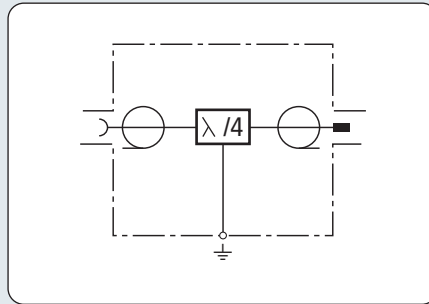
Type	GDT DGA 90 X
Part No.	929 496
Lightning impulse current carrying capability (10/350 μs)	5 kA



Dimension drawing
DGA L4 7 16 S



Dimension drawing
DGA L4 7 16 B



Basic circuit diagram DGA L4



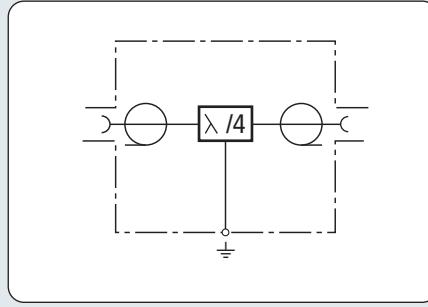
Combined lightning current and surge arrester with maintenance-free quarterwave technology and adapted frequency band. The arresters are also able to discharge high partial lightning currents. No remote supply as the arrester represents an electrical short circuit for low-frequency signals. Alternative types with other connections are available on request.

- Maintenance-free combined lightning current and surge arrester (high discharge capacity and low voltage protection level)
- Maximum transmission and PIM performance
- For installation in conformity with the lightning protection zones concept at the boundaries from $0_A - 2$ and higher

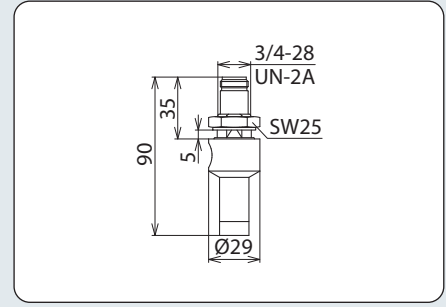
Type	DGA L4 7 16 S	DGA L4 7 16 B
Part No.	929 047	929 048
SPD class	TYPE 1P1	TYPE 1P1
Max. continuous operating d.c. voltage (U_C)	0 V	0 V
Nominal current (I_n)	0 A	0 A
Max. transmission capacity	3000 W	1700 W
D1 Lightning impulse current (10/350 μ s) (I_{imp})	25 kA	40 kA
C2 Nominal discharge current (8/20 μ s) (I_n)	50 kA	80 kA
Voltage protection level for I_n C2 (U_p)	≤ 130 V	≤ 180 V
Frequency range	380 MHz - 512 MHz	800 MHz - 2.2 GHz
Insertion loss	0.1 dB	≤ 0.15 dB
Return loss	≥ 20 dB	≥ 20 dB
Surge impedance (Z)	50 ohms	50 ohms
Intermodulation	—	typ. -150 dBc @ 2*43 dBm
Operating temperature range	-40°C...+85°C	-40°C...+85°C
Degree of protection	IP 65	IP 65
Connection (input/output)	7/16 socket / 7/16 plug	7/16 socket / 7/16 plug
Earthing via	earthing screw	earthing screw
Enclosure material	brass, refined surface with trimetal plating	brass, refined surface with trimetal plating
Colour	bare surface	bare surface
Test standards	IEC 61643-21 / EN 61643-21	IEC 61643-21 / EN 61643-21
Approvals	GOST	GOST

DGA L4 N EB

SPDs for Coaxial Connection



Basic circuit diagram DGA L4 N EB



Dimension drawing DGA L4 N EB

- Maintenance-free combined lightning current and surge arrester, optimised bandwidth and dimensions
- Maximum transmission performance for WiMax and Wi-Fi applications
- For installation in conformity with the lightning protection zones concept at the boundaries from $0_A - 2$ and higher

Extremely broadband combined lightning current and surge arrester with maintenance-free quarter-wave technology, adapted frequency band for Broadband Wireless Access applications and compact dimensions of the enclosure. No remote supply as the arrester represents an electrical short circuit for low-frequency signals.

Type	DGA L4 N EB
Part No.	929 059
SPD class	TYPE 1 P1
Nominal voltage (U_N)	0 V
Max. continuous operating d.c. voltage (U_C)	0 V
Nominal current (I_N)	0 A
Max. transmission capacity	300 W
D1 Lightning impulse current (10/350 μ s) (I_{imp})	25 kA
C2 Nominal discharge current (8/20 μ s) (I_n)	50 kA
Voltage protection level for I_{imp} D1 (U_P)	≤ 18 V
Voltage protection level for I_n C2 (U_P)	≤ 30 V
Frequency range	2.0 GHz - 6.0 GHz
Insertion loss	≤ 0.2 dB
Return loss	≥ 20 dB
Surge impedance (Z)	50 ohms
Operating temperature range	-40°C...+85°C
Degree of protection	IP 65
Connection (input/output)	N socket / N socket
Earthing via	bushing ($\varnothing 19.3$ mm)
Enclosure material	aluminium
Colour	bare surface
Test standards	IEC 61643-21 / EN 61643-21
Approvals	GOST

SPDs for Coaxial Connection

Gas Discharge Tube for DEHNgate

Lightning current carrying replacement gas discharge tube for DEHNgate arresters. High quality with extremely low capacitance.

Type GDT ...	DGA 90	DGA 230	DGA 470
Part No.	929 497	929 498	929 499
Lightning impulse current carrying capability (10/350 µs)	5 kA	5 kA	5 kA
Design in mm	H 8 x 6	H 8 x 6	H 8 x 6
Integrated into Part No.	929 046	929 045	—



Screw-on Gas Discharge Tube

Lightning current carrying screw-on replacement gas discharge tube for DEHNgate LG 7 16 X arresters. Self-extinguishing gas capsule with automatic reset function in case of d.c. supply currents up to 2.5 A or higher HF performances.

Also suited for retrofitting DEHNgate LG 7 16 with conventional gas capsule technology (replacement of the complete capsule unit!).

Type	GDT DGA 90 X
Part No.	929 496
Lightning impulse current carrying capability (10/350 µs)	5 kA
Integrated into Part No.	929 446
Can be retrofitted into Part No.	929 046



Cable Lug with Earthing Conductor

Cable lug with highly flexible black copper earthing conductor for earthing DEHNgate arresters (Part Nos. 929 043, 929 044 or 929 045).

Type	EL 16 B17
Part No.	929 096
Colour	black



Earthing Block 4xF

Four-pole earthing block with F sockets for equipotential bonding of satellite cable shields or DGA GF TV lightning current arresters.

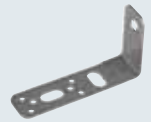
Type	EB 4 F
Part No.	929 095
Max. continuous operating d.c. voltage	65 V
D1 Lightning impulse current (10/350 µs)	10 kA
Frequency range	DC - 2400 MHz



Angled Fixing Plate for DEHNgate

Suitable for installing an DEHNgate arrester (Part Nos. 929 045 – 929 048).

Part No.	106 310
Material	stainless steel



Angled Fixing Plate for DEHNgate

Suitable for installing an DEHNgate arrester (Part Nos. 929 043 – 929 045), anti-rotation borehole (Ø16 mm)

Part No.	106 314
Material	stainless steel



Angled Fixing Plate for HF Arresters

With three boreholes for three different sizes of DEHNgate, e.g. 1x 929 042 + 1x 929 057 + 1x (929 043, 929 044, 929 045 or 929 058).

Type	
Part No.	106 329
Material	stainless steel



Equipotential Bonding Busbar for industrial Use

Suitable for 3x DEHNgate (Part Nos. 929 045 – 929 049, 929 446)

Type	PAS I 6AP M10 V2A
Part No.	472 209
Material	Stainless steel



Earthing Conductor, open / closed Cable Lugs

Cable lug 1x open (M8/M10) and 1x closed (M8), can be combined with Part Nos. 106 310, 106 314, 106 329 and 472 209.

Part No.	416 411
Colour	black
Military No.	VG 96927 T011 A109
Supply No.	6150-12-308-6934





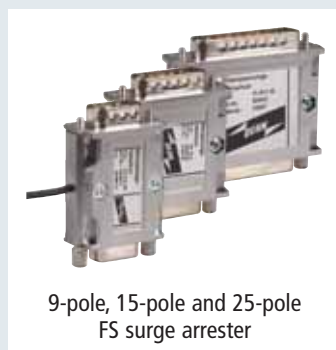
- Surge arrester with D-SUB connection for easy retrofitting
- 9-pole, 15-pole or 25-pole shielded types
- Arrester with single-stage (FS) or two-stage (USD) protective circuit



Surge arrester, D-Sub socket/pin version.
Alternative pinning available on request for the USD series.

The surge arresters are available in a shielded enclosure with D-Sub socket/pin version. The UNC threaded screws of the FS surge arresters for the protection of terminal equipment can be exchanged as required. The thread is thus situated either on the pin or socket side, depending on the

application. In switchgear cabinets, the powerful USD surge arrester can be snapped onto the DIN rail. Special types with other pinning or circuits are also available.



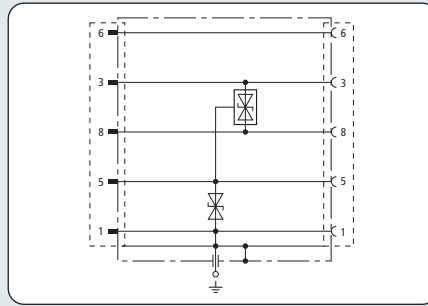
9-pole, 15-pole and 25-pole
FS surge arrester

The surge arresters are available in three different designs covering the most frequent applications. Thanks to their compact dimensions, they can be easily integrated into the cabling.

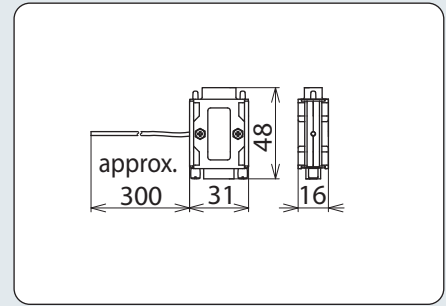


9-pole, 15-pole and 25-pole
USD surge arrester

USD surge arresters can be snapped onto a DIN rail which discharges the overvoltage. Three plug-in types are available.



Basic circuit diagram FS 9E PB

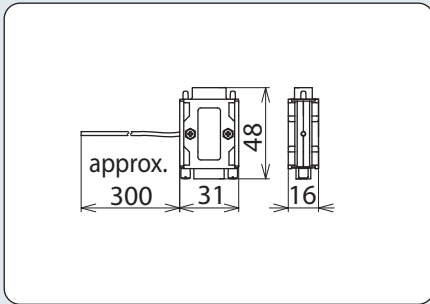


Dimension drawing FS 9E PB

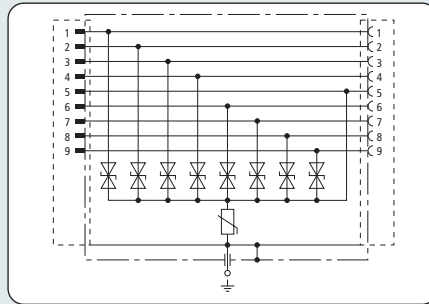
- Adapted to Profibus-DP
- Transmission up to 12 MBit/s
- For installation in conformity with the lightning protection zones concept at the boundaries from 1 – 2 and higher

Surge arrester for Profibus-DP. 9-pin D-SUB version, pin 6 unprotected for the programming interface.

Type	FS 9E PB 6
Part No.	924 017
SPD class	TYPE 4 P1
Nominal voltage (U_N)	6 V
Max. continuous operating d.c. voltage (U_C)	7 V
C1 Nominal discharge current (8/20 μ s) line-line (I_n)	0.2 kA
C1 Nominal discharge current (8/20 μ s) line-SG (I_n)	0.2 kA
C1 Nominal discharge current (8/20 μ s) SG-PG (I_n)	0.4 kA
Voltage protection level line-line for I_n C1 (U_p)	≤ 32 V
Voltage protection level line-SG for I_n C1 (U_p)	≤ 32 V
Voltage protection level SG-PG for I_n C1 (U_p)	≤ 25 V
Voltage protection level line-line at 1 kV/ μ s C3 (U_C)	≤ 25 V
Voltage protection level line-SG at 1 kV/ μ s C3 (U_p)	≤ 25 V
Voltage protection level SG-PG at 1 kV/ μ s C3 (U_p)	≤ 18 V
Cut-off frequency (f_C)	90 MHz
Capacitance line-line (C)	25 pF
Capacitance line-SG (C)	35 pF
Operating temperature range	-40°C...+80°C
Degree of protection	IP 40
For mounting on	D-SUB (2 threaded screws 4/40 UNC)
Connection (input/output)	D-SUB 9 plug / D-SUB 9 socket
Pinning	line: 3/8, SG: 5, PG: 1, 6: unprotected
Earthing via	outgoing earthing conductor (0.75 mm ²)
Length of the connecting lead	300 mm (PG)
Enclosure material	plastic, metallised
Colour	silver
Test standards	IEC 61643-21 / EN 61643-21
Approvals	GOST



Dimension drawing FS 9E HS



Basic circuit diagram FS 9E HS



- All pins protected
- Low voltage protection level
- For installation in conformity with the lightning protection zones concept at the boundaries from 1 – 2 and higher

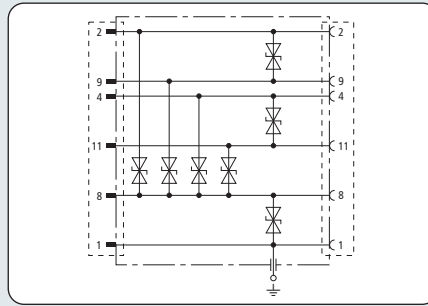
Surge arrester for V-24 interfaces with handshake. 9-pin D-SUB version.

Type	FS 9E HS 12
Part No.	924 019
SPD class	TYPE 4P1
Nominal voltage (U_N)	12 V
Max. continuous operating d.c. voltage (U_c)	15 V
C1 Nominal discharge current (8/20 μ s) line-SG (I_n)	0.1 kA
C1 Nominal discharge current (8/20 μ s) SG-PG (I_n)	0.1 kA
Voltage protection level line-SG for I_n C1 (U_p)	≤ 24 V
Voltage protection level SG-PG for I_n C1 (U_p)	≤ 200 V
Voltage protection level line-SG at 1 kV/ μ s C3 (U_p)	≤ 21 V
Voltage protection level SG-PG at 1 kV/ μ s C3 (U_p)	≤ 130 V
Cut-off frequency (f_c)	10 MHz
Capacitance line-SG (C)	700 pF
Capacitance SG-PG (C)	350 pF
Operating temperature range	-40°C...+80°C
Degree of protection	IP 40
For mounting on	D-SUB (2 threaded screws 4/40 UNC)
Connection (input/output)	D-SUB 9 plug / D-SUB 9 socket
Pinning	line: 1/2/3/4/6/7/8/9, SG: 5
Earthing via	outgoing earthing conductor (0.75 mm ²)
Length of the connecting lead	300 mm (PG)
Enclosure material	plastic, metallised
Colour	silver
Test standards	IEC 61643-21 / EN 61643-21
Approvals	GOST

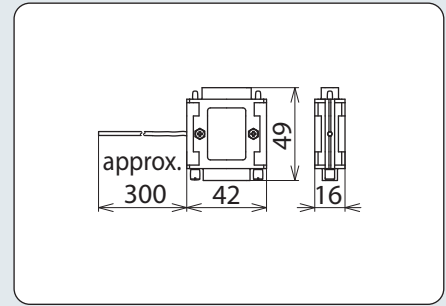


FS 15E

SPDs for D-SUB Connection



Basic circuit diagram FS 15E



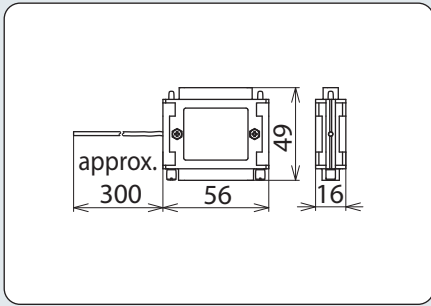
Dimension drawing FS 15E

- For four-wire interfaces
- Low voltage protection level
- For installation in conformity with the lightning protection zones concept at the boundaries from 1 – 2 and higher

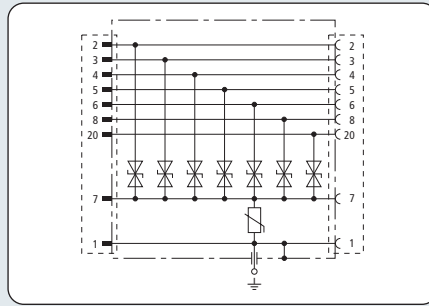
Surge arrester for RS422, V.11 interfaces (two pairs to common SG). 15-pin D-SUB version.

Type	FS 15E 5
Part No.	924 016
SPD class	TYPE 4 P1
Nominal voltage (U_N)	5 V
Max. continuous operating d.c. voltage (U_C)	8 V
C1 Nominal discharge current (8/20 μ s) line-SG (I_n)	0.2 kA
C1 Nominal discharge current (8/20 μ s) SG-PG (I_n)	0.6 kA
Voltage protection level line-line for I_n C1 (U_p)	≤ 18 V
Voltage protection level line-SG for I_n C1 (U_p)	≤ 16 V
Voltage protection level SG-PG for I_n C1 (U_p)	≤ 18 V
Voltage protection level line-line at 1 kV/ μ s C3 (U_C)	≤ 11 V
Voltage protection level line-SG at 1 kV/ μ s C3 (U_p)	≤ 11 V
Voltage protection level SG-PG at 1 kV/ μ s C3 (U_p)	≤ 11 V
Cut-off frequency (f_C)	4 MHz
Capacitance line-line (C)	1500 pF
Capacitance line-SG (C)	1600 pF
Capacitance line-PG (C)	1200 pF
Operating temperature range	-40°C...+80°C
Degree of protection	IP 40
For mounting on	D-SUB (2 threaded screws 4/40 UNC)
Connection (input/output)	D-SUB 15 plug / D-SUB 15 socket
Pinning	line: 2/9, 4/11, SG: 8, PG: 1
Earthing via	outgoing earthing conductor (0.75 mm ²)
Length of the connecting lead	300 mm (PG)
Enclosure material	plastic, metallised
Colour	silver
Test standards	IEC 61643-21 / EN 61643-21
Approvals	GOST





Dimension drawing FS 25E HS



Basic circuit diagram FS 25E HS

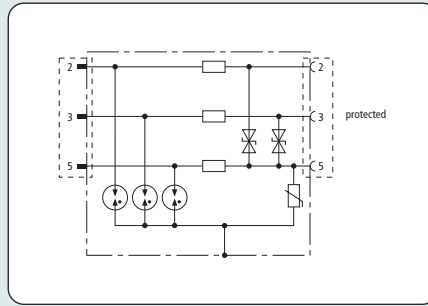


- All lines interconnected
- Low voltage protection level
- For installation in conformity with the lightning protection zones concept at the boundaries from 1 – 2 and higher

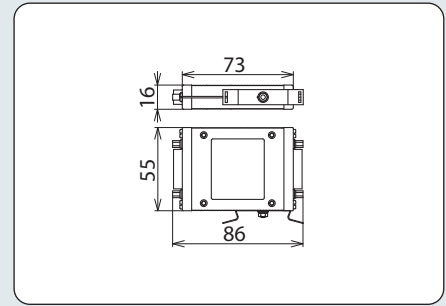
Surge arrester for V.24 interfaces with handshake. 25-pin D-SUB version.

Type	FS 25E HS 12
Part No.	924 018
SPD class	TYPE 4P1
Nominal voltage (U_N)	12 V
Max. continuous operating d.c. voltage (U_c)	15 V
C1 Nominal discharge current (8/20 μ s) line-SG (I_n)	0.1 kA
C1 Nominal discharge current (8/20 μ s) SG-PG (I_n)	0.1 kA
Voltage protection level line-SG for I_n C1 (U_p)	≤ 24 V
Voltage protection level SG-PG for I_n C1 (U_p)	≤ 200 V
Voltage protection level line-SG at 1 kV/ μ s C3 (U_p)	≤ 21 V
Voltage protection level SG-PG at 1 kV/ μ s C3 (U_p)	≤ 130 V
Cut-off frequency (f_c)	10 MHz
Capacitance line-SG (C)	700 pF
Capacitance SG-PG (C)	350 pF
Operating temperature range	-40°C...+80°C
Degree of protection	IP 40
For mounting on	D-SUB (2 threaded screws 4/40 UNC)
Connection (input/output)	D-SUB 25 plug / D-SUB 25 socket
Pinning	line: 2/3/4/5/6/8/20, SG: 7, other lines are unprotected
Earthing via	outgoing earthing conductor (0.75 mm ²)
Length of the connecting lead	300 mm (PG)
Enclosure material	plastic, metallised
Colour	silver
Test standards	IEC 61643-21 / EN 61643-21
Approvals	GOST





Basic circuit diagram USD 9 V24



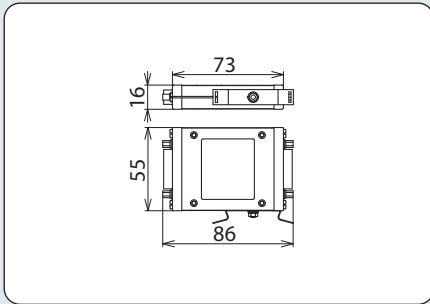
Dimension drawing USD 9 V24

- Plug-in surge arrester with two-stage protective circuit
- For installation in conformity with the lightning protection zones concept at the boundaries from $0_B - 2$ and higher

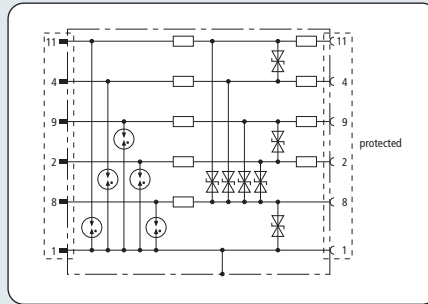
Energy-coordinated two-stage arrester for V.24 interfaces. 9-pin D-SUB version.

Type	USD 9 V24 S B
Part No.	924 061
SPD class	TYPE 2 P1
Nominal voltage (U_N)	12 V
Max. continuous operating d.c. voltage (U_C)	12.5 V
C2 Nominal discharge current (8/20 μ s) line-PG (I_n)	2.5 kA
C2 Nominal discharge current (8/20 μ s) SG-PG (I_n)	7.5 kA
Voltage protection level line-SG for I_n C2 (U_p)	≤ 22 V
Voltage protection level SG-PG for I_n C2 (U_p)	≤ 330 V
Voltage protection level line-SG at 1 kV/ μ s C3 (U_p)	≤ 18 V
Voltage protection level SG-PG at 1 kV/ μ s C3 (U_p)	≤ 220 V
Series impedance per line	15 ohms
Operating temperature range	-40°C...+80°C
For mounting on	D-SUB or 35 mm DIN rails acc. to EN 60715
Connection (input/output)	D-SUB 9 plug / D-SUB 9 socket
Pinning	line: 2/3, SG: 5
Earthing via	earthing screw or DIN rail
Test standards	IEC 61643-21 / EN 61643-21
Approvals	GOST





Dimension drawing USD 15 V11



Basic circuit diagram USD 15 V11



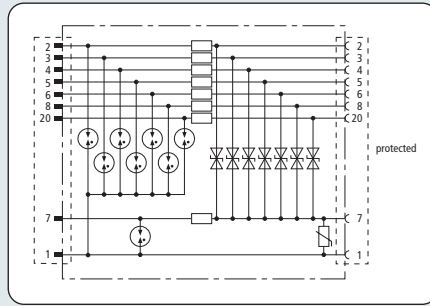
Energy-coordinated two-stage arrester for RS422, V.11 interfaces with diode protective circuit at the input. 15-pin D-SUB version.

- Plug-in surge arrester with two-stage protective circuit
- Integrated decoupling of the protective circuit with regard to the terminal equipment
- For installation in conformity with the lightning protection zones concept at the boundaries from $O_B - 2$ and higher

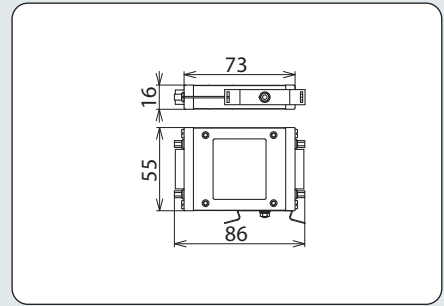
Type	USD 15 V11 S B
Part No.	924 051
SPD class	TYPE 2 P1
Nominal voltage (U_N)	8 V
Max. continuous operating d.c. voltage (U_c)	8.5 V
C2 Nominal discharge current (8/20 μ s) line-PG (I_n)	2.5 kA
C2 Nominal discharge current (8/20 μ s) SG-PG (I_n)	7.5 kA
Voltage protection level line-line/line-SG C2 (U_p)	≤ 15 V
Voltage protection level SG-PG for I_n C2 (U_p)	≤ 20 V
Voltage protection level line-line/line-SG at 1 kV/ μ s C3 (U_p)	≤ 11 V
Voltage protection level SG-PG at 1 kV/ μ s C3 (U_p)	≤ 15 V
Series impedance per line	37 ohms
Operating temperature range	-40°C...+80°C
For mounting on	D-SUB or 35 mm DIN rails acc. to EN 60715
Connection (input/output)	D-SUB 15 plug / D-SUB 15 socket
Pinning	line: 2/9/4/11, SG: 8, PG: 1
Earthing via	earthing screw or DIN rail
Test standards	IEC 61643-21 / EN 61643-21
Approvals	GOST

USD 25 V24

SPDs for D-SUB Connection



Basic circuit diagram USD 25 V24



Dimension drawing USD 25 V24

- Plug-in surge arrester with two-stage protective circuit
- For installation in conformity with the lightning protection zones concept at the boundaries from $O_B - 2$ and higher

Energy-coordinated two-stage arrester for V.24 interfaces with handshake. 25-pin D-SUB version.

Type	USD 25 V24 HS S B
Part No.	924 046
SPD class	TYPE 2 P1
Nominal voltage (U_N)	12 V
Max. continuous operating d.c. voltage (U_c)	12.5 V
C2 Nominal discharge current (8/20 μ s) line-PG (I_n)	2.5 kA
C2 Nominal discharge current (8/20 μ s) SG-PG (I_n)	7.5 kA
Voltage protection level line-SG for I_n C2 (U_p)	≤ 27 V
Voltage protection level SG-PG/line-PG for I_n C2 (U_p)	≤ 330 V
Voltage protection level line-SG at 1 kV/ μ s C3 (U_p)	≤ 18 V
Voltage protection level SG-PG at 1 kV/ μ s C3 (U_p)	≤ 220 V
Series impedance per line	15 ohms
Operating temperature range	-40°C...+80°C
Connection (input/output)	D-SUB 25 plug / D-SUB 25 socket
Pinning	line: 2/3/4/5/6/8/20, SG: 7, PG: 1
Earthing via	earthing screw or DIN rail
Test standards	IEC 61643-21 / EN 61643-21
Approvals	GOST



- Arrester for telecommunications equipment
- Space-saving flush mounting
- Easy to mount due to plug-in terminals



Surge arrester for protecting telecommunications equipment and installation into flush-type boxes or small-sized distribution boards. Plug-in terminals on the input side.

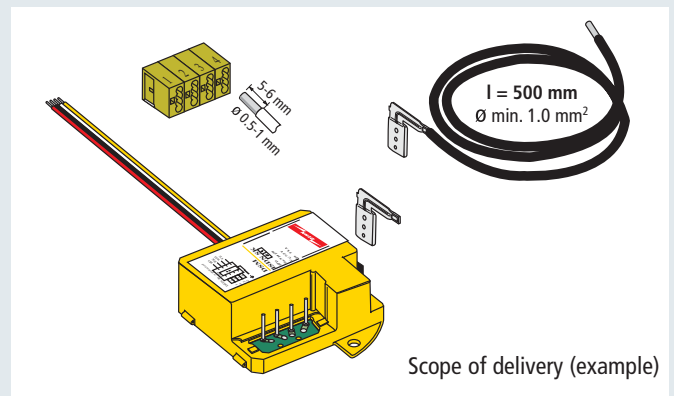
In a typical installation, DSM surge arresters are integrated into the junction box downstream of the socket outlet of the terminal equipment or into the cable duct, making them independent from the switch or box programme. They protect, invisibly for the user, telecommunications

equipment or devices. Of course, the arresters can also be integrated into small-sized distribution boards. The removable plug-in terminals simplify the installation of DSM. Since each plug-in terminal is designed for four lines, through-wiring of an S₀ bus, for example, is possible.

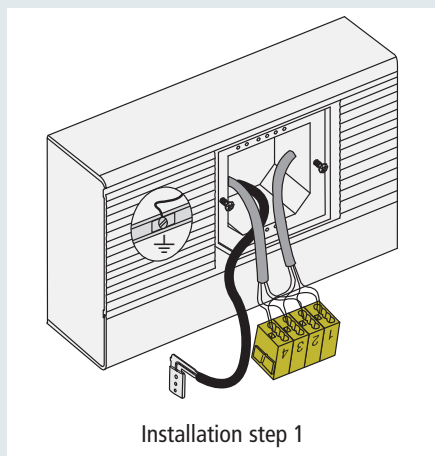


DSM surge arresters are compact enough to be easily installed even into small-sized distribution boards situated in damp rooms.

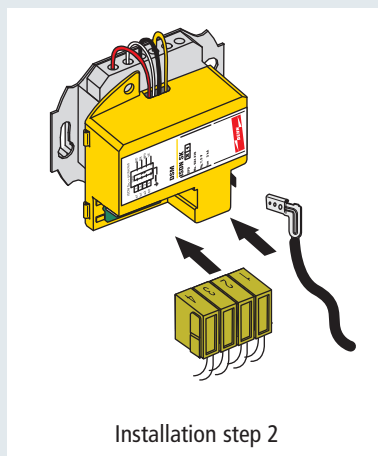
Apart from the plug-in terminals, delivery also includes a prewired earthing conductor.



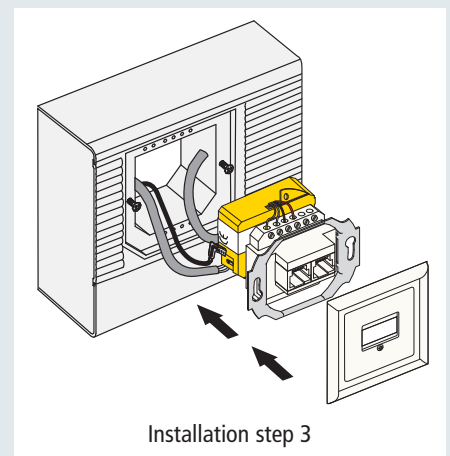
Scope of delivery (example)



Installation step 1



Installation step 2



Installation step 3

Prewired cables

The plug-in terminals are prewired, allowing the ISDN bus to be wired.

Connecting DSM ... SK to the telecommunications box

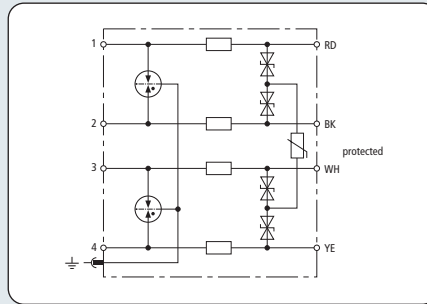
The lines fixed at the DSM surge arrester are connected to the telecommunications box and the DSM surge arrester is placed at the rear panel of the box. Then, the prewired connectors can be plugged in.

Final assembly

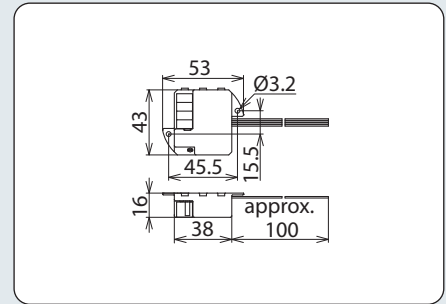
The telecommunications box with the DSM surge arrester is inserted and fixed in the mounting panel. After that, an adequate cover has to be mounted.

DSM ISDN

SPDs for Terminal Connection



Basic circuit diagram DSM ISDN

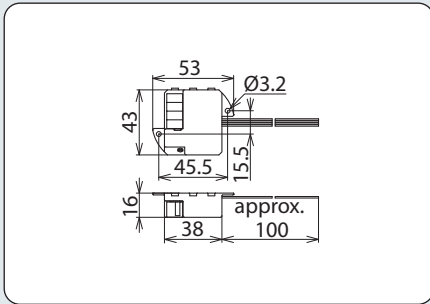


Dimension drawing DSM ISDN

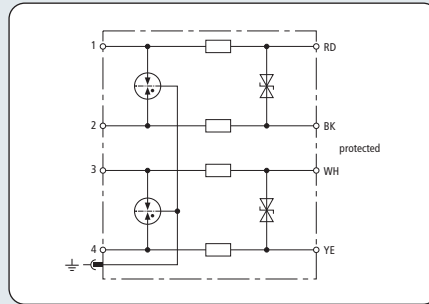
- Optional through-wiring of the ISDN bus via plug-in terminals
- Integrated protection for the remote supply
- For installation in conformity with the lightning protection zones concept at the boundaries from $O_B - 2$ and higher

Energy-coordinated two-stage arrester for ISDN S_0 buses with additional protection of the remote supply. Four-pole terminal allows through-wiring of the ISDN bus.

Type	DSM ISDN SK
Part No.	924 270
SPD class	TYPE 2P1
Nominal voltage (U_N)	5 V
Nominal voltage pair-pair (U_{Np})	40 V
Max. continuous operating d.c. voltage (U_C)	7.5 V
Max. continuous operating d.c. voltage pair-pair (U_{Cp})	45 V
Nominal current (I_n)	200 mA
C2 Total nominal discharge current (8/20 μ s) (I_n)	20 kA
C2 Nominal discharge current (8/20 μ s) per line (I_n)	5 kA
Voltage protection level line-line for I_n C2 (U_p)	≤ 30 V
Voltage protection level line-PG for I_n C2 (U_p)	≤ 600 V
Voltage protection level pair-pair for I_n C2 (U_p)	≤ 180 V
Voltage protection level line-line at 1 kV/ μ s C3 (U_p)	≤ 17 V
Voltage protection level line-PG at 1 kV/ μ s C3 (U_p)	≤ 600 V
Voltage protection level pair-pair at 1 kV/ μ s C3 (U_p)	≤ 100 V
Series impedance per line	4.7 ohms
Cut-off frequency (f_c)	4 MHz
Capacitance line-line (C)	≤ 1.5 nF
Capacitance line-PG (C)	≤ 15 pF
Operating temperature range	-40°C...+80°C
Degree of protection	IP 20
Connection (input/output)	terminal with four clamping points / stranded conductors 0.25 mm ²
Pinning	2 pairs
Connection diameter, solid	0.5 - 1.0 mm
Earthing via	flat connector (2.8 mm)
Enclosure material	polyamide PA 6.6
Colour	yellow
Test standards	IEC 61643-21 / EN 61643-21
Approvals	GOST
Accessories	flat connector, 500 mm earthing conductor



Dimension drawing DSM TC



Basic circuit diagram DSM TC



- Excellent transmission performance
- Also suitable for installation into distribution boards
- For installation in conformity with the lightning protection zones concept at the boundaries from $0_B - 2$ and higher

Energy-coordinated two-stage surge arrester, no leakage currents to earth, for (system) telephones, U_{k0} , ADSL, for two pairs.

Type	DSM TC 2 SK
Part No.	924 272
SPD class	TYPE 2P2
Nominal voltage (U_N)	110 V
Max. continuous operating d.c. voltage (U_C)	170 V
Nominal current (I_N)	200 mA
C2 Total nominal discharge current (8/20 μ s) (I_n)	20 kA
C2 Nominal discharge current (8/20 μ s) per line (I_n)	5 kA
Voltage protection level line-line for I_n C2 (U_p)	≤ 275 V
Voltage protection level line-PG for I_n C2 (U_p)	≤ 600 V
Voltage protection level line-line at 1 kV/ μ s C3 (U_p)	≤ 220 V
Voltage protection level line-PG at 1 kV/ μ s C3 (U_p)	≤ 600 V
Series impedance per line	4.7 ohms
Cut-off frequency (f_c)	17 MHz
Capacitance line-line (C)	≤ 300 pF
Capacitance line-PG (C)	≤ 10 pF
Operating temperature range	-40°C...+80°C
Degree of protection	IP 20
Connection (input/output)	terminal with four clamping points / stranded conductors 0.25 mm ²
Pinning	2 pairs
Connection diameter, solid	0.5 - 1.0 mm
Earthing via	flat connector (2.8 mm)
Enclosure material	polyamide PA 6.6
Colour	yellow
Test standards	IEC 61643-21 / EN 61643-21
Approvals	GOST
Accessories	flat connector, 500 mm earthing conductor



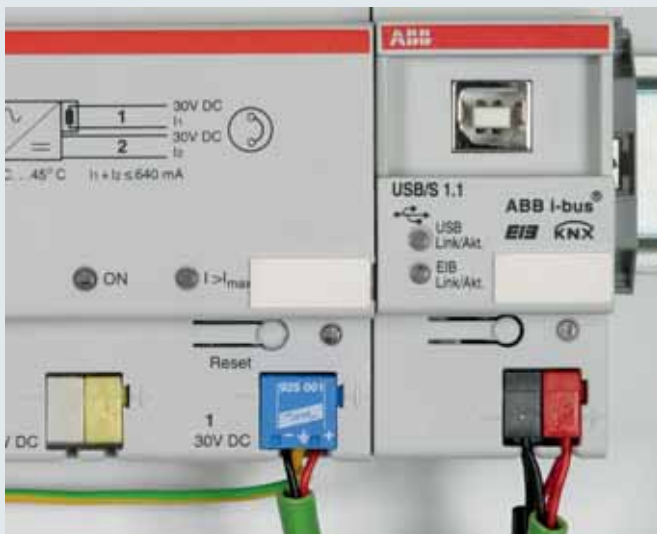


Surge arrester for KNX / EIB buses with connecting leads

The discharge capacity, protective effect and mechanical design of BUSector surge arresters are adapted to the installation environment of KNX / EIB buses. Like a bus terminal they can be plugged onto the bus terminal pins of a terminal device and can be connected to the existing

- Surge arrester for KNX / EIB buses
- Extremely space-saving due to KNX / EIB bus terminal design
- System-tested with EIBA certification

connecting cables. BUSector surge arresters can also be connected to a bus terminal on the terminal device. They particularly protect line and area couplers as well as gateways and sensors installed at the outer walls of buildings.

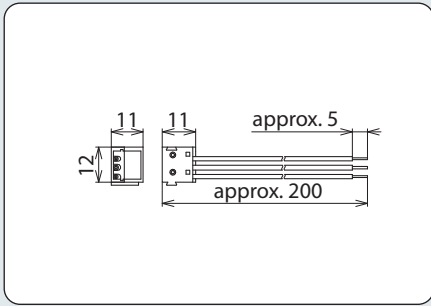


Protection of a KNX power supply unit by means of a BUSector surge arrester mounted in the bus terminal slot.

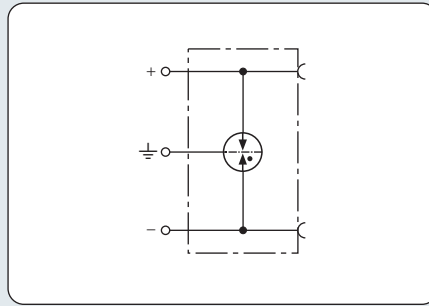


Protection of a KNX bus coupling unit by means of a BUSector surge arrester mounted on a bus terminal in the mounting area of a cable duct.

SPDs for Terminal Connection



Dimension drawing BT



Basic circuit diagram BT



- Suitable for KNX / EIB systems
- Minimum space requirements
- For installation in conformity with the lightning protection zones concept at the boundaries from $0_B - 1$ and higher


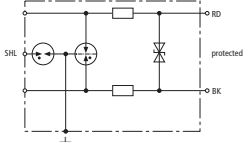

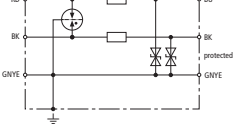

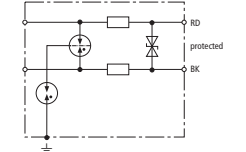

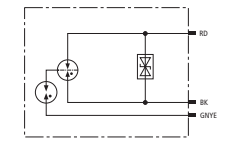

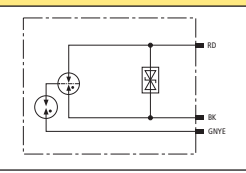

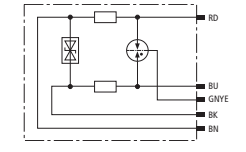

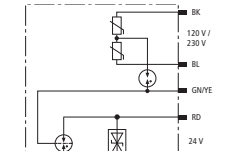

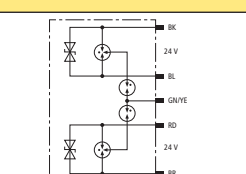

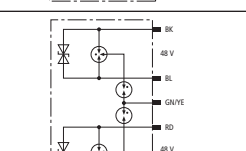
Surge arrester with bus terminal design, adapted to the immunity of KNX / EIB systems. EIBA-certified.

Type	BT 24
Part No.	925 001
SPD class	TYPE 2
Nominal voltage (U_n)	24 V
Max. continuous operating d.c. voltage (U_c)	45 V
Nominal current (I_n)	6 A
C2 Nominal discharge current per line (I_n)	5 kA
Voltage protection level line-line for I_n C2	≤ 1200 V
Voltage protection level line-PG for I_n C2	≤ 650 V
Voltage protection level line-line at $1 \text{ kV}/\mu\text{s}$ C3	≤ 750 V
Voltage protection level line-PG at $1 \text{ kV}/\mu\text{s}$ C3	≤ 500 V
Cut-off frequency line-line	70 MHz
Capacitance line-line	≤ 10 pF
Capacitance line-PG	≤ 10 pF
Operating temperature range	$-40^\circ\text{C} \dots +80^\circ\text{C}$
Degree of protection	IP 20
Connection (input/output)	spring contacts ($\varnothing 1$ mm) / connecting leads ($\varnothing 0.8$ mm)
Earthing via	lead (0.75 mm^2), 200 mm long
Enclosure material	thermoplastic
Colour	blue
Test standards	IEC 61643-21
Approvals	EIBA certification No. Z 32/1399/95





DEHNpipe arrester series for protecting process field devices

Product	Basic circuit diagram	Type	Part No.	Page
DEHNpipe				
		DPI MD – For a balanced interface – Direct or indirect shield earthing – Nominal voltage: 24 V – For series connection – With screw thread M20 x 1.5 (female/male)	929 941	301
		DPI ME – For an unbalanced interface – Nominal voltage: 24 V – For series connection – With screw thread 1/2-14 NPT (male/male)	929 921	302
DEHNpipe MD Ex (i)				
		DPI MD EX – For a balanced interface – Nominal voltage: 24 V – For series connection – With screw thread M20 x 1.5	929 960	307
DEHNpipe CD Ex (i)				
		DPI CD EXI – For a balanced interface – Nominal voltage: 24 V – For parallel connection – With screw thread M20 x 1.5 or 1/2-14 NPT	929 961 929 963	310 310
DEHNpipe MD Ex (d)				
		DPI CD EXD 24 – For a balanced interface – Nominal voltage: 24 V – For parallel connection – With screw thread M20 x 1.5 or 1/2-14 NPT	929 962 929 964	313 313
		DPI CD HF EXD 5 – For a balanced interface – Nominal voltage: 5 V – For series connection – With screw thread M20 x 1.5	929 971	314
		DPI CD EXD 230 24 – For a balanced interface and a 120/230 V supply system – Nominal voltage: 24 V and 120/230 V – For parallel connection – With screw thread M20 x 1.5 or 1/2-14 NPT	929 969 929 970	315 315
DEHNpipe CD Ex (i) + Ex (d)				
		DPI CD EXI+D 2X24 – For two balanced interfaces – Nominal voltage: 24 V – For parallel connection – With screw thread M20 x 1.5 or 1/2-14 NPT	929 950 929 951	318 318
		DPI CD EXI+D 2X48 – For two balanced interfaces – Nominal voltage: 48 V – For parallel connection – With screw thread M20 x 1.5 or 1/2-14 NPT	929 952 929 953	319 319



Surge arrester for outdoor use to be screwed onto two-wire field devices. Stainless steel, installation with cable gland up to IP 67.

DEHNpipe is made of corrosion-resistant stainless steel and is screwed onto the field device instead of a conventional cable gland. The permanently connected lines are then connected to the terminals of the field device. Thus the protective components are directly situated in the cable run, allowing energy-coordinated surge protection. The arrester protects

- Installation into the cable run ensures maximum degree of protection
- Surges are discharged via the enclosure of the field device
- For almost all types of two-wire field devices with suitable cable gland

the inside of the field device against dangerous overvoltage with the interfering impulses being discharged via the metal enclosure only and not via the inside of the field device. Earthing accessories are also available for plastic field enclosures.



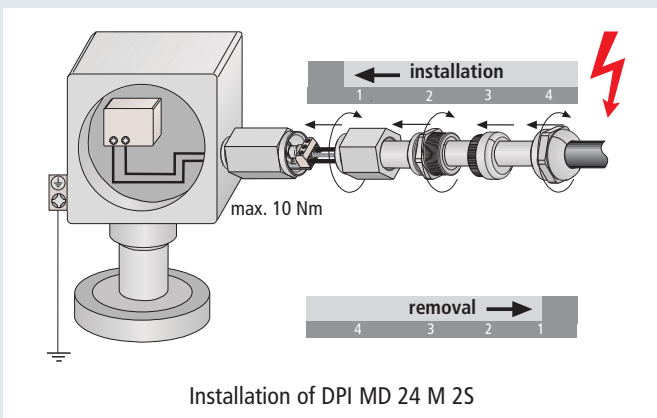
DPI types

DEHNpipe is designed for two-wire measuring sensors with 4-20 mA interfaces. The surge arresters ensure energy-coordinated surge protection for field devices in outdoor areas, minimising space requirements and reducing installation work.

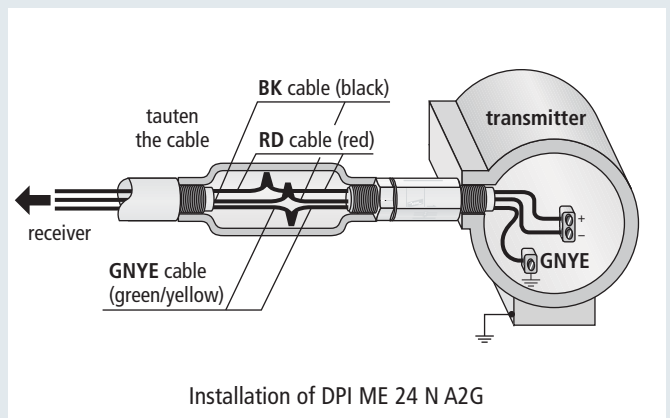


Installation benefits

The universal surge arrester can also be used for applications allowing only single assignment of the field device terminals or providing space for only one cable gland.



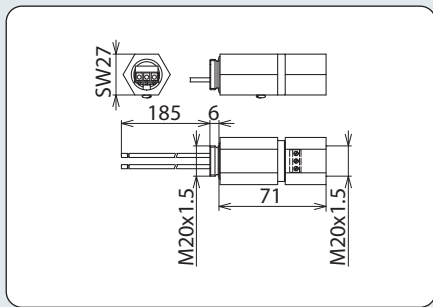
Installation of DPI MD 24 M 2S



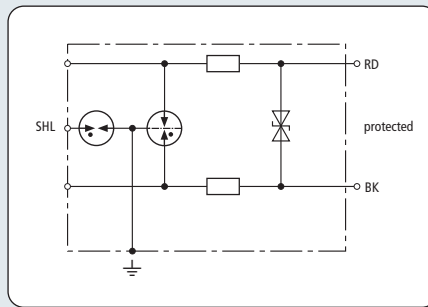
Installation of DPI ME 24 N A2G

Due to the two-part design of the arrester, the field cable can be connected as usual, just as being connected to a measuring sensor. Thanks to the cable gland, a degree of protection IP 67 is achieved. DEHNpipe allows to implement conventional earthing concepts for cable shields of field cables. Depending on the cable gland used, the cable shield is either earthed directly or indirectly or is not earthed at all. Indirect earthing integrates the shield into the protection concept – without leakage pickups.

This type for installation into pipes provides 1/2-14 NPT male threads and permanently installed lines. It is connected as shown in the above figure.



Dimension drawing DPI MD



Basic circuit diagram DPI MD



- Easy to mount due to two-part design
- Suitable for three shielding concepts
- For installation in conformity with the lightning protection zones concept at the boundaries from $0_B - 2$ and higher

Energy-coordinated two-stage arrester, no leakage currents to earth, for 4-20 mA interfaces with thread M20 x 1.5 (female/male). Direct, indirect or no shield earthing. Cable gland available as accessory part.

Type	DPI MD 24 M 25
Part No.	929 941
SPD class	TYPE 2P1
Nominal voltage (U_N)	24 V
Max. continuous operating d.c. voltage (U_C)	34.8 V
Max. continuous operating a.c. voltage (U_C)	24.5 V
Nominal current (I_L)	0.5 A
D1 Lightning impulse current (10/350 μ s) per line (I_{imp})	1 kA
C2 Total nominal discharge current (8/20 μ s) (I_n)	10 kA
C2 Nominal discharge current (8/20 μ s) per line (I_n)	10 kA
C2 Nominal discharge current (8/20 μ s) shield-PG (I_n)	20 kA
Voltage protection level line-line for I_n C2 (U_p)	≤ 65 V
Voltage protection level line-PG for I_n C2 (U_p)	≤ 650 V
Voltage protection level shield-PG for I_n C2 (U_p)	≤ 650 V
Voltage protection level line-line at 1 kV/ μ s C3 (U_p)	≤ 50 V
Voltage protection level line-PG at 1 kV/ μ s C3 (U_p)	≤ 500 V
Voltage protection level shield-PG at 1 kV/ μ s C3 (U_p)	≤ 600 V
Series impedance per line	2.2 ohms
Cut-off frequency line-line (f_G)	14 MHz
Capacitance line-line (C)	≤ 400 pF
Capacitance line-PG (C)	≤ 20 pF
Capacitance shield-PG (C)	≤ 15 pF
Operating temperature range	-40°C ... +80°C
Degree of protection with cable gland	IP 67
For mounting on (field/device side)	M20 x 1.5 female thread / M20 x 1.5 male thread
Connection (input/output)	screw / connecting leads (1.5 mm ²)
Length of the connecting lead	200 mm
Cross-sectional area, solid	0.08 - 2.5 mm ²
Cross-sectional area, flexible	0.08 - 1.5 mm ²
Earthing via	enclosure or earthing ring (accessory)
Enclosure material	V2A
Colour	bare surface
Test standards	IEC 61643-21 / EN 61643-21
SIL classification	SIL2 / SIL3 *)
Approvals	GOST

*) For more detailed information, please refer to www.dehn.de/en/sil/

Accessory for DEHNpipe

EMC Cable Gland

Brass gland with shield connection

Type	KV S M20 MS 9.5
Part No.	929 982
Sealing range	6.5 - 9.5 mm



Accessory for DEHNpipe

Cable Gland

Brass gland without shield connection

Type	KV M20 MS 10.5
Part No.	929 984
Sealing range	7.0 - 10.5 mm



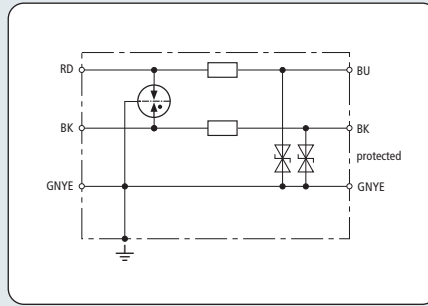
Accessory for DEHNpipe

Brass Earthing Ring

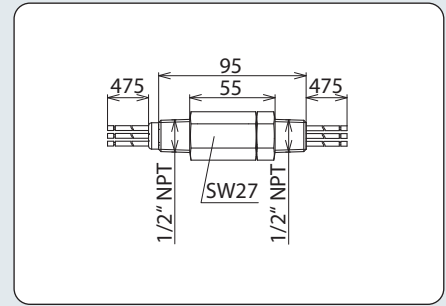
Earthing ring made of nickel-plated brass, for external earthing of DPI surge arresters

Type	ER DPI M20
Part No.	929 996
For mounting on	DPI M20 x 1.5





Basic circuit diagram DPI ME



Dimension drawing DPI ME

- Robust design
- Encapsulated protective circuit
- Single-ended cable connection available on request
- For installation in conformity with the lightning protection zones concept at the boundaries from $O_B - 2$ and higher

Energy-coordinated two-stage arrester with gas discharge tube and diodes to earth. For unbalanced interfaces with 1/2-14 NPT thread (male/male). The earthing conductor is led through the surge arrester.

Type	DPI ME 24 N A2G
Part No.	929 921
SPD class	TYPE 2 P1
Nominal voltage (U_N)	24 V
Max. continuous operating d.c. voltage (U_C)	34.8 V
Max. continuous operating a.c. voltage (U_C)	24.5 V
Nominal current (I_N)	0.5 A
D1 Lightning impulse current (10/350 μ s) per line (I_{imp})	1 kA
C2 Total nominal discharge current (8/20 μ s) (I_n)	10 kA
C2 Nominal discharge current (8/20 μ s) per line (I_n)	10 kA
Voltage protection level line-line for I_n C2 (U_P)	≤ 120 V
Voltage protection level line-PG for I_n C2 (U_P)	≤ 65 V
Voltage protection level line-line at 1 kV/ μ s C3 (U_P)	≤ 98 V
Voltage protection level line-PG at 1 kV/ μ s C3 (U_P)	≤ 49 V
Series impedance per line	4.7 ohms
Capacitance line-line (C)	≤ 250 pF
Capacitance line-PG (C)	≤ 450 pF
Operating temperature range	-40°C...+80°C
Degree of protection	IP 67
For mounting on (field/device side)	1/2-14 NPT male thread / 1/2-14 NPT male thread
Connection (input/output)	connecting leads AWG 16
Length of the connecting lead	500 mm
Earthing via	enclosure and connecting lead
Enclosure material	V2A
Colour	bare surface
Test standards	IEC 61643-21 / EN 61643-21
SIL classification	SIL2 / SIL3 *)
Approvals	UL, GOST

*) For more detailed information, please refer to www.dehn.de/en/sil/



Screwable SPDs

EMC Cable Gland

Brass gland with shield connection

Type	KV S M20 MS 9.5
Part No.	929 982
Sealing range (Rd)	6.5 - 9.5 mm
Shield diameter	3.2 - 6.5 mm
For mounting on	M20 x 1.5
Degree of protection	IP 68
Material	nickel-plated brass



- For direct shield earthing
- Tested with DEHNpipe

Cable Gland

Brass gland without shield connection

Type	KV M20 MS 10.5
Part No.	929 984
Sealing range (Rd)	7.0 - 10.5 mm
For mounting on	M20 x 1.5
Degree of protection	IP 68
Material	nickel-plated brass



- No direct shield connection
- Tested with DEHNpipe

Brass Earthing Ring

Earthing ring made of nickel-plated brass for externally earthing DEHNpipe arresters

Type	ER DPI M20
Part No.	929 996
For mounting on	DPI M20 x 1.5
Material	nickel-plated brass



- Recommended for mounting DEHNpipe arresters in insulating enclosures





- Maximum degree of protection by installation in the cable run
- For all field devices with suitable cable gland
- Two-part design for easy installation
- ATEX, FISCO, IECEx approval



Surge arrester for outdoor use to be screwed onto two-wire field devices. Stainless steel, installation up to a degree of protection of IP 67.

DEHNpipe is made of corrosion-resistant stainless steel and is screwed onto the field device instead of the conventional cable gland. The permanently connected lines are then connected to the terminals of the field device. Thus, the protective components are directly situated in the cable run, allowing energy-coordinated surge protection. The arrester protects

the inside of the field device against dangerous surges with the interfering impulses being discharged via the metal enclosure only and not via the inside of the field device. DEHNpipe MD Ex (i) can be either used in Ex zone 1 or 2.



IECEx approval for DPI MD EX *)

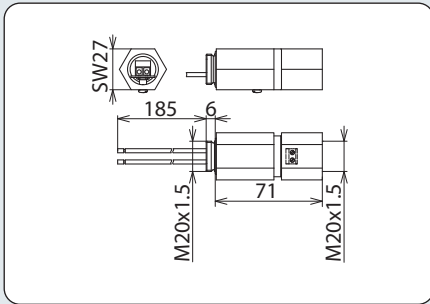


ATEX approval for DPI MD EX *)

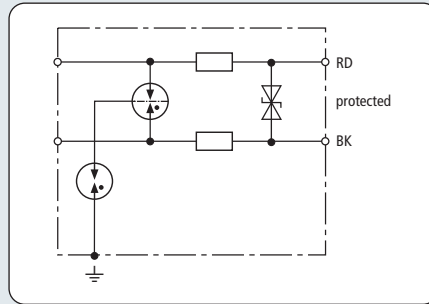
*) The certificates can be downloaded at www.dehn.de



SPDs for Use in Potentially Explosive Atmospheres



Dimension drawing DPI MD EX



Basic circuit diagram DPI MD EX



- Two-part design for easy installation
- Self-capacitance and self-inductance negligibly small
- For installation in conformity with the lightning protection zones concept at the boundaries from $0_B - 2$ and higher

Energy-coordinated two-stage surge arrester with low-capacitance protective circuit for protecting intrinsically safe measuring circuits and bus systems, meets FISCO requirements. Insulation strength > 500 V to earth. Cable glands must be ordered separately.

Type	DPI MD EX 24 M 2
Part No.	929 960
SPD class	TYPE 2 P1
Nominal voltage (U_N)	24 V
Max. continuous operating d.c. voltage (U_C)	34.8 V
Max. continuous operating a.c. voltage (U_C)	24.5 V
Max. input voltage acc. to EN 60079-11 (U_i)	30 V
Max. input current acc. to EN 60079-11 (I_i)	0.5 A
Nominal current (I_n)	0.5 A
D1 Lightning impulse current (10/350 μ s) per line (I_{imp})	1 kA
C2 Total nominal discharge current (8/20 μ s) (I_n)	10 kA
C2 Nominal discharge current (8/20 μ s) per line (I_n)	5 kA
Voltage protection level line-line for I_n C2 (U_p)	≤ 55 V
Voltage protection level line-PG for I_n C2 (U_p)	≤ 1100 V
Voltage protection level line-line at 1 kV/ μ s C3 (U_p)	≤ 49 V
Voltage protection level line-PG at 1 kV/ μ s C3 (U_p)	≤ 1000 V
Series impedance per line	1.8 ohms
Cut-off frequency line-line (f_G)	7 MHz
Capacitance line-line (C)	≤ 850 pF
Capacitance line-PG (C)	≤ 15 pF
Operating temperature range	-40°C...+80°C
Degree of protection	IP 67
For mounting on (field/device side)	M20 x 1.5 female thread / M20 x 1.5 male thread
Connection (input/output)	screw / connecting leads (1.5 mm ²)
Length of the connecting lead	200 mm
Cross-sectional area, solid	0.08 - 2.5 mm ²
Cross-sectional area, flexible	0.08 - 1.5 mm ²
Earthing via	enclosure
Enclosure material	V2A
Colour	bare surface
Test standards	IEC 61643-21 / EN 61643-21
SIL classification	SIL2 / SIL3 *)
ATEX approvals	DEKRA 11ATEX0076 X: II 2 (1) G Ex ia [ia Ga] IIC T4 ... T6 Gb
IECEx approvals	DEK 11.0025X: Ex ia [ia Ga] IIC T4 ... T6 Gb
Approvals	GOST

*) For more detailed information please refer to www.dehn.de/en/sil/

Accessory for DEHNpipe MD Ex (i)

Cable Gland

Brass gland without shield connection

Type	KV M20 MS 10.5
Part No.	929 984
Sealing range	7.0 - 10.5 mm



Accessory for DEHNpipe MD Ex (i)

EMC Cable Gland

Brass gland with shield connection

Type	KV S M20 MS 9.5
Part No.	929 982
Sealing range	6.5 - 9.5 mm



Surge arrester

SPDs for Use in Potentially Explosive Atmospheres



Surge arrester for outdoor use to be screwed onto two-wire field devices. Stainless steel, installation up to a degree of protection IP 67.

DEHNpipe C is made of corrosion-resistant stainless steel and is screwed directly onto the field device. Like a field cable, the permanently connected lines are connected to the terminals of the field device. Thus, the protective components are situated in parallel to the cable run. DEHNpipe C can be easily connected to metal or plastic enclosures as the earth wire of the protective device can be connected to the earth terminal of a field device.

- Surge protective device for field devices with spare cable gland
- Easy to retrofit and extremely space-saving
- ATEX, FISCO, IECEx approval

The design of the surge arrester allows a degree of protection IP 67. Intrinsically safe surge arresters are typically used in 4-20 mA measuring circuits or bus systems up to 30 V. Depending on the type used, DEHNpipe C is designed for measuring sensors with M20 x 1.5 or 1/2-14 NPT cable gland connections and can be either installed in Ex zones 1 or 2.



IECEx approval for DPI CD EXI *)

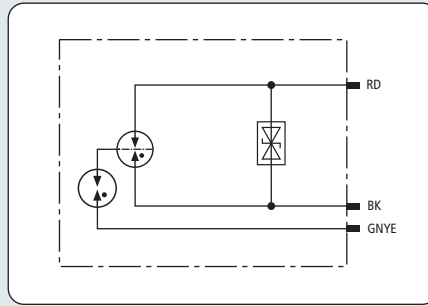


ATEX approval for DPI CD EXI *)

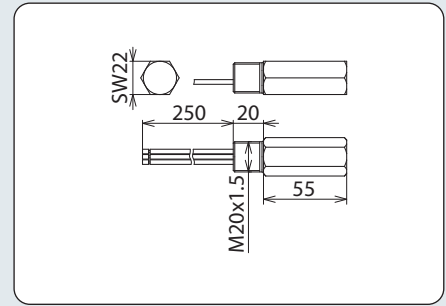


*) The certificates can be downloaded at www.dehn.de





Basic circuit diagram DPI CD EXI



Dimension drawing DPI CD EXI

- Easy to mount on field devices with spare cable gland
- Self-capacitance and self-inductance negligibly small
- For installation in conformity with the lightning protection zones concept at the boundaries from $O_B - 2$ and higher

Surge arrester with a low-capacitance protective circuit for protecting intrinsically safe measuring circuits and bus systems, meets FISCO requirements. Insulation strength > 500 V to earth.

Type	DPI CD EXI 24 M	DPI CD EXI 24 N
Part No.	929 961	929 963
SPD class	TYPE 2 P1	TYPE 2 P1
Nominal voltage (U_n)	24 V	24 V
Max. continuous operating d.c. voltage (U_c)	32 V	32 V
Max. continuous operating a.c. voltage (U_c)	22.6 V	22.6 V
Max. input voltage acc. to EN 60079-11 (U_i)	30 V	30 V
Max. input current acc. to EN 60079-11 (I_i)	0.55 A	0.55 A
Nominal current (I_n)	0.55 A	0.55 A
D1 Lightning impulse current (10/350 μ s) line-PG (I_{imp})	1 kA	1 kA
C2 Total nominal discharge current (8/20 μ s) (I_n)	10 kA	10 kA
C2 Nominal discharge current (8/20 μ s) line-line (I_n)	150 A	150 A
C2 Nominal discharge current (8/20 μ s) line-PG (I_n)	10 kA	10 kA
Voltage protection level line-line for I_n C2 (U_p)	≤ 58 V	≤ 58 V
Voltage protection level line-PG for I_n C2 (U_p)	≤ 1700 V	≤ 1700 V
Voltage protection level line-line at 1 kV/ μ s C3 (I)	≤ 50 V	≤ 50 V
Voltage protection level line-PG at 1 kV/ μ s C3 (U_p)	≤ 1200 V	≤ 1200 V
Cut-off frequency line-line (f_c)	67 MHz	67 MHz
Capacitance line-line (C)	≤ 25 pF	≤ 25 pF
Capacitance line-PG (C)	≤ 15 pF	≤ 15 pF
Operating temperature range	-50°C...+80°C	-50°C...+80°C
Degree of protection	IP 67	IP 67
For mounting on (field/device side)	M20 x 1.5 male thread	1/2-14 NPT male thread
Connection (input/output)	connecting leads (1.3 mm ²)	connecting leads (1.3 mm ²)
Length of the connecting lead	250 mm	250 mm
Earthing via	connecting lead	connecting lead
Enclosure material	V4A	V4A
Colour	bare surface	bare surface
Test standards	IEC 61643-21 / EN 61643-21	IEC 61643-21 / EN 61643-21
SIL classification	SIL2 *)	SIL2 *)
ATEX approvals	KEMA 04ATEX1189 X: II 2 (1) G Ex ia IIC T5 ... T6	KEMA 04ATEX1189 X: II 2 (1) G Ex ia IIC T5 ... T6
IECEx approvals	KEM 09.0076X: Ex ia [ia Ga] IIC T5 ... T6 Gb	KEM 09.0076X: Ex ia [ia Ga] IIC T5 ... T6 Gb
Approvals	GOST	GOST

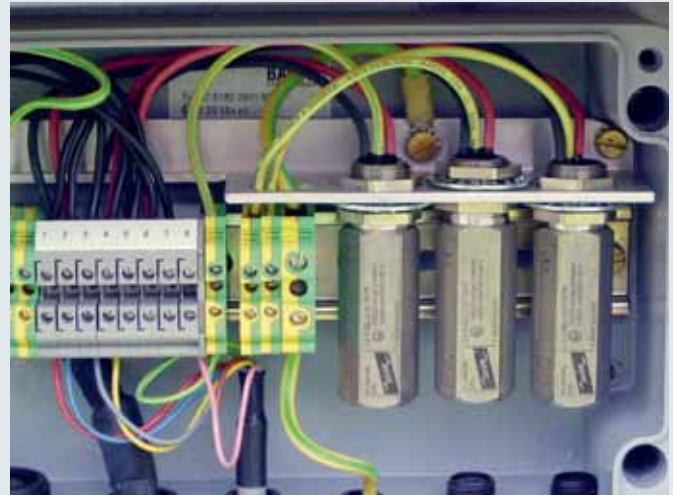
*) For more detailed information, please refer to www.dehn.de/en/sil/



SPDs for Use in Potentially Explosive Atmospheres

Surge arrester

- Surge protective device for field devices with spare cable gland or field bus distributors in hazardous areas
- Easy to retrofit and extremely space-saving
- ATEX, IECEx, CSA Hazloc approval



Surge arrester for outdoor use to be screwed onto two-wire field devices. Stainless steel. Installation up to a degree of protection IP 67.

The flameproof DEHNpipe C surge arrester is made of corrosion-resistant stainless steel and is directly screwed onto the field device. Like a field cable, the permanently connected lines are connected to the terminals of the field device. Thus, the protection components are situated in parallel to the cable run. The device can be easily connected to metal or plastic field enclosures as the earth wire of the protective device can be connected to the earth terminal of a field device.

The design of the surge arrester allows a degree of protection IP 67. These flameproof arresters are typically used in 4-20 mA measuring circuits or bus systems up to 30 V. Depending on the type used, DEHNpipe C is designed for measuring sensors with M 20 x 1.5 or 1/2-14 NPT cable gland connections and can be either installed in Ex zone 1 or 2.



IECEx approval for DPI CD EXD *)



ATEX approval for DPI CD EXD 24 ... / HF EXD ... *)

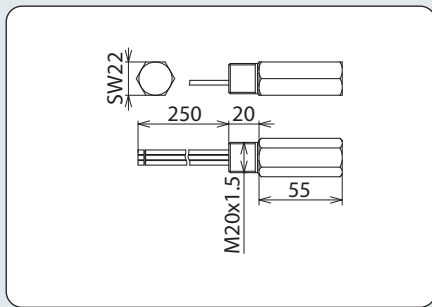


ATEX approval for DPI CD EXD 230 24 ... *)

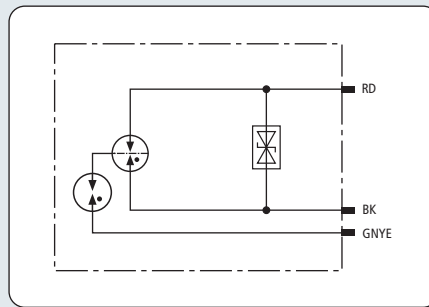


*) The certificates can be downloaded at www.dehn.de





Dimension drawing DPI CD EXD



Basic circuit diagram DPI CD EXD



- Easy to mount on the spare cable gland of field devices
- Type Ex(d) for universal use
- For installation in conformity with the lightning protection zones concept at the boundaries from $0_B - 2$ and higher

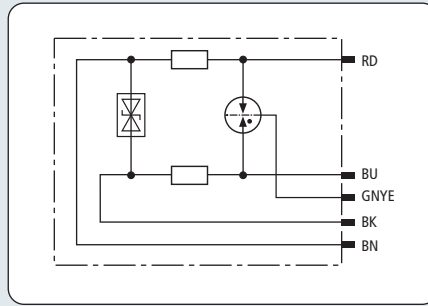
Flameproof surge arrester with a low-capacitance protective circuit for protecting measuring circuits and bus systems in potentially explosive atmospheres. Insulation strength > 500 V to earth. Certified to CSA and USA Hazloc standards.

Type	DPI CD EXD 24 M	DPI CD EXD 24 N
Part No.	929 962	929 964
SPD class	TYPE 2 P1	TYPE 2 P1
Nominal voltage (U_N)	24 V	24 V
Max. continuous operating d.c. voltage (U_C)	32 V	32 V
Max. continuous operating a.c. voltage (U_C)	22.6 V	22.6 V
Nominal current (I_N)	0.55 A	0.55 A
D1 Lightning impulse current (10/350 μ s) line-PG (I_{imp})	1 kA	1 kA
C2 Total nominal discharge current (8/20 μ s) (I_n)	10 kA	10 kA
C2 Nominal discharge current (8/20 μ s) per line (I_n)	10 kA	10 kA
Voltage protection level line-line for I_n C2 (U_p)	≤ 58 V	≤ 58 V
Voltage protection level line-PG for I_n C2 (U_p)	≤ 1700 V	≤ 1700 V
Voltage protection level line-line at 1 kV/ μ s C3 (U_p)	≤ 50 V	≤ 50 V
Voltage protection level line-PG at 1 kV/ μ s C3 (U_p)	≤ 1200 V	≤ 1200 V
Cut-off frequency line-line (f_c)	67 MHz	67 MHz
Capacitance line-line (C)	≤ 25 pF	≤ 25 pF
Capacitance line-PG (C)	≤ 15 pF	≤ 15 pF
Operating temperature range	-50°C...+80°C	-50°C...+80°C
Degree of protection	IP 67	IP 67
For mounting on (field/device side)	M20 x 1.5 male thread	1/2-14 NPT male thread
Connection (input/output)	connecting leads (1.3 mm ²)	connecting leads (1.3 mm ²)
Length of the connecting lead	250 mm	250 mm
Earthing via	connecting lead	connecting lead
Enclosure material	V4A	V4A
Colour	bare surface	bare surface
Test standards	IEC 61643-21 / EN 61643-21	IEC 61643-21 / EN 61643-21
ATEX approvals	KEMA 04ATEX2190 X: II 2 G Ex d IIC T5 or T6	KEMA 04ATEX2190 X: II 2 G Ex d IIC T5 or T6
IECEx approvals	KEM 09.0064X: Ex d IIC T5 or T6 Gb	KEM 09.0064X: Ex d IIC T5 or T6 Gb
CSA & USA Hazloc approvals (1)	CSA 10.2317168: AEx d IIC T4...T6	CSA 10.2317168: AEx d IIC T4...T6
CSA & USA Hazloc approvals (2)	CSA 10.2317168: Class I Div 1, 2; Class I Zone 1	CSA 10.2317168: Class I Div 1, 2; Class I Zone 1
SIL classification	SIL2 *)	SIL2 *)
Approvals	GOST	GOST

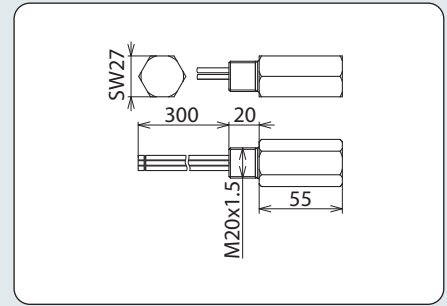
*) For more detailed information, please refer to www.dehn.de/en/sil/

DPI CD HF EXD

SPDs for Use in Potentially Explosive Atmospheres



Basic circuit diagram DPI CD HF EXD



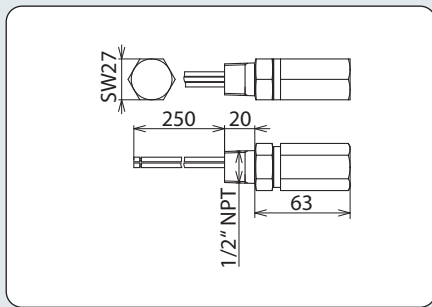
Dimension drawing DPI CD HF EXD

- Easy to mount on the spare cable gland of field devices
- Ex (d) version for a wide range of applications
- For installation in conformity with the lightning protection zones concept at the boundaries from $0_B - 2$ and higher

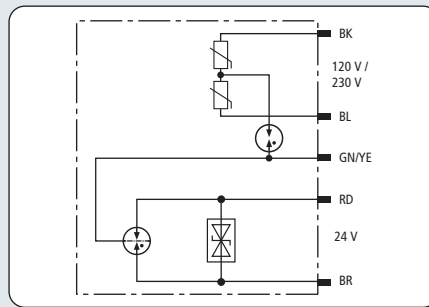
Flameproof surge arrester with an energy-coordinated low-capacitance protective circuit for protecting measuring circuits and bus systems in potentially explosive atmospheres.

Type	DPI CD HF EXD 5 M
Part No.	929 971
SPD class	TYPE 2 P1
Nominal voltage (U_N)	5 V
Max. continuous operating d.c. voltage (U_C)	6 V
Max. continuous operating a.c. voltage (U_C)	4.2 V
Nominal current at 80° C (I_N)	0.1 A
C2 Total nominal discharge current (8/20 μ s) (I_n)	20 kA
C2 Nominal discharge current (8/20 μ s) per line (I_n)	10 kA
Voltage protection level line-line for I_n C2 (U_p)	≤ 55 V
Voltage protection level line-PG for I_n C2 (U_p)	≤ 1000 V
Voltage protection level line-line at 1 kV/ μ s C3 (U_p)	≤ 12 V
Voltage protection level line-PG at 1 kV/ μ s C3 (U_p)	≤ 700 V
Cut-off frequency line-line (f_G)	100 MHz
Capacitance line-line (C)	≤ 40 pF
Capacitance line-PG (C)	≤ 30 pF
Series impedance per line	4.7 ohms
Operating temperature range	-50°C...+80°C
Degree of protection	IP 67
For mounting on field/device side	M20 x 1.5 male thread
Connection input/output	connecting leads (1.3 mm ²)
Length of the connecting lead	300 mm
Earthing via	connecting lead
Enclosure material	V4A
Colour	bare surface
Test standards	IEC 61643-21 / EN 61643-21
ATEX approvals	KEMA 04ATEX2190 X: II 2 G Ex d IIC T5 or T6
IECEX approvals	KEM 09.0064X: Ex d IIC T5 or T6 Gb
Approvals	GOST





Dimension drawing DPI CD EXD 230 24



Basic circuit diagram DPI CD EXD 230 24



Flameproof surge arrester for the data and power side for protecting 120/230 V power supply systems and 24 V data interfaces of field devices in potentially explosive areas (zones 1 and 2). Additional safety due to distinctive Y circuit for 120/230 V power supply systems.

II 2 G Ex d IIC T5/T6 version universally applicable in hazardous zones 1 and 2. Certified to CSA and USA Hazloc standards.

- Dual surge protection for 120/230 V power supply systems and data interfaces
- Easy to mount on field devices with a spare cable gland
- For installation in conformity with the lightning protection zones concept at the boundaries from $O_B - 2$ and higher

Type	DPI CD EXD 230 24 M	DPI CD EXD 230 24 N
Part No.	929 969	929 970

Protection of the data side:

	TYPE 2P2	TYPE 2P2
SPD class	TYPE 2P2	TYPE 2P2
Nominal voltage (U_N)	24 V	24 V
Max. continuous operating d.c. voltage (U_C)	32 V	32 V
Max. continuous operating a.c. voltage (U_C)	22.6 V	22.6 V
Nominal current at 80° C (I_N)	0.55 A	0.55 A
D1 Lightning impulse current (10/350 μ s) line-PG (I_{imp})	1 kA	1 kA
C2 Total nominal discharge current (8/20 μ s) (I_n)	10 kA	10 kA
Voltage protection level line-line for I_n C2 (U_p)	≤ 58 V	≤ 58 V
Voltage protection level line-PG for I_n C2 (U_p)	≤ 900 V	≤ 900 V
Voltage protection level line-line at 1 kV/ μ s C3 (U_p)	≤ 50 V	≤ 50 V
Voltage protection level line-PG at 1 kV/ μ s C3 (U_p)	≤ 850 V	≤ 850 V
Capacitance line-line (C)	≤ 25 pF	≤ 25 pF
Capacitance line-PG (C)	≤ 15 pF	≤ 15 pF
Operating temperature range	-40°C...+80°C	-40°C...+80°C
Degree of protection	IP 67	IP 67
For mounting on (field/device side)	M20 x 1.5 male thread	1/2-14 npt male thread
Connection (input/output)	connecting leads (1.3 mm ²)	connecting leads (1.3 mm ²)
Length of the connecting lead	250 mm	250 mm
Earthing via	connecting lead	connecting lead
Enclosure material	V4A	V4A
Colour	bare surface	bare surface
Test standards	IEC 61643-21 / EN 61643-21	IEC 61643-21 / EN 61643-21
ATEX approvals	KEMA 10ATEX0114 X: II 2 G Ex d IIC T5/T6	KEMA 10ATEX0114 X: II 2 G Ex d IIC T5/T6
IECEx approvals	DEK 11.0006X: Ex d IIC T5 or T6 Gb	DEK 11.0006X: Ex d IIC T5 or T6 Gb
CSA & USA Hazloc approvals (1)	CSA 10.2317168: AEx d IIC T4...T6	CSA 10.2317168: AEx d IIC T4...T6
CSA & USA Hazloc approvals (2)	CSA 10.2317168: Class I Div 1, 2; Class I Zone 1	CSA 10.2317168: Class I Div 1, 2; Class I Zone 1
Approvals	GOST	GOST

Protection of the power side:

SPD according to EN 61643-11	Type 2	Type 2
SPD according to IEC 61643-1	Class II	Class II
Nominal a.c. voltage (U_N)	120/230 V	120/230 V
Max. continuous operating a.c. voltage (U_C)	255 V	255 V
Nominal discharge current (8/20 μ s) L-N (I_n)	3 kA	3 kA
Total discharge current (8/20 μ s) L+N-PE (I_{total})	5 kA	5 kA
Voltage protection level L-N (U_p)	≤ 1.4 kV	≤ 1.4 kV
Voltage protection level L/N-PE (U_p)	≤ 1.5 kV	≤ 1.5 kV
Max. discharge current L-N (I_{max})	3 kA	3 kA
Max. mains-side overcurrent protection	16 A gL/gG or B 16 A	16 A gL/gG or B 16 A
Short-circuit withstand capability for mains-side overcurrent protection with 16 A gL/gG	6 kA _{rms}	6 kA _{rms}
Temporary overvoltage (TOV) L-N (U_T)	335 V / 5 sec.	335 V / 5 sec.
Temporary overvoltage (TOV) L/N-PE (1) (U_T)	400 V / 5 sec.	400 V / 5 sec.
Temporary overvoltage (TOV) L/N-PE (2) (U_T)	1200 V+ U_{CS} / 200 ms	1200 V+ U_{CS} / 200 ms
Indication of the disconnecter	upstream fuse	upstream fuse

Surge arrester

SPDs for Use in Potentially Explosive Atmospheres



- Surge protective device for field devices with spare cable gland or fieldbus distributors in potentially explosive atmospheres
- Flexible use in Ex(i) and Ex(d) circuits
- Protection of two signal circuits in a single device
- Easy installation and retrofitting
- ATEX, IECEx and FISCO approval

Different DEHNpipe versions for two signal circuits or one supply circuit and one signal circuit for field devices in potentially explosive atmospheres

The devices of the DEHNpipe family are made of corrosion-resistant stainless steel and can be directly screwed onto a field device in a potentially explosive atmosphere. Like a field cable, the permanently connected lines are connected to the terminals of the field device. The surge arresters can be used for a wide range of applications. A single arrester is capable of protecting two unearthed signal circuits or the supply circuit of the field device and one signal circuit. When installed in a fieldbus distributor, two field devices can be protected by a single arrester. The surge arresters are designed in such a way that the protection components are arranged in parallel to the cable run.

Due to the different approvals, the surge arresters can be installed on field devices in intrinsically safe measuring circuits Ex(i) or on devices with flameproof enclosure and are suitable for use in Ex zone 1 or 2.

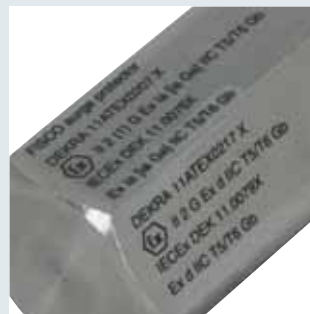
The surge arresters are ideally suited for installation in process environments, for example on transducers or field bus devices. 4-20 mA measuring circuits or bus systems up to 30 V are typical fields of application.



Robust design for Ex(i) and Ex(d) applications



Metric and NPT thread



ATEX and IECEx approval





IECEx approval for DPI CD EXI+D *)



ATEX approval for DPI CD EXI+D *)

*) The certificates can be downloaded at www.dehn.de

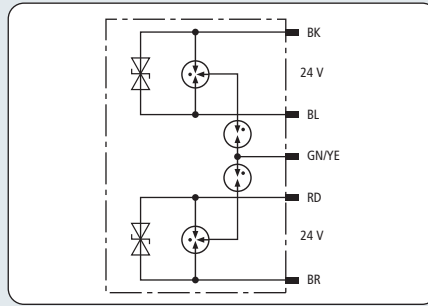
DPI CD EXI+D 2X24

SPDs for Use in Potentially Explosive Atmospheres

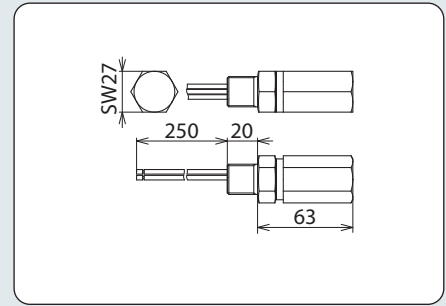


Presumably available in the second quarter 2012

- Easy installation on field devices with a spare cable gland
- Flexible use in Ex(i) and Ex(d) circuits
- Installation in conformity with the lightning protection zones concept at the boundaries from $O_B - 2$ and higher



Basic circuit diagram DPI CD EXI+D

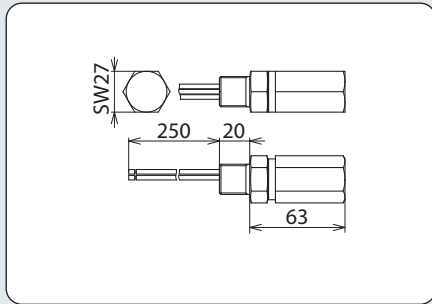


Dimension drawing DPI CD EXI+D

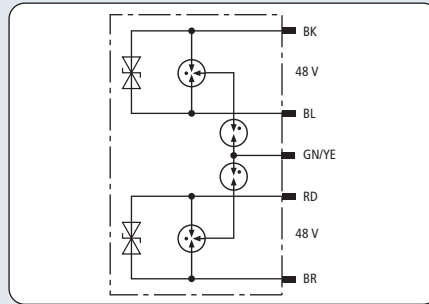
Flameproof surge arrester for protecting two 24 V interfaces in potentially explosive atmospheres.

Type	DPI CD EXI+D 2X24 M	DPI CD EXI+D 2X24 N
Part No.	929 950	929 951
SPD class	TYPE 2P1	TYPE 2P1
Nominal voltage (U_N)	24 V	24 V
Max. continuous operating d.c. voltage (U_C)	36 V	36 V
Max. continuous operating a.c. voltage (U_C)	25.4 V	25.4 V
Nominal current (I_N)	0.55 A	0.55 A
D1 Lightning impulse current (10/350 μ s) line-PG (I_{imp})	1.5 kA	1.5 kA
C2 Total nominal discharge current (8/20 μ s) (I_n)	20 kA	20 kA
C2 Nominal discharge current (8/20 μ s) line-PG (I_n)	10 kA	10 kA
Voltage protection level line-line for I_n C2 (U_p)	≤ 65 V	≤ 65 V
Voltage protection level line-PG for I_n C2 (U_p)	≤ 2000 V	≤ 2000 V
Voltage protection level line-line at 1 kV/ μ s C3 (U_p)	≤ 50 V	≤ 50 V
Voltage protection level line-PG at 1 kV/ μ s C3 (U_p)	≤ 1200 V	≤ 1200 V
Capacitance line-line (C)	≤ 2 nF	≤ 2 nF
Capacitance line-PG (C)	≤ 15 pF	≤ 15 pF
Operating temperature range	-40°C...+80°C	-40°C...+80°C
Degree of protection	IP 67	IP 67
Mounting (field/device side)	M20 x 1.5 male thread	1/2-14 NPT male thread
Connection (input/output)	connecting leads (1.3 mm ²)	connecting leads (1.3 mm ²)
Length of the connecting lead	250 mm	250 mm
Earthing via	connecting lead	connecting lead
Enclosure material	V4A	V4A
Colour	bare surface	bare surface
Test standards	IEC 61643-21 / EN 61643-21	IEC 61643-21 / EN 61643-21
ATEX approvals (1)	KEMA 11ATEX0207 X: II 2 (1) G Ex ia [ia Ga] IIC T5 or T6 Gb	KEMA 11ATEX0207 X: II 2 (1) G Ex ia [ia Ga] IIC T5 or T6 Gb
ATEX approvals (2)	KEMA 11ATEX0217 X: II 2 G Ex d IIC T5 or T6 Gb	KEMA 11ATEX0217 X: II 2 G Ex d IIC T5 or T6 Gb
IECEX approvals (1)	DEK 11.0076X: Ex ia [ia Ga] IIC T5 or T6 Gb	DEK 11.0076X: Ex ia [ia Ga] IIC T5 or T6 Gb
IECEX approvals (2)	DEK 11.0079X: Ex d IIC T5 or T6 Gb	DEK 11.0079X: Ex d IIC T5 or T6 Gb





Dimension drawing DPI CD EXI+D



Basic circuit diagram DPI CD EXI+D



Presumably available in the second quarter 2012

Flameproof surge arrester for protecting two 48 V interfaces in potentially explosive atmospheres.

- Easy installation on field devices with a spare cable gland
- Flexible use in Ex(i) and Ex(d) circuits
- Installation in conformity with the lightning protection zones concept at the boundaries from 0_B – 2 and higher

Type	DPI CD EXI+D 2X48 M	DPI CD EXI+D 2X48 N
Part No.	929 952	929 953
SPD class	TYPE 2 P1	TYPE 2 P1
Nominal voltage (U _N)	48 V	48 V
Max. continuous operating d.c. voltage (U _C)	58 V	58 V
Max. continuous operating a.c. voltage (U _C)	41 V	41 V
Nominal current (I _L)	0.55 A	0.55 A
D1 Lightning impulse current (10/350 μs) line-PG (I _{imp})	1.5 kA	1.5 kA
C2 Total nominal discharge current (8/20 μs) (I _n)	20 kA	20 kA
C2 Nominal discharge current (8/20 μs) line-PG (I _n)	10 kA	10 kA
Voltage protection level line-line for I _n C2 (U _p)	≤ 95 V	≤ 95 V
Voltage protection level line-PG for I _n C2 (U _p)	≤ 2000 V	≤ 2000 V
Voltage protection level line-line at 1 kV/ μs C3 (U _p)	≤ 80 V	≤ 80 V
Voltage protection level line-PG at 1 kV/ μs C3 (U _p)	≤ 1200 V	≤ 1200 V
Capacitance line-line (C)	≤ 1.2 nF	≤ 1.2 nF
Capacitance line-PG (C)	≤ 15 pF	≤ 15 pF
Operating temperature range	-40°C...+80°C	-40°C...+80°C
Degree of protection	IP 67	IP 67
Mounting (field/device side)	M20 x 1.5 male thread	1/2-14 NPT male thread
Connection (input/output)	connecting leads (1.3 mm ²)	connecting leads (1.3 mm ²)
Length of the connecting lead	250 mm	250 mm
Earthing via	connecting lead	connecting lead
Enclosure material	V4A	V4A
Colour	bare surface	bare surface
Test standards	IEC 61643-21 / EN 61643-21	IEC 61643-21 / EN 61643-21
ATEX approvals (1)	KEMA 11ATEX0207 X: II 2 (1) G Ex ia [ia Ga] IIC T5 or T6 Gb	KEMA 11ATEX0207 X: II 2 (1) G Ex ia [ia Ga] IIC T5 or T6 Gb
ATEX approvals (2)	KEMA 11ATEX0217 X: II 2 G Ex d IIC T5 or T6 Gb	KEMA 11ATEX0217 X: II 2 G Ex d IIC T5 or T6 Gb
IECEx approvals (1)	DEK 11.0076X: Ex ia [ia Ga] IIC T5 or T6 Gb	DEK 11.0076X: Ex ia [ia Ga] IIC T5 or T6 Gb
IECEx approvals (2)	DEK 11.0079X: Ex d IIC T5 or T6 Gb	DEK 11.0079X: Ex d IIC T5 or T6 Gb

Surge arrester

SPDs for Use in Potentially Explosive Atmospheres



Pluggable, multipole, universal surge arrester for use in intrinsically safe systems with integrated LifeCheck monitoring device

BLITZDUCTOR XT EX is a pluggable, four-pole, universal DIN rail mounted surge arrester designed for the most stringent requirements on the availability of intrinsically safe measuring and control circuits and bus systems.

With regard to intrinsic safety, the arrester is considered earth-free and its self-inductance and self-capacitance are negligibly small. The low-impedance arrester design ensures a high impulse current discharge capacity (min. 10x) and a low voltage protection level.

LifeCheck allows quick and easy testing of arresters. However, the protection modules may only be read out by means of the hand-held DRC LC reader in non-explosive atmospheres.

Integrated into the protection modules, LifeCheck permanently monitors

- Effective protection with minimum space requirements
- For two-pole, three-pole or four-pole intrinsically safe interfaces
- Function-optimised design for safe use and easy installation
- Quick testing of LifeCheck-equipped protection modules
- ATEX, FISCO approval

the proper condition of the arrester. Like an early warning system, LifeCheck reliably detects imminent electrical or thermal overload of the protection components. The LifeCheck status can be read out within a matter of seconds by means of the hand-held DEHNrecord LC reader via contactless RFID technology and also shows the date of the last test of the protection module. A stationary condition monitoring system allows condition-based maintenance of 10 BXT arresters.

To ensure safe operation, the arrester provides protection against vibration effects and shock up to a 30-fold acceleration of gravity. The function-optimised design of the devices allows quick and easy replacement of protection modules which house all relevant protection elements. The protection module and the base part must be ordered separately.



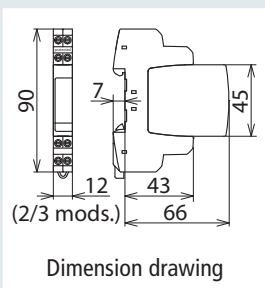
BLITZDUCTOR XT EX

Completely installed BLITZDUCTOR XT EX. Two-part design with universal base part and application-specific protection module. Particularly space-saving, for DIN rail mounting.



Base part

Universal base part accommodates all types of protection modules. The protection modules can be easily removed from the base part without signal interruption thereby minimising storage requirements as well as prewiring and maintenance operations.



Dimension drawing of a BLITZDUCTOR XT EX base part with protection module. Width: 2/3 modules (12 mm), for use in distribution boards with DIN rails.

Dimension drawing



Four different versions

BXT ML4 BD EX 24:
Universal LifeCheck-equipped surge arrester module for protecting two intrinsically safe circuits such as 4-20 mA, HART, PROFIBUS.

BXT ML2 BD S EX 24:
LifeCheck-equipped universal surge arrester module for one intrinsically safe circuit such as 4-20 mA, PROFIBUS. Optionally available with direct/indirect shield earthing.

BXT ML4 BC EX 24:
For protecting, for example three or four-wire temperature measuring systems.

BXT ML2 BD HF EX 6:
For protecting one pair for fast data transmission and supply currents up to 4.8 A.



KEMA

(1) **EC-TYPE EXAMINATION CERTIFICATE**

(2) **Equipment and protective systems intended for use in potentially explosive atmospheres - Directive 94/9/EC**

(3) EC-Type Examination Certificate Number: **KEMA 06ATEX0274 X** Issue Number: **2**

(4) Equipment: **Blitzductor BXT-series**

(5) Manufacturer: **DEHN + SÖHNE GmbH + Co. KG**

(6) Address: **Hans-Dehn-Strasse 1, 92218 Neumarkt/Opf., Germany**

(7) This equipment and any acceptable variation therein is specified in the schedule to this certificate and the documents therein referred to.

(8) KEMA Quality B.V., notified body number 0544 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres given in Annex II to the directive.

The examination and test results are recorded in confidential test report number 209501900.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:
EN 6079-0 : 2006 EN 6079-11 : 2007 EN 6079-26 : 2007 EN 6079-27 : 2008

(10) If the sign "C" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

(11) This EC-Type Examination Certificate relates only to the design, examination and tests of the specified equipment according to the Directive 94/9/EC. Further requirements of the directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.

(12) The marking of the equipment shall include the following:

 **II 2 (1) G Ex Ia Ib IC T4, T5, T6 or II 2 G Ex Ib IC T4, T5, T6**

This certificate is issued on September 18, 2009 and, as far as applicable, shall be revised before the date of cessation of presumption of conformity of (one of) the standards mentioned above as communicated in the Official Journal of the European Union.

KEMA Quality B.V.

 C.G. van Es
 Certification Manager

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 T +31 26 5 98 22 00, F +31 26 5 92 98 00, customer@kema.com, www.kema.com, Registered Arnhem 19025296

KEMA

(13) **SCHEDULE**

(14) **to EC-Type Examination Certificate KEMA 06ATEX0274 X** Issue No. **2**

(15) **Description**

The Blitzductor BXT series serve as transient suppressors in the lines of intrinsically safe circuits.

This approval applies to the following equipment types:
 BXT BAS EX (Base unit)
 BXT ML4 BD EX 24 (Module)
 BXT ML4 BC EX 24 (Module)
 BXT ML2 BD HF EX 6 (Module)

The relation between the ambient temperature and temperature class is per table below.

Ambient temperature range	Temperature class
-40 °C to +60 °C	T0
-40 °C to +75 °C	T5
-40 °C to +80 °C	T4

Electrical data

For Blitzductor BXT series type BXT ML4 B, EX 24:
 The Blitzductor BXT series are in type of protection intrinsic safety.
 The level of protection "ia" or "ib" and the apparatus group (IC or IB or IIA) is determined by the intrinsically safe circuit(s) in which the Blitzductor BXT series is placed.

Module input circuits:
 $U_i = 30 \text{ V}$; $I_i = 500 \text{ mA}$; $P_i = \text{any}$; $C_i = 0 \text{ nF}$; $L_i = 0 \text{ mH}$

or for connection to a certified intrinsically safe circuit or a circuit in accordance with FISCO, with the following maximum values:
 $U_i = 17,5 \text{ V}$; $I_i = 380 \text{ mA}$; $P_i = 5,32 \text{ W}$; $C_i = 0 \text{ nF}$; $L_i = 0 \mu\text{H}$

Module output circuits:
 The values of U_o , I_o and P_o are determined by the parameters of the circuit(s) to which the Blitzductor BXT series is connected.

The electrical data applies to each circuit connected to Module type BXT ML4 BD EX 24 and to the combined circuits for Module type BXT ML4 BC EX 24.

For Blitzductor BXT series type BXT ML2 BD HF EX 6:
 The Blitzductor BXT series are in type of protection intrinsic safety.
 The level of protection "ib" and the apparatus group (IC or IB or IIA) is determined by the intrinsically safe circuit(s) in which the Blitzductor BXT series is placed.

Module input circuits:
 $U_i = 4,2 \text{ V}$; $I_i = 4,8 \text{ A}$; $P_i = \text{any}$; $C_i = 0 \text{ nF}$; $L_i = 0 \text{ mH}$

Module output circuits:
 The values of U_o , I_o and P_o are determined by the parameters of the circuit(s) to which the Blitzductor BXT series is connected.

CERTM V1.1

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KEMA

(13) **SCHEDULE**

(14) **to EC-Type Examination Certificate KEMA 06ATEX0274 X** Issue No. **2**

Installation instructions

The Blitzductor BXT series can be installed outside or within the potentially explosive atmosphere, however in all cases they may only be connected to intrinsically safe circuits.

When installed outside the potentially explosive atmosphere its operation may be checked by the LifeCheck unit model DEHNrecord DRC LC1 or DEHNrecord DRC LC2.

The degree of protection of the Blitzductor BXT series is IP20.
 When the environmental conditions are such that a higher degree of ingress protection is required, this shall be taken into account.

When the BXT BAS EX (Base unit) is installed inside the potentially explosive atmosphere for use in combination with module type BXT ML2 BD HF EX 6, the supply shall only be connected when a module is inserted.

(16) **Test Report**
 KEMA No. 209501900

(17) **Special conditions for safe use**

When the Blitzductor BXT series is used in a Fieldbus system according to FISCO, the power supply shall have infinite galvanic isolation and may not be connected to earth or shall be infinitely connected to the potential equalizing system within the hazardous area.

For ambient temperature range, see (15).

(18) **Essential Health and Safety Requirements**
 Covered by the standards listed at (9).

(19) **Test documentation**
 As listed in Test Report No. 209501900.

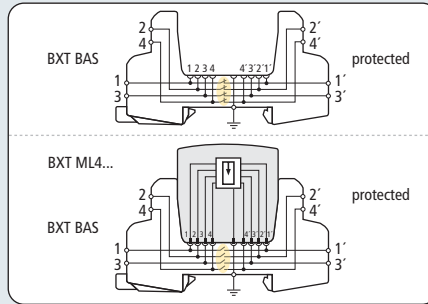
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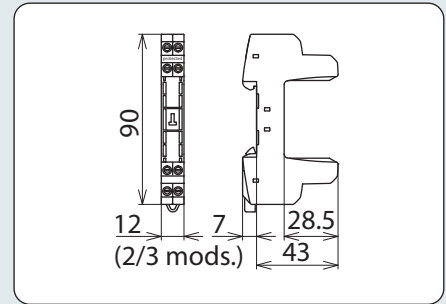
ATEX approval for BXT EX I *)

*) The certificates can be downloaded at www.dehn.de





Basic circuit diagram with and without module



Dimension drawing BXT BAS EX

- Four-pole and universal base part for all types of intrinsically safe protection modules
- Insertion and removal without signal interruption
- Universal design without protection elements

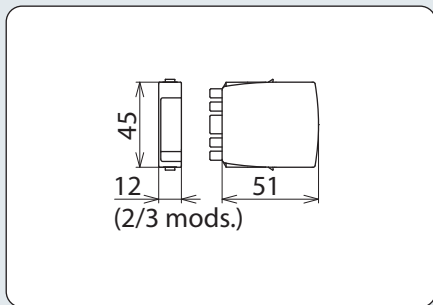
BLITZDUCTOR XT base part for use as an extremely space-saving, four-pole, universal feed-through terminal for intrinsically safe circuits and for the insertion of the protection module without signal interruption. The snap-in mechanism at the supporting foot of the base part allows the device to be safely earthed via the DIN rail. As no components of the protective circuit are situated in the base part, maintenance operation is only required for the protection modules. ATEX.

Type	BXT BAS EX
Part No.	920 301
Operating temperature range	-40°C...+80°C
Degree of protection	IP 20
For mounting on	35 mm DINs rail acc. to EN 60715
Connection (input/output)	screw / screw
Cross-sectional area, solid	0.08 - 4 mm ²
Cross-sectional area, flexible	0.08 - 2.5 mm ²
Tightening torque (terminals)	0.4 Nm
Earthing via	35 mm DIN rail acc. to EN 60715
Enclosure material	polyamide PA 6.6
Colour	blue
ATEX approvals (1)	KEMA 06ATEX0274 X: II 2 (1) G Ex ia [ia Ga] IIC T4, T5, T6 Gb *)
ATEX approvals (2)	KEMA 06ATEX0274 X: II 2 G Ex ib IIC T4, T5, T6, Gb *)
IECEx approvals (1)	DEK 11.0078X: Ex ia [ia Ga] IIC T4, T5, T6 Gb *)
IECEx approvals (2)	DEK 11.0078X: Ex ib IIC T4, T5, T6 Gb *)
Approvals	UL, CSA, GOST

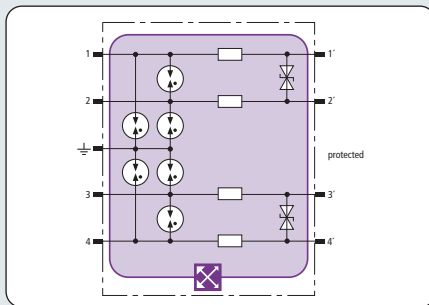
*) only in connection with an approved protection module

- Clear identification of the "protected" side for faultless installation**
- Leading/retarded make-before-break switch contacts for uninterrupted removal and insertion without downtime**
- Module release spring for removing the protection module without problems**
- The earthing foot ensures cost-effective installation. No additional earth connection is required since the device is safely earthed via the DIN rail.**
- Lightning current carrying laminated contacts**
- Reverse polarity protection prevents incorrect insertion of the protection module**
- Designation space for marking the circuits**
- High-quality, four-pole screw terminals for the following cross-sections:
stranded: 2.5 mm²
solid: 4 mm²**





Dimension drawing BXT ML4 BD EX



Basic circuit diagram BXT ML4 BD EX



Space-saving LifeCheck-equipped surge arrester module for protecting two pairs in intrinsically safe measuring circuits and bus systems, meets FISCO requirements. ATEX. Insulation strength > 500 V line-earth.

If LifeCheck detects thermal or electrical overload, the arrester has to be replaced. This status is indicated contactlessly by DEHNrecord LC / MCM.

- For universal use, with LifeCheck SPD monitoring function
- Self-capacitance and self-inductance negligibly small
- For installation in conformity with the lightning protection zones concept at the boundaries from 0_B – 2 and higher

Type	BXT ML4 BD EX 24
Part No.	920 381
SPD class	TYPE 2 P1
SPD monitoring	LifeCheck
Nominal voltage (U _N)	24 V
Max. continuous operating d.c. voltage (U _c)	33 V
Max. continuous operating a.c. voltage (U _e)	23 V
Max. input voltage acc. to EN 60079-11 (U _i)	30 V
Max. input current acc. to EN 60079-11 (I _i)	0.5 A
D1 Total lightning impulse current (10/350 μs) (I _{imp})	4 kA
D1 Lightning impulse current (10/350 μs) per line (I _{imp})	1 kA
C2 Total nominal discharge current (8/20 μs) (I _n)	20 kA
C2 Nominal discharge current (8/20 μs) per line (I _n)	5 kA
Voltage protection level line-line for I _{imp} D1 (U _p)	≤ 50 V
Voltage protection level line-PG for I _{imp} D1 (U _p)	≤ 1300 V
Voltage protection level line-line for I _n C2 (U _p)	≤ 52 V
Voltage protection level line-PG for I _n C2 (U _p)	≤ 1400 V
Voltage protection level line-line at 1 kV/μs C3 (U _p)	≤ 45 V
Voltage protection level line-PG at 1 kV/μs C3 (U _p)	≤ 1100 V
Series impedance per line	1.0 ohm
Cut-off frequency line-line (f _c)	7.7 MHz
Capacitance line-line (C)	≤ 0.8 nF
Capacitance line-PG (C)	≤ 16 pF
Operating temperature range	-40°C...+80°C
Degree of protection (with plugged-in protection module)	IP 20
Plugs into	base part
Earthing via	base part
Enclosure material	polyamide PA 6.6
Colour	blue
Test standards	IEC 61643-21 / EN 61643-21, UL 497B
SIL classification	SIL2 / SIL3 *)
ATEX approvals (1)	KEMA 06ATEX0274 X: II 2 (1) G Ex ia [ia Ga] IIC T4, T5, T6 Gb
ATEX approvals (2)	KEMA 06ATEX0274 X: II 2 G Ex ib IIC T4, T5, T6, Gb
IECEx approvals (1)	DEK 11.0078X: Ex ia [ia Ga] IIC T4, T5, T6 Gb
IECEx approvals (2)	DEK 11.0078X: Ex ib IIC T4, T5, T6 Gb
Approvals	CSA, GOST

*) For more detailed information, please refer to www.dehn.de/en/sil/

Accessories for BLITZDUCTOR® XT Ex (i) LifeCheck® Modules

DRC LC M3+

Portable device with LifeCheck sensor for flexible use. Fast and easy testing of LifeCheck-equipped arresters.

Type	DRC LC M3+
Part No.	910 653
Dimensions of storage case	340 x 275 x 83 mm



DRC MCM XT

DIN rail mounted device with integrated LifeCheck sensor for condition monitoring of max. 10 LifeCheck-equipped BXT arresters.

Type	DRC MCM XT
Part No.	910 695
Colour	grey



BXT BAS EX

Base part for use as a feed-through terminal in intrinsically safe circuits for the insertion of protection modules without signal interruption.

Type	BXT BAS EX
Part No.	920 301
Colour	blue



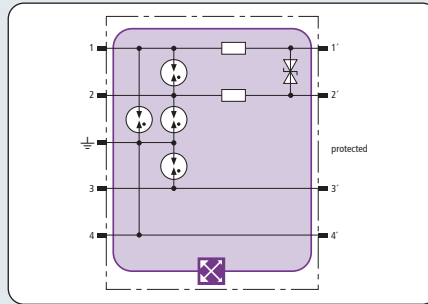
BXT ML2 BD S EX 24

SPDs for Use in Potentially Explosive Atmospheres

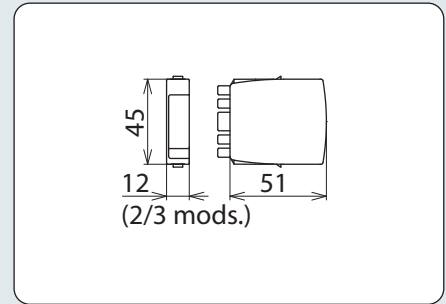


Presumably available in the second quarter 2012

- For universal use, with LifeCheck SPD monitoring function
- Self-capacitance and self-inductance negligibly small
- For installation in conformity with the lightning protection zones concept at the boundaries from 0_B – 2 and higher



Basic circuit diagram BXT ML2 BD S EX



Dimension drawing BXT ML2 BD S EX

Space-saving LifeCheck-equipped surge arrester module for protecting one pair in intrinsically safe measuring circuits and bus systems, direct or indirect shield earthing.

Insulation strength > 500 V line-earth.

If LifeCheck detects thermal or electrical overload, the arrester has to be replaced. This status is indicated contactlessly by DEHNrecord LC / MCM.

Type	BXT ML2 BD S EX 24
Part No.	920 280
SPD class	TYPE 2 P1
SPD monitoring	LifeCheck
Nominal voltage (U _N)	24 V
Max. continuous operating d.c. voltage (U _c)	33 V
Max. continuous operating a.c. voltage (U _c)	23.3 V
Max. input voltage acc. to EN 60079-11 (U _i)	30 V
Max. input current acc. to EN 60079-11 (I _i)	0.5 A
D1 Total lightning impulse current (10/350 μs) (I _{imp})	4 kA
D1 Lightning impulse current (10/350 μs) per line (I _{imp})	1 kA
C2 Total nominal discharge current (8/20 μs) (I _n)	10 kA
C2 Nominal discharge current (8/20 μs) per line (I _n)	5 kA
Voltage protection level line-line for I _{imp} D1 (U _p)	≤ 50 V
Voltage protection level line-PG for I _{imp} D1 (U _p)	≤ 1300 V
Voltage protection level line-line for I _n C2 (U _p)	≤ 52 V
Voltage protection level line-PG for I _n C2 (U _p)	≤ 1400 V
Voltage protection level line-line at 1 kV/μs C3 (U _p)	≤ 45 V
Voltage protection level line-PG at 1 kV/μs C3 (U _p)	≤ 1100 V
Series impedance per line	1.0 ohm
Cut-off frequency line-line (f _c)	6 MHz
Capacitance line-line (C)	≤ 1.0 nF
Capacitance line-PG (C)	≤ 16 pF
Operating temperature range	-40°C...+80°C
Degree of protection (with plugged-in protection module)	IP 20
Plugs into	base part
Earthing via	base part
Enclosure material	polyamide PA 6.6
Colour	blue
Test standards	IEC 61643-21 / EN 61643-21, UL 497B
ATEX approvals (1)	KEMA 06ATEX0274 X: II 2 (1) G Ex ia [ia Ga] IIC T4, T5, T6 Gb
ATEX approvals (2)	KEMA 06ATEX0274 X: II 2 G Ex ib IIC T4, T5, T6, Gb
IECEx approvals (1)	DEK 11.0078X: Ex ia [ia Ga] IIC T4, T5, T6 Gb
IECEx approvals (2)	DEK 11.0078X: Ex ib IIC T4, T5, T6 Gb

Accessories for BLITZDUCTOR® XT Ex (i) LifeCheck® Modules

BXT BAS EX

Base part for use as a feed-through terminal in intrinsically safe circuits for the insertion of protection modules without signal interruption.



Type	BXT BAS EX
Part No.	920 301
Colour	blue

DRC MCM XT

DIN rail mounted device with integrated LifeCheck sensor for condition monitoring of max. 10 LifeCheck-equipped BXT arresters.



Type	DRC MCM XT
Part No.	910 695
Colour	grey

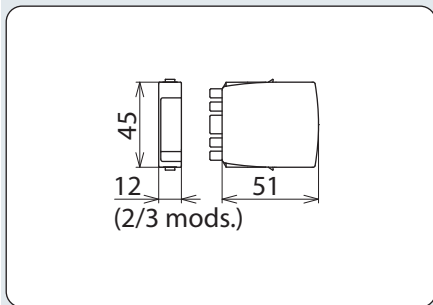
DRC LC M3+

Portable device with LifeCheck sensor for flexible use. Fast and easy testing of LifeCheck-equipped arresters.

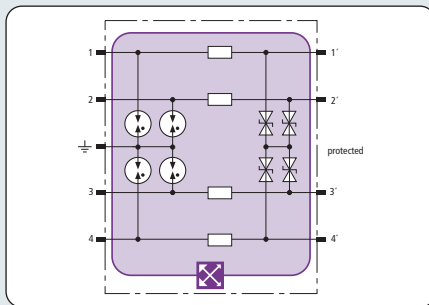


Type	DRC LC M3+
Part No.	910 653
Dimensions of storage case	340 x 275 x 83 mm

For "Accessories for BLITZDUCTOR XT Ex (i) LifeCheck modules", please also refer to pages 322/327/328/368/370.



Dimension drawing BXT ML4 BC EX



Basic circuit diagram BXT ML4 BC EX



Space-saving LifeCheck-equipped surge arrester module for protecting up to four unearthed single lines with common reference potential in intrinsically safe measuring circuits, meets FISCO requirements. ATEX. Insulation strength > 500 V line-earth.

If LifeCheck detects thermal or electrical overload, the arrester has to be replaced. This status is indicated contactlessly by DEHNrecord LC / MCM.

- For multi-wire measuring systems, with LifeCheck SPD monitoring device
- Self-capacitance and self-inductance negligibly small
- For installation in conformity with the lightning protection zones concept at the boundaries from 0_B – 2 and higher

Type	BXT ML4 BC EX 24
Part No.	920 384
SPD class	TYPE 2 P1
SPD monitoring	LifeCheck
Nominal voltage (U _N)	24 V
Max. continuous operating d.c. voltage (U _c)	33 V
Max. continuous operating a.c. voltage (U _e)	23.3 V
Max. input voltage acc. to EN 60079-11 (U _i)	30 V
Max. input current acc. to EN 60079-11 (I _i)	0.5 A
D1 Total lightning impulse current (10/350 μs) (I _{imp})	4 kA
D1 Lightning impulse current (10/350 μs) per line (I _{imp})	1 kA
C2 Total nominal discharge current (8/20 μs) (I _n)	20 kA
C2 Nominal discharge current (8/20 μs) per line (I _n)	5 kA
Voltage protection level line-line for I _{imp} D1 (U _p)	≤ 53 V
Voltage protection level line-PG for I _{imp} D1 (U _p)	≤ 1300 V
Voltage protection level line-line for I _n C2 (U _p)	≤ 55 V
Voltage protection level line-PG for I _n C2 (U _p)	≤ 1400 V
Voltage protection level line-line at 1 kV/μs C3 (U _p)	≤ 45 V
Voltage protection level line-PG at 1 kV/μs C3 (U _p)	≤ 1100 V
Series impedance per line	1 ohm
Cut-off frequency line-line (f _c)	6.4 MHz
Capacitance line-line (C)	≤ 0.8 nF
Capacitance line-PG (C)	≤ 16 pF
Operating temperature range	-40°C...+80°C
Degree of protection (with plugged-in protection module)	IP 20
Plugs into	base part
Earthing via	base part
Enclosure material	polyamide PA 6.6
Colour	blue
Test standards	IEC 61643-21 / EN 61643-21, UL 497B
SIL classification	SIL2 / SIL3 *)
ATEX approvals (1)	KEMA 06ATEX0274 X: II 2 (1) G Ex ia [ia Ga] IIC T4, T5, T6 Gb
ATEX approvals (2)	KEMA 06ATEX0274 X: II 2 G Ex ib IIC T4, T5, T6, Gb
IECEx approvals (1)	DEK 11.0078X: Ex ia [ia Ga] IIC T4, T5, T6 Gb
IECEx approvals (2)	DEK 11.0078X: Ex ib IIC T4, T5, T6 Gb
Approvals	CSA, GOST

*) For more detailed information, please refer to www.dehn.de/en/sil/

Accessories for BLITZDUCTOR® XT Ex (i) LifeCheck® Modules

Test / Disconnection Module

Module for testing lines, plugs into BLITZDUCTOR XT base parts.

Type	BXT M4 T
Part No.	920 309
Colour	grey



Earthing Module

For direct earthing of lines connected to the BLITZDUCTOR XT base part.

Type	BXT M4 E
Part No.	920 308
Colour	grey



Partition

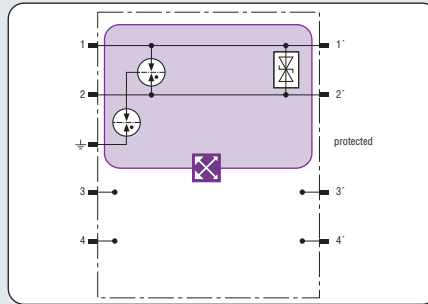
For DRC MCM XT

Type	TW DRC MCM EX
Part No.	910 697
Colour	blue

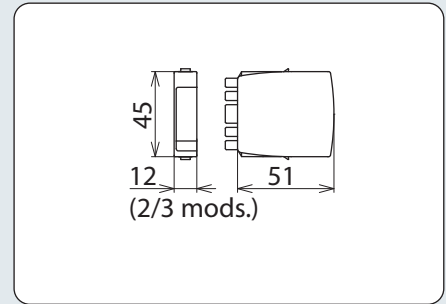


BXT ML2 BD HF EX 6

SPDs for Use in Potentially Explosive Atmospheres



Basic circuit diagram BXT ML2 BD HF EX



Dimension drawing BXT ML2 BD HF EX

- For universal use, with LifeCheck SPD monitoring device
- Self-capacitance and self-inductance negligibly small
- For installation in conformity with the lightning protection zones concept at the boundaries from $0_B - 2$ and higher

Space-saving LifeCheck-equipped surge arrester module for protecting one pair in intrinsically safe measuring circuits and RS485 bus systems. Insulation strength > 500 V line-earth.

If LifeCheck detects thermal and electrical overload, the arrester has to be replaced. This status is indicated contactlessly by DEHNrecord LC / MCM.

Type	BXT ML2 BD HF EX 6
Part No.	920 538
SPD class	TYPE 2 P1
SPD monitoring	LifeCheck
Nominal voltage (U_N)	6 V
Max. continuous operating d.c. voltage (U_C)	6 V
Max. continuous operating a.c. voltage (U_C)	4.2 V
Max. input voltage acc. to EN 60079-11 (U_i)	4.2 V
Max. input current acc. to EN 60079-11 (I_i)	4.8 A
Max. input current acc. to EN 60079-11 (without protection module only up to 60°C) (I_i)	4.8 A
D1 Lightning impulse current (10/350 μ s) per line (I_{imp})	1 kA
C2 Total nominal discharge current (8/20 μ s) (I_n)	10 kA
C2 Nominal discharge current (8/20 μ s) per line (I_n)	5 kA
Voltage protection level line-line for I_{imp} D1 (U_p)	≤ 35 V
Voltage protection level line-PG for I_{imp} D1 (U_p)	≤ 1600 V
Voltage protection level line-line for I_n C2 (U_p)	≤ 35 V
Voltage protection level line-PG for I_n C2 (U_p)	≤ 1800 V
Voltage protection level line-line at 1 kV/ μ s C3 (U_p)	≤ 20 V
Voltage protection level line-PG at 1 kV/ μ s C3 (U_p)	≤ 1400 V
Cut-off frequency line-line (f_G)	100 MHz
Capacitance line-line (C)	≤ 25 nF
Capacitance line-PG (C)	≤ 20 pF
Operating temperature range	-40°C...+80°C
Degree of protection (with plugged-in protection module)	IP 20
Plugs into	base part
Earthing via	base part
Enclosure material	polyamide PA 6.6
Colour	blue
Test standards	IEC 61643-21 / EN 61643-21
SIL classification	SIL2 *)
ATEX approvals (1)	KEMA 06ATEX0274 X: II 2 (1) G Ex ia [ia Ga] IIC T4, T5, T6 Gb
ATEX approvals (2)	KEMA 06ATEX0274 X: II 2 G Ex ib IIC T4, T5, T6, Gb
IECEX approvals (1)	DEK 11.0078X: Ex ia [ia Ga] IIC T4, T5, T6 Gb
IECEX approvals (2)	DEK 11.0078X: Ex ib IIC T4, T5, T6 Gb

*) For more detailed information, please refer to www.dehn.de/en/sil/

Accessories for BLITZDUCTOR® XT Ex (i) LifeCheck® Modules

BXT BAS EX

Base part for use as a feed-through terminal in intrinsically safe circuits for the insertion of protection modules without signal interruption.



Type	BXT BAS EX
Part No.	920 301
Colour	blue

DRC MCM XT

DIN rail mounted device with integrated LifeCheck sensor for condition monitoring of max. 10 LifeCheck-equipped BXT arresters.



Type	DRC MCM XT
Part No.	910 695
Colour	grey

DRC LC M3+

Portable device with LifeCheck sensor for flexible use. Fast and easy testing of LifeCheck-equipped arresters.

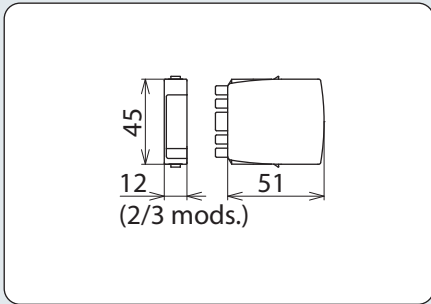


Type	DRC LC M3+
Part No.	910 653
Dimensions of storage case	340 x 275 x 83 mm

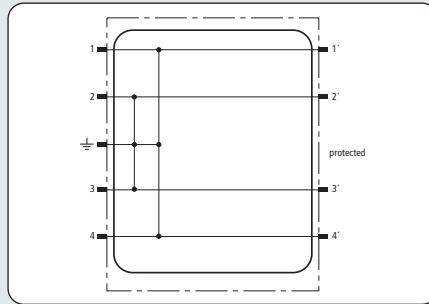
For "Accessories for BLITZDUCTOR XT Ex (i) LifeCheck modules", please also refer to pages 322/327/328/368/370.

SPDs for Use in Potentially Explosive Atmospheres

Earthing Module



Dimension drawing BXT M4 E



Basic circuit diagram BXT M4 E

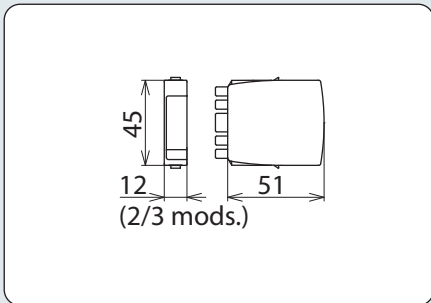


- To be plugged into BLITZDUCTOR XT base parts
- Easy handling
- Quick replacement when retrofitting a protection module

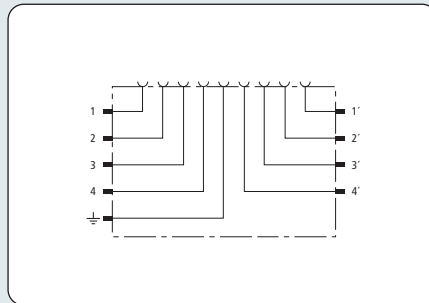
The plugged-in earthing module short-circuits all lines connected to the BLITZDUCTOR XT base part with PG. It directly earths unused wires, which are already connected to the base part.

Type	BXT M4 E
Part No.	920 308
D1 Total lightning impulse current (10/350 μs) (I _{imp})	10 kA
Operating temperature range	-40°C...+80°C
Degree of protection (with plugged-in protection module)	IP 20
Plugs into	base part
Enclosure material	polyamide PA 6.6
Colour	grey

Test / Disconnection Module



Dimension drawing BXT M4 T



Basic circuit diagram BXT M4 T



- To be plugged into BLITZDUCTOR XT base parts
- Easy maintenance and troubleshooting
- Measuring lines included

The plugged-in test/disconnection module interrupts the cable run of the lines connected to the BLITZDUCTOR XT base part and leads them to a test socket at the front of the module. This allows to carry out measurements in the installation without removing the lines from the base part.

Type	BXT M4 T
Part No.	920 309
Max. continuous operating d.c. voltage (U _c)	180 V
Max. continuous operating a.c. voltage (U _c)	127 V
Nominal current at 80° C (I _n)	1.0 A
Volume resistance	0.1 ohms
Operating temperature range	-40°C ... +80°C
Degree of protection (with plugged-in protection module)	IP 20
Plugs into	base part
Test sockets	gold-plated, 1 mm
Enclosure material	polyamide PA 6.6
Colour	grey
Accessories	2 measuring lines (1 m), protective bag

Labelling System 1-50

SPDs for Use in Potentially Explosive Atmospheres

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50



- Abrasion-proof
- Pre-printed

Plate with 2x plate numbers from 1 to 50 for labelling BXT base parts or modules

Type	BS 1 50 BXT
Part No.	920 399
Dimensions (W x H)	11 x 4 mm

Labelling System BA1-BA15

BA1	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	1.10
BA2	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	2.10
BA3	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	3.10
BA4	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	4.10
BA5	5.1	5.2	5.3	5.4	5.5	5.6	5.7	5.8	5.9	5.10
BA6	6.1	6.2	6.3	6.4	6.5	6.6	6.7	6.8	6.9	6.10
BA7	7.1	7.2	7.3	7.4	7.5	7.6	7.7	7.8	7.9	7.10
BA8	8.1	8.2	8.3	8.4	8.5	8.6	8.7	8.8	8.9	8.10
BA9	9.1	9.2	9.3	9.4	9.5	9.6	9.7	9.8	9.9	9.10
BA10	10.1	10.2	10.3	10.4	10.5	10.6	10.7	10.8	10.9	10.10
BA11	11.1	11.2	11.3	11.4	11.5	11.6	11.7	11.8	11.9	11.10
BA12	12.1	12.2	12.3	12.4	12.5	12.6	12.7	12.8	12.9	12.10
BA13	13.1	13.2	13.3	13.4	13.5	13.6	13.7	13.8	13.9	13.10
BA14	14.1	14.2	14.3	14.4	14.5	14.6	14.7	14.8	14.9	14.10
BA15	15.1	15.2	15.3	15.4	15.5	15.6	15.7	15.8	15.9	15.10

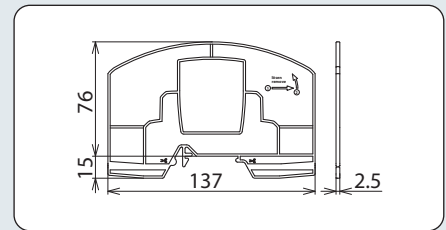


- For DRC MCM XT condition monitoring system
- Abrasion-proof
- Transparent

2x 165 adhesive labels for labelling DRC MCM XT monitoring devices with their bus address (BA1 to BA15) and BXT base parts or modules with consecutive numbers (1.1-1.10 to 15.1-15.10)

Type	BS BA1 BA15 BXT
Part No.	920 398
Dimensions (W x H)	13 x 7 mm

Partition



Dimension drawing of the partition

- Allows devices for non-intrinsically circuits to be placed directly next to Ex i circuits (space gain)
- Increase of the thread measure to ≥ 50 mm in accordance with EN 60079-11
- Suitable for mounting rails with a height of 7.5 mm and 15 mm
- Easy installation by simply snapping the partition onto a DIN rail

Certain installation instructions have to be observed when using BLITZDUCTOR XT Ex (i) surge protective devices in intrinsically safe circuits. In accordance with EN 60079-11;2007 a minimum distance (thread measure) of ≥ 50 mm must be maintained between intrinsically and non-intrinsically safe circuits (connecting parts, e.g. terminals)!

When using the Ex i partition of type TW DRC MCM EX, this distance is also maintained if the surge protective devices are arranged directly next to one other. Ideally suited for use in conjunction with DRC MCM XT for monitoring the condition of BXT modules.

Type	TW DRC MCM EX
Part No.	910 697
Material	polyamide PA 6.6
Colour	blue
For mounting on	35 mm DIN rails according to EN 60715

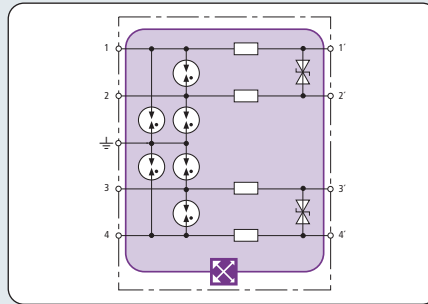
- Prewired unit
- Built-in arrester, tested to ATEX and FISCO requirements
- Other customised versions available on request



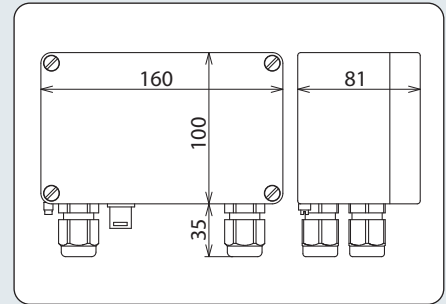
ITAK for use in intrinsically safe circuits

ITAK stands for the German designation "Informationstechnik-Anschaltkasten" [English: switchbox for information technology systems]. Typically, ITAKs are a combination of enclosure, arresters and terminals or shield terminals. These switchboxes can be tailored to customer

needs. Our standard product range includes e.g. ITAK EXI BXT 24, a combination of ALGA 5 X enclosure and BXT BD EX 24 arrester for protecting two intrinsically safe measuring circuits in outdoor areas. The enclosure is also available without arrester.



Basic circuit diagram ITAK EXI BXT



Dimension drawing ITAK EXI BXT

- Prewired unit for two Ex(i) circuits
- Self-capacitance and self-inductance negligibly small
- For installation in conformity with the lightning protection zones concept at the boundaries from $0_B - 2$ and higher

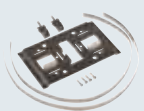
Prewired BXT ML4 BD EX 24 and BXT BAS EX surge arrester unit completely mounted in a junction box for intrinsically safe measuring circuits, meets FISCO requirements.

Type	ITAK EXI BXT 24
Part No.	989 408
SPD class	TYPE 2 P1
SPD monitoring system	LifeCheck
Nominal voltage (U_N)	24 V
Max. continuous operating d.c. voltage (U_C)	33 V
Max. input voltage acc. to EN 60079-11 (U_i)	30 V
Max. input current acc. EN 60079-11 (I_i)	0.5 A
Total nominal discharge current (8/20 μ s) (I_n)	20 kA
Nominal discharge current (8/20 μ s) per line (I_n)	5 kA
Voltage protection level line-line for I_n C2 (U_p)	≤ 52 V
Voltage protection level line-PG for I_n C2 (U_p)	≤ 1400 V
Voltage protection level line-line at 1 kV/ μ s C3 (U_p)	≤ 45 V
Voltage protection level line-PG at 1 kV/ μ s C3 (U_p)	≤ 1100 V
Series impedance per line	1.0 ohm
Cut-off frequency line-line (f_G)	7.7 MHz
Capacitance line-line (C)	0.8 nF
Operating temperature range	-40°C...+80°C
Degree of protection	IP 65
For mounting on	walls in Ex zones 1, 2
Connection (input/output)	cable gland (M20 x 1.5)
Cross-sectional area, solid	0.08 - 4 mm ²
Cross-sectional area, flexible	0.08 - 2.5 mm ²
Cross-sectional area (equipotential bonding)	4 mm ²
Tightening torque (terminals)	0.4 Nm
Earthing via	screw terminal on enclosure panel
Enclosure material	grey aluminium
Test standards for installed BXT	IEC 61643-21 / EN 61643-21
Approvals for installed BXT	ATEX, CSA

Accessory for ITAK Ex (i)

Mounting Set

For fixing ALGA 5 X enclosures at masts and pipes

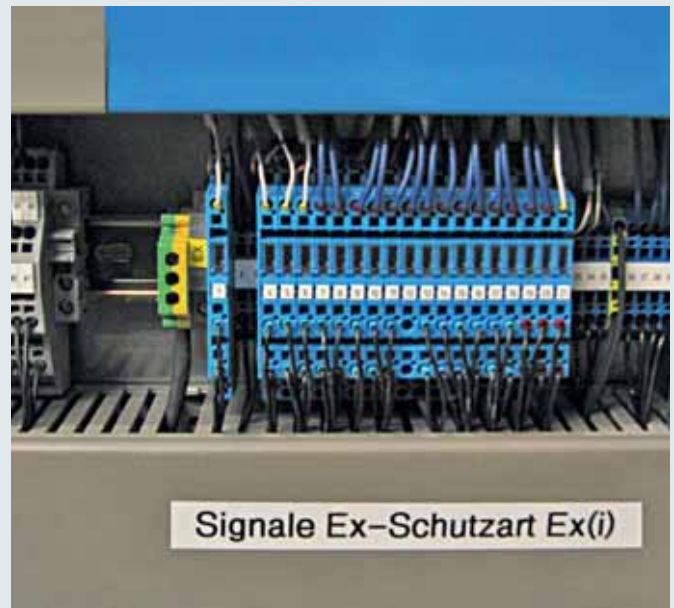


Type	MS ALGA 5 X
Part No.	906 059
Enclosure material	StSt

SPDs for Use in Potentially Explosive Atmospheres

- Extremely space-saving (only 6 mm in width)
- Spring-loaded connection system
- ATEX and FISCO approval

Terminal block with integrated surge protection



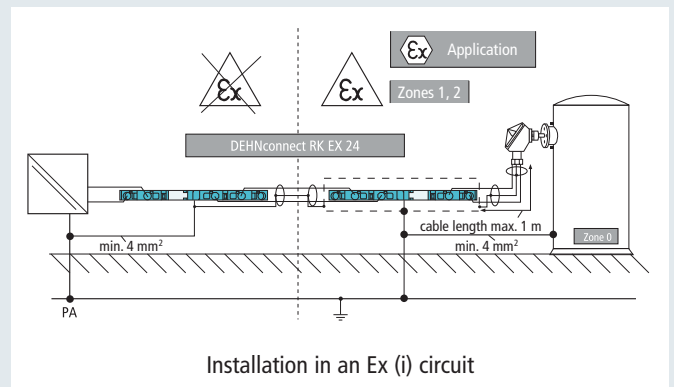
Signale Ex-Schutzart Ex(i)

Two-pole terminal block of 6 mm width with integrated surge protection and cage clamp terminal. Earthing via DIN rail or terminal.

DEHNconnect RK MD EX is a terminal block of 6 mm width with integrated surge protection for intrinsically safe circuits. The five cage clamp terminals protect two lines each and additional equipotential bonding with terminal equipment can be established. The snap-in fixing mechanism at the supporting foot of the base part allows the arrester to be safely earthed via the DIN rail. As the enclosure of the arrester is open to one side to minimise the width, it is advisable to use an end plate at the end of each terminal block.



DCO RK MD EX with end plate



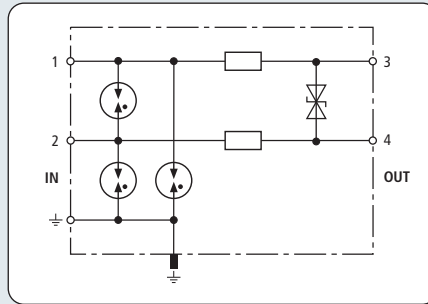
Installation in an Ex (i) circuit



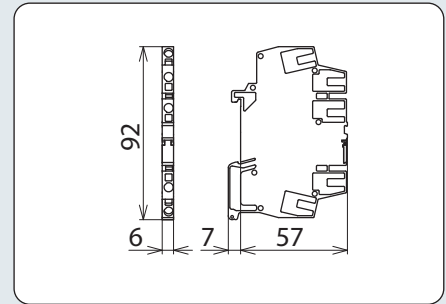
ATEX approval for DCO RK MD EX *)



*) The certificates can be downloaded at www.dehn.de



Basic circuit diagram DCO RK MD EX



Dimension drawing DCO RK MD EX

- For universal use
- Self-capacitance and self-inductance negligibly small
- For installation in conformity with the lightning protection zones concept at the boundaries from $0_B - 2$ and higher

Surge arrester with energy-coordinated low-capacitance protective circuit for protecting intrinsically safe measuring circuits and bus systems, meets FISCO requirements. Insulation strength > 500 V to earth.

Type	DCO RK MD EX 24
Part No.	919 960
SPD class	TYPE 2 P1
Nominal voltage (U_n)	24 V
Max. continuous operating d.c. voltage (U_c)	33 V
Max. continuous operating a.c. voltage (U_e)	23 V
Max. input voltage acc. to EN 60079-11 (U_i)	30 V
Max. input current acc. to EN 60079-11 (I_i)	0.5 A
Nominal current (I_n)	0.5 A
C2 Total nominal discharge current (8/20 μ s) (I_n)	10 kA
C2 Nominal discharge current (8/20 μ s) per line (I_n)	5 kA
Voltage protection level line-line for I_n C2 (U_p)	≤ 50 V
Voltage protection level line-PG for I_n C2 (U_p)	≤ 1500 V
Voltage protection level line-line at 1 kV/ μ s C3 (U_p)	≤ 45 V
Voltage protection level line-PG at 1 kV/ μ s C3 (U_p)	≤ 1400 V
Series impedance per line	1.8 ohms
Cut-off frequency line-line (f_c)	6 MHz
Capacitance line-line (C)	≤ 1 nF
Capacitance line-PG (C)	≤ 6 pF
Operating temperature range	-40°C...+80°C
Degree of protection	IP 00, with cover IP 20
For mounting on	35 mm DIN rails acc. to EN 60715
Connection (input/output)	spring / spring
Cross-sectional area, solid	0.08 - 2.5 mm ²
Cross-sectional area, flexible	0.08 - 2.5 mm ²
Earthing via	DIN rail / terminal
Enclosure material	polyamide PA 6.6
Colour	blue
Test standards	IEC 61643-21 / EN 61643-21
SIL classification	SIL2 / SIL3 *)
ATEX approvals	KEMA 09ATEX0124 X: II 2 (1) G Ex ia IIC T4 ... T6
Approvals	GOST

*) For more detailed information, please refer to www.dehn.de/en/sil/

Accessory for DEHNconnect RK Ex (i)

Jumper Bar

Multipole jumper bar for DCO RK



Type	KB 10 DCO RK
Part No.	919 880
Poles	10

Quick Labelling System, vertical Imprint

Plate with 2x plate numbers from 1 to 50 for DCO RK, vertical imprint



Type	BS 1 50 S DCO RK
Part No.	919 976
Material	plastic

Accessory for DEHNconnect RK Ex (i)

End Plate



Type	AD DCO RK BL
Part No.	919 978
Enclosure material	polyamide PA 6.6
Colour	blue

Quick Labelling System, horizontal Imprint

Plate with 2x plate numbers from 1 to 50 for DCO RK, horizontal imprint



Type	BS 1 50 DCO RK
Part No.	919 977
Material	plastic

Accessory for Terminal Block Systems

- Lightning-impulse-current-tested up to 10 kA (10/350 μ s)
- Corrosion-resistant stainless steel
- Spring element ensures permanent shield connection



Lightning current carrying shield connection system for anchor bars. A slipping spring element compensates the yield of the cable materials used.

The lightning-impulse-current-tested shield connection system is specifically used on anchor bars. As, in the course of time, the conductor materials are subject to a yield, this yield is compensated by a slipping spring

element. The shield connection can also be isolated from local potential by means of an adequate insulating element.

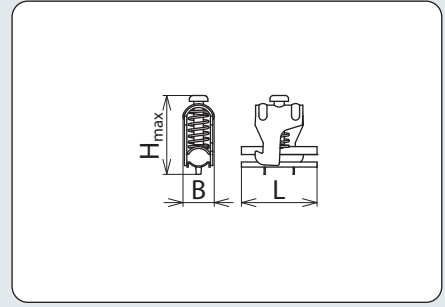
This very robust shield connection system is particularly suited for cables with medium-sized diameters. It has been tested with lightning currents and is approved for nuclear plants.



Shield connection system on anchor bar

Shield Terminals

Accessory for Terminal Block Systems



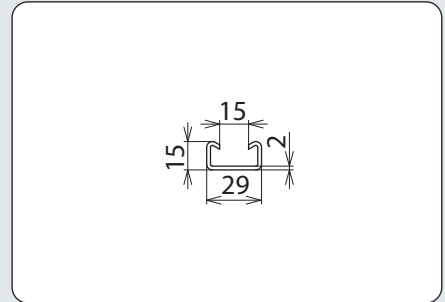
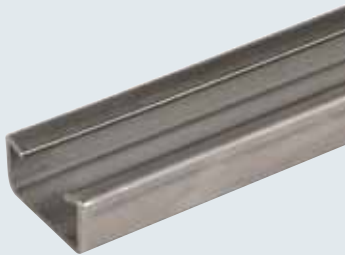
Dimension drawing SAK

- System for anchor bars which is capable of carrying lightning currents
- Large-area shield contact
- Compensates the yield of cable materials

Shield terminals for earthing cable shields on anchor bars. Suitable for lightning equipotential bonding. Can be subsequently installed without interrupting the cable shield or requiring tools for installation. Approved for use in nuclear plants with TÜV test certificate ETL 10/PB 301/97 (TÜV = German Technical Inspectorate).

Type	SAK 10 AS V4A	SAK 14 AS V4A	SAK 18 AS V4A	SAK 21 AS V4A	SAK 26 AS V4A	SAK 33 AS V4A
Part No.	308 403	308 404	308 405	308 406	308 407	308 408
Lightning impulse current capacity (10/350 µs)	10 kA	10 kA	10 kA	10 kA	10 kA	10 kA
Clamping range (Rd)	5 - 10 mm	8 - 14 mm	13 - 18 mm	17 - 21 mm	19 - 26 mm	25 - 33 mm
Material	StSt	StSt	StSt	StSt	StSt	StSt
Spring pressure	21 - 27 N	30 - 76 N	34 - 73 N	30 - 63 N	90 - 124 N	76 - 137 N
For mounting on	anchor bars	anchor bars	anchor bars	anchor bars	anchor bars	anchor bars
Dimensions (W x L x H)	16 x 40 x 48 mm	19.5 x 40 x 50 mm	24 x 40 x 56 mm	29 x 40 x 59 mm	36.5 x 40 x 74 mm	45 x 40 x 82 mm
Approvals	ETL 10/PB 301/97	ETL 10/PB 301/97	ETL 10/PB 301/97	ETL 10/PB 301/97	ETL 10/PB 301/97	ETL 10/PB 301/97

Anchor Bar

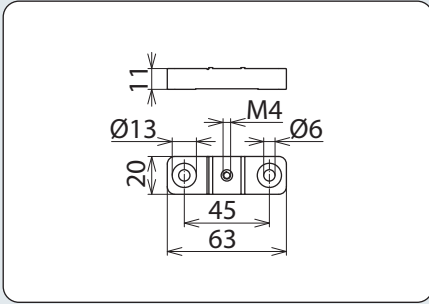


Dimension drawing AS SAK 1000 V2A

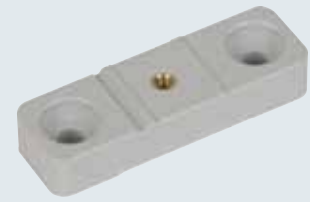
- Can be cut to length according to requirements

Mounting rail for earthing and fixing shield terminals.

Type	AS SAK 1000 V2A
Part No.	308 421
Material	StSt
Dimensions (W x L x H)	29 x 1000 x 15 mm
Approvals	ETL 10/PB 301/97



Dimension drawing ST AS SAK K

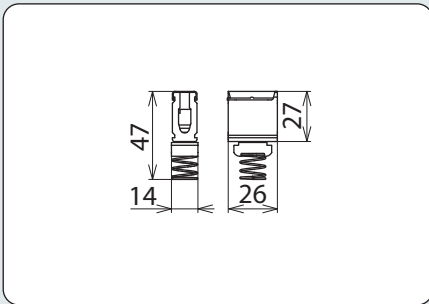


Busbar support for insulated fixing of AS SAK 1000 V2A anchor bars, with M4 threaded bushing.

- Non-conductive connection between the mounting plate and the anchor bar
- Equipotential bonding via AK 16 AS SAK MS terminal

Type	ST AS SAK K
Part No.	308 425
Material	plastic
Approvals	ETL 10/PB 301/97

Terminal



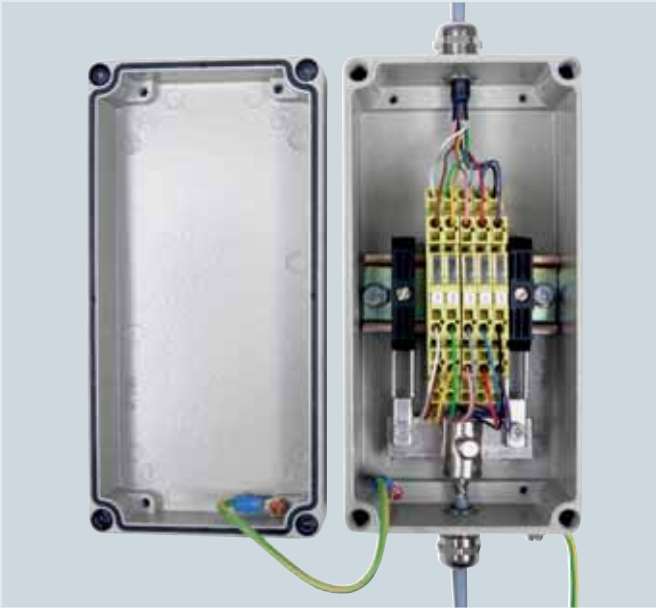
Dimension drawing AK 16 AS SAK MS



For connecting equipotential bonding conductors to AS SAK 1000 V2A anchor bars.

- Space-saving
- Two fixing screws for conductors included

Type	AK 16 AS SAK MS
Part No.	308 411
Cross-sectional area, solid	16 mm ²
For mounting on	anchor bars
Approvals	ETL 10/PB 301/97



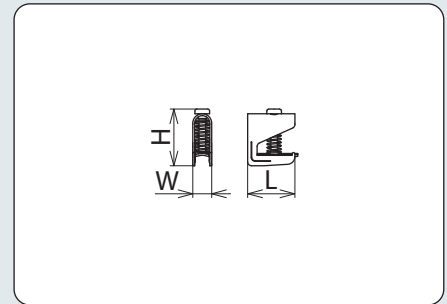
- Lightning-impulse-current-tested up to 5 kA (10/350 μ s)
- Corrosion-resistant stainless steel
- Spring element ensures permanent shield connection

Lightning current carrying DIN rail mounted shield connection system, ideally suited for small cables. Slipping spring element compensates the yield of the cable materials.

The lightning-impulse-current-tested DIN rail mounted shield connection system for a wide range of applications is ideally suited for small cable diameters such as bus cables. As, in the course of time, the conductor

materials are subject to a yield, this is compensated by a slipping spring element. The shield connection can also be isolated from local potential by means of an adequate insulating element.

Shield Terminals

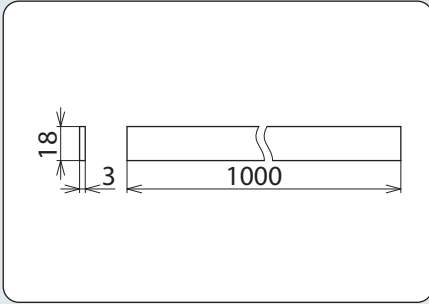


Dimension drawing SAK

- Lightning current carrying system for busbars
- Large-area shield contact
- Compensates the yield of cable materials

Shield terminals for earthing cable shields on busbars (18x3). Suitable for lightning equipotential bonding. Can be subsequently installed without interrupting the cable shield or requiring tools for installation.

Type	SAK 6.5 SN MS	SAK 11 SN MS
Part No.	919 010	919 011
Lightning impulse current capacity (10/350 μ s)	5 kA	5 kA
Clamping range (Rd)	1.5 - 6.5 mm	5 - 11 mm
Material	nickel-plated brass	nickel-plated brass
Spring pressure	8 - 13 N	22 - 31 N
For mounting on	SN 18x3 CU 1000	SN 18x3 CU 1000
Dimensions (W x L x H)	10 x 25 x 40 mm	17 x 25 x 47 mm



Dimension drawing SN 18X3 CU 1000

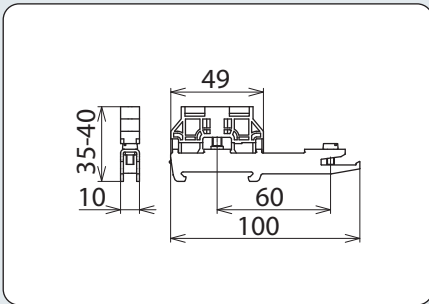


Mounting rail for shield terminals. Can be mounted onto busbar supports.

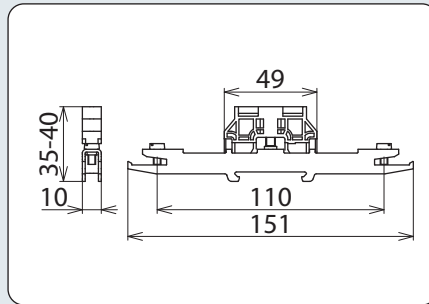
- Can be cut to length according to requirements
- Can be mounted onto busbar supports

Type	SN 18X3 CU 1000
Part No.	919 016
Material	tin-plated copper
For mounting on	busbar supports
Dimensions (W x L x H)	18 x 1000 x 3 mm

Rail Support



Dimension drawing SH1 18X3 ST



Dimension drawing SH2 18X3 ST



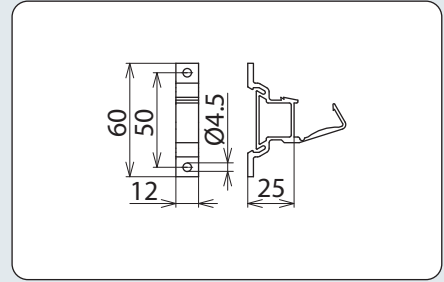
Rail support suitable for DIN rail mounting. Low-impedance connection of the shield terminals to the DIN rail via the busbar.

- Extremely space-saving
- With one or two-sided contact
- For 35 mm DIN rails acc. to EN 60715

Type	SH1 18X3 ST	SH2 18X3 ST
Part No.	919 012	919 013
Version	one-sided contact	two-sided contact
Material	tin-plated steel	tin-plated steel
For mounting on	35 mm DIN rails acc. to EN 60715	35 mm DIN rails acc. to EN 60715

Insulated Rail Support

Accessory for Terminal Block Systems



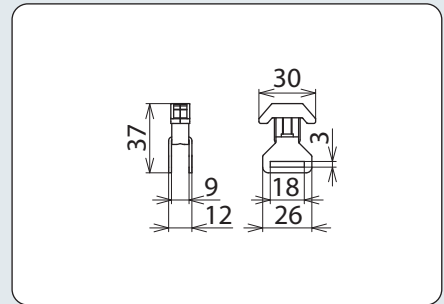
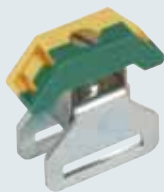
Dimension drawing SH 18X3 K

- Non-conductive connection between busbar and DIN rail
- Equipotential bonding via AK 35 SN 18X3 GG terminal

Rail support for DIN rail mounting or screw connection.

Type	SH 18X3 K
Part No.	919 014
Material	plastic
Colour	black
For mounting on	DIN rails or mounting plates

Terminal



Dimension drawing AK 35 SN 18X3 GG

- Wide cross-sectional area
- For insulated shield construction with SH 18X3 K

Particularly suited for indirect shield earthing.

Type	AK 35 SN 18X3 GG
Part No.	919 015
Cross-sectional area, solid	35 mm ²
For mounting on	busbars

Accessory for Terminal Block Systems

- Lightning-impulse-current-tested up to 10 kA (10/350 µs)
- Extremely space-saving
- Spring element ensures permanent shield connection



Extremely space-saving shield connection system for use as constant force spring. A spring element compensates the yield of the cable materials.

The shields of the incoming information and power supply lines can be contacted by means of SA KRF constant force springs in a space-saving and lightning current carrying way. As, in the course of time, the conductor

materials are subject to a yield, this yield is compensated by a spring element. To permanently protect the clamping point from corrosion, constant force springs are wrapped with a self-bonding SKB rubber tape.



Test certificate for constant force spring of type SA KRF ...

Constant Force Spring

Accessory for Terminal Block Systems



- For solderless connection of a conductor to the shield
- For use with all plastic and lead-sheathed cables
- Also suitable for steel-reinforced lead-sheathed cables

Constant force springs allow solderless shield connections for equipotential bonding or lightning equipotential bonding. They can be installed subsequently without interrupting the line shield or requiring tools for installation. Approved for nuclear plants according to TÜV Certificate No. T12-04-ETL003 (TÜV = German Technical Inspectorate).

Type SA KRF ...	10 V2A	15 V2A	22 V2A	29 V2A	37 V2A	50 V2A	70 V2A	94 V2A
Part No.	919 031	919 032	919 033	919 034	919 035	919 036	919 037	919 038
Lightning impulse current capacity (10/350 µs)	10 kA	10 kA	10 kA	10 kA	10 kA	10 kA	10 kA	10 kA
Clamping range (Rd)	4 - 10 mm	9 - 15 mm	14 - 22 mm	18.5 - 29 mm	23.5 - 37 mm	31 - 50 mm	44 - 70 mm	58 - 94 mm
Material	StSt	StSt	StSt	StSt	StSt	StSt	StSt	StSt
Colour	bare surface	bare surface	bare surface	bare surface	bare surface	bare surface	bare surface	bare surface
For mounting on	cable shields	cable shields	cable shields	cable shields	cable shields	cable shields	cable shields	cable shields
Approvals	T12-04-ETL 003	T12-04-ETL003	T12-04-ETL003	T12-04-ETL003	T12-04-ETL003	T12-04-ETL003	T12-04-ETL003	T12-04-ETL003

Self-bonding Rubber Tape

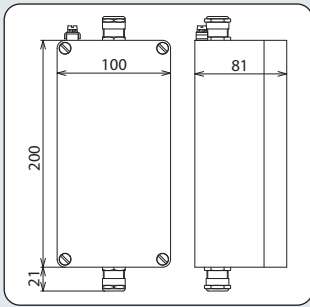


- Self-bonding
- Flexible

Roll with 9 m self-bonding rubber tape for wrapping around constant force springs for permanent corrosion protection.

Type	SKB 19 9M SW
Part No.	919 030
Colour	black
Tape dimensions (W x L)	19 mm x 9 m

Aluminium Enclosure



Dimension drawing of an aluminium enclosure

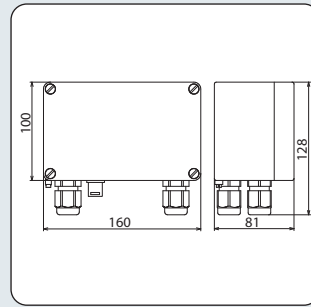


- DIN rail integrated
- Different types available on request

For the installation of DIN rail mounted devices. With two brass glands PG 11.

Type	ALGA 5
Part No.	906 055
Degree of protection	IP 65
For mounting on	walls
Dimensions (W x H x D)	100 x 200 x 81 mm
Capacity	6 modules
Enclosure material	aluminium

Aluminium Enclosure for Ex(i) Surge Arresters



Dimension drawing of an aluminium enclosure for Ex(i) surge arresters

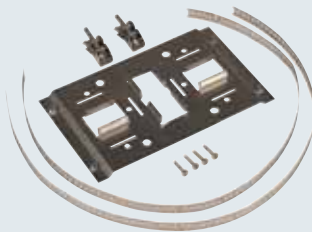


- DIN rail integrated
- All cables entering from below

With four plastic glands M20 x 1.5, sealable, pressure compensating membranes.

Type	ALGA 5 X
Part No.	906 058
Degree of protection	IP 65
For mounting on	walls
Dimensions (W x H x D)	160 x 100 x 85 mm
Capacity	6 modules
Enclosure material	aluminium

Mounting Set

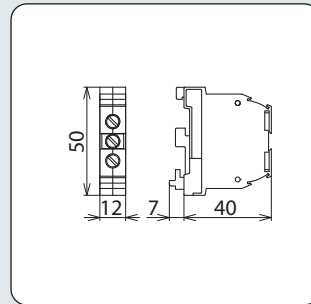


- Stainless steel
- For harsh environmental conditions

For fixing ALGA 5 X enclosures at masts and pipes.

Type	MS ALGA 5 X
Part No.	906 059
For mounting on	masts, pipes with a diameter of 25 to 140 mm
Enclosure material	StSt

Protective Conductor Terminal



Dimension drawing of a protective conductor terminal



- Capable of carrying lightning current

For earthing DIN rails

Type	SLK 16
Part No.	910 099
Cross-sectional area, flexible	6 - 16 mm ²
Cross-sectional area, solid	6 - 25 mm ²
For mounting on	DIN rails acc. to EN 60715
Enclosure material	polyamide 6.6
Colour	green/yellow



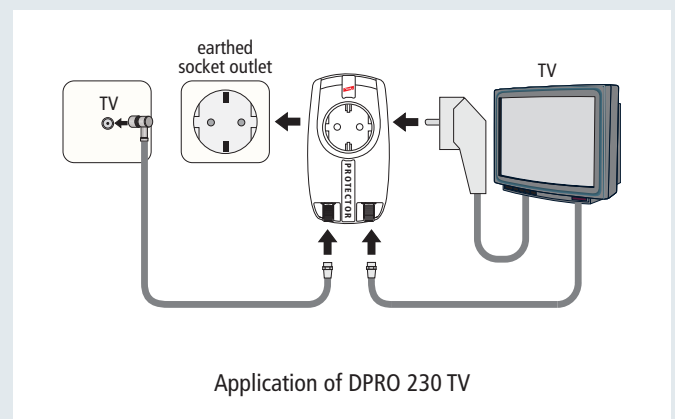
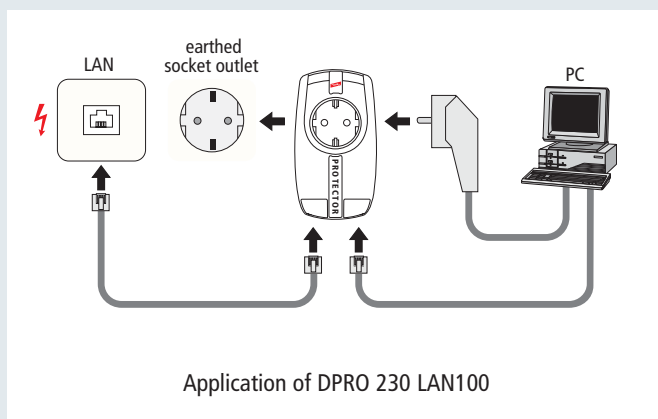
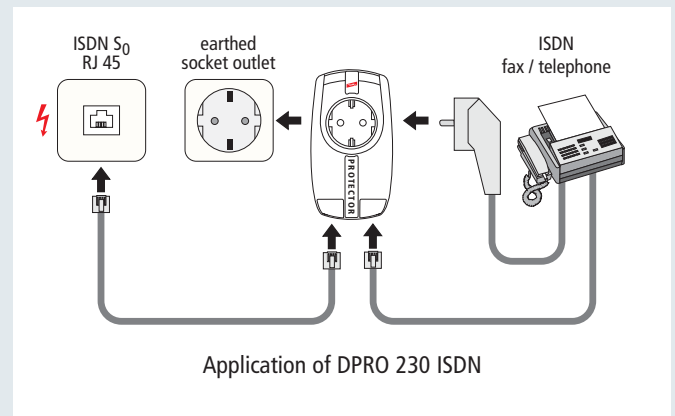
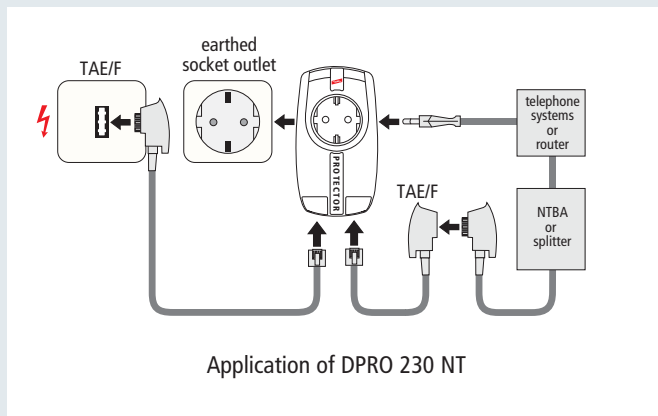
- Surge protective adapter with a modern design for quick retrofitting
- Easy integration of the power and data side of a terminal device into equipotential bonding



Combined surge protective adapter plugged into an earthed socket outlet, with visual operating state and fault indication.

The arresters of the DEHNprotector family are plugged into earthed socket outlets and protect consumers with an additional data interface. Overvoltages are discharged to the PE contact of the socket outlet. The

plug-in installation facilitates retrofitting. The surge protective devices on the power side feature a visual operating state and fault indication, thus ensuring easy maintenance.

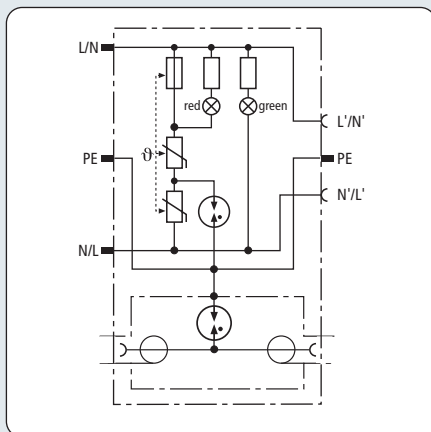


Note:
For further surge protective adapters for protecting the mains supply of electronic devices please also refer to pages 140 – 142.

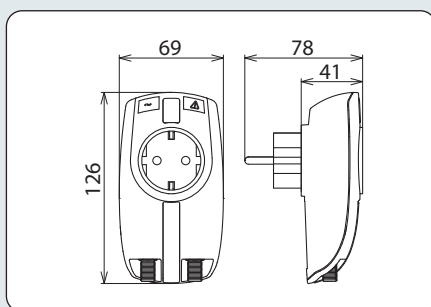


- Surge protective device for TV, radio or SAT applications with a modern design
- F socket to IEC plug adapter included
- For installation in conformity with the lightning protection zones concept at the boundaries from 2 – 3 and higher

Combined surge protection for the power and antenna side of TV, radio or SAT receivers. With visual operating state and fault indication.



Basic circuit diagram DPRO TV180



Dimension drawing DPRO TV

Type	DPRO 230 TV	DPRO 230 SE TV
Part No.	909 300	909 305
Protection for the data side:		
SPD class	TYPE 2	
Max. continuous operating d.c. voltage (U_c)	60 V	
C2 Nominal discharge current (8/20 μ s) line-shield (PE) (I_n)	5 kA	
Voltage protection level line-shield (PE) at 1 kV/ μ s C3 (U_p)	\leq 600 V	
Insertion loss 0-2400 MHz	\leq 1.5 dB	
Operating temperature range	-25°C...+40°C	
Degree of protection	IP 20	
Connection (input / output)	F socket / F socket	
Earthing via	protective conductor connection	
Enclosure material	thermoplastic, UL 94 V-2	
Colour	pure white	
Test standards	IEC 61643-21 / EN 61643-21	
Protection for the power side:		
SPD according to EN 61643-11	Type 3	
SPD according to IEC 61643-1	Class III	
Nominal a.c. voltage (U_N)	230 V	
Max. continuous operating a.c. voltage (U_c)	255 V	
Nominal load current a.c. (I_l)	16 A	
Nominal discharge current (8/20 μ s) (I_n)	3 kA	
Total discharge current (8/20 μ s) [L+N-PE] (I_{total})	5 kA	
Combined impulse (U_{oc})	6 kV	
Combined impulse [L+N-PE] ($U_{oc total}$)	10 kV	
Voltage protection level [L-N] (U_p)	\leq 1.25 kV	
Voltage protection level [L/N-PE] (U_p)	\leq 1.5 kV	
Response time [L-N] (t_A)	\leq 25 ns	
Response time [L/N-PE] (t_A)	\leq 100 ns	
Max. mains-side overcurrent protection	16 A gL/gG or B 16 A	
Short-circuit withstand capability for mains-side overcurrent protection	6 kA _{rms}	
Temporary overvoltage (TOV) [L-N] (U_T)	335 V / 5 sec.	
Temporary overvoltage (TOV) [L/N-PE] (U_T)	400 V / 5 sec.	
Temporary overvoltage (TOV) [L+N-PE] (U_T)	1200 V + U_{CS} / 200 ms	
TOV characteristic [L-N]	withstand	
TOV characteristic [L/N-PE]	withstand	
TOV characteristic [L+N-PE]	safe	
Fault indication	red indicator light	
Operating state indication	green indicator light	
Number of ports	1	
For mounting on	plug-in systems with earth contact DIN 49440/DIN 49441	centre earthing contact system according to CEE 7, standard sheet V
Test standards	EN 61643-11	

Combined Adapters

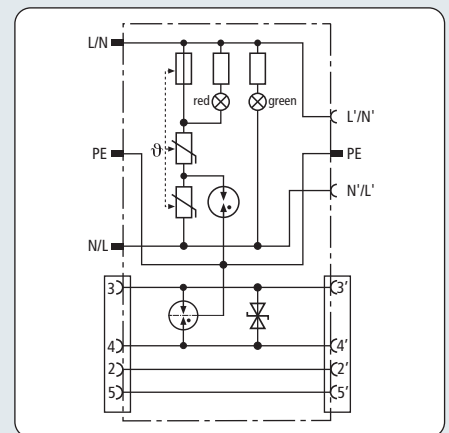
DPRO 230 NT

Type	DPRO 230 NT	DPRO 230 SE NT
Part No.	909 310	909 315
Protection for the data side:		
SPD class	TYPE 2 P2	
Max. continuous operating d.c. voltage (U_c)	180 V	
C2 Nominal discharge current (8/20 μ s) per line C2 (I_n)	2.5 kA	
Voltage protection level line-line for I_n C2 (U_p)	≤ 300 V	
Voltage protection level line-PE for I_n C2 (U_p)	≤ 500 V	
Voltage protection level line-line at 1 kV/ μ s C3 (U_p)	≤ 300 V	
Voltage protection level line-PE at 1 kV/ μ s C3 (U_p)	≤ 500 V	
Cut-off frequency (f_c)	50 MHz	
Operating temperature range	-25°C...+40°C	
Degree of protection	IP 20	
Connection (input / output)	RJ12 socket / RJ12 socket	
Pinning	3/4	
Earthing via	protective conductor connection	
Enclosure material	thermoplastic, UL 94 V-2	
Colour	pure white	
Test standards	IEC 61643-21 / EN 61643-21	
Protection for the power side:		
SPD according to EN 61643-11	Type 3	
SPD according to IEC 61643-1	Class III	
Nominal a.c. voltage (U_n)	230 V	
Max. continuous operating a.c. voltage (U_c)	255 V	
Nominal load current a.c. (I_l)	16 A	
Nominal discharge current (8/20 μ s) (I_n)	3 kA	
Total discharge current (8/20 μ s) [L+N-PE] (I_{total})	5 kA	
Combined impulse (U_{oc})	6 kV	
Combined impulse [L+N-PE] ($U_{oc total}$)	10 kV	
Voltage protection level [L-N] (U_p)	≤ 1.25 kV	
Voltage protection level [L/N-PE] (U_p)	≤ 1.5 kV	
Response time [L-N] (t_A)	≤ 25 ns	
Response time [L/N-PE] (t_A)	≤ 100 ns	
Max. mains-side overcurrent protection	16 A gL/gG or B 16 A	
Short-circuit withstand capability for mains-side overcurrent protection	6 kA _{rms}	
Temporary overvoltage (TOV) [L-N] (U_T)	335 V / 5 sec.	
Temporary overvoltage (TOV) [L/N-PE] (U_T)	400 V / 5 sec.	
Temporary overvoltage (TOV) [L+N-PE] (U_T)	1200 V + U_{CS} / 200 ms	
TOV characteristic [L-N]	withstand	
TOV characteristic [L/N-PE]	withstand	
TOV characteristic [L+N-PE]	safe	
Fault indication	red indicator light	
Operating state indication	green indicator light	
Number of ports	1	
For mounting on	plug-in systems with earth contact DIN 49440/DIN 49441	centre earthing contact system according to CEE 7, standard sheet V
Test standards	EN 61643-11	

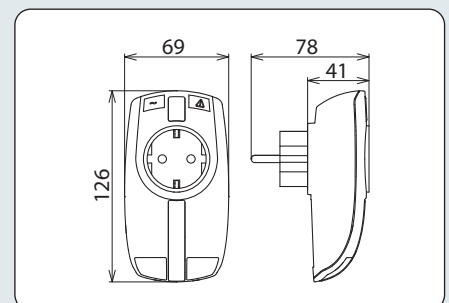


- Surge protective device for terminal equipment of telecommunications systems with a modern design
- Includes accessories for RJ 11/12 and TAE connections
- For installation in conformity with the lightning protection zones concept at the boundaries from 2 – 3 and higher

Combined surge protection for the power and data side of a digital network termination (NT). Also suited for telephones and fax machines. With visual operating state and fault indication.



Basic circuit diagram DPRO NT

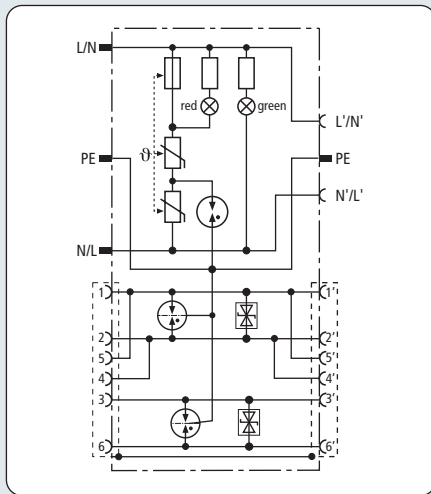


Dimension drawing DPRO NT

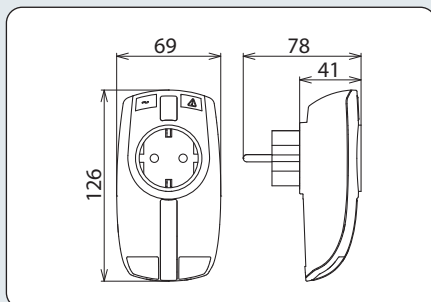


- Surge protective device for ISDN or Ethernet components (10 BASE-T) with a modern design
- Shielded patch cable (1.5 m) included
- For installation in conformity with the lightning protection zones concept at the boundaries from 2 – 3 and higher

Combined surge protection for the power and ISDN S₀ side of ISDN systems and devices. Shielded port allows to protect of Ethernet 10 BT. With visual operating state and fault indication.



Basic circuit diagram DPRO ISDN



Dimension drawing DPRO ISDN

Type	DPRO 230 ISDN	DPRO 230 SE ISDN
Part No.	909 320	909 325
Protection for the data side:		
SPD class	TYPE 2 Pt1	
Max. continuous operating d.c. voltage (U _c)	48 V	
C2 Nominal discharge current (8/20 μs) line-line (I _n)	120 A	
C2 Nominal discharge current (8/20 μs) line-PE (I _n)	2.5 kA	
C2 Total nominal discharge current (8/20 μs) (I _n)	10 kA	
Voltage protection level line-line for I _n C2 (U _p)	≤ 100 V	
Voltage protection level line-PE for I _n C2 (U _p)	≤ 500 V	
Voltage protection level line-line at 1 kV/μs C3 (U _p)	≤ 80 V	
Voltage protection level line-PE at 1 kV/μs C3 (U _p)	≤ 500 V	
Cut-off frequency (f _c)	50 MHz	
Operating temperature range	-25°C...+40°C	
Degree of protection	IP 20	
Connection (input / output)	shielded RJ45 socket / shielded RJ45 socket	
Pinning	1(5)/2(4), 3/6	
Earthing via	protective conductor connection	
Enclosure material	thermoplastic, UL 94 V-2	
Colour	pure white	
Test standards	IEC 61643-21 / EN 61643-21	
Protection for the power side:		
SPD according to EN 61643-11	Type 3	
SPD according to IEC 61643-1	Class III	
Nominal a.c. voltage (U _N)	230 V	
Max. continuous operating a.c. voltage (U _c)	255 V	
Nominal load current a.c. (I _l)	16 A	
Nominal discharge current (8/20 μs) (I _n)	3 kA	
Total discharge current (8/20 μs) [L+N-PE] (I _{total})	5 kA	
Combined impulse (U _{oc})	6 kV	
Combined impulse [L+N-PE] (U _{oc total})	10 kV	
Voltage protection level [L-N] (U _p)	≤ 1.25 kV	
Voltage protection level [L/N-PE] (U _p)	≤ 1.5 kV	
Response time [L-N] (l)	≤ 25 ns	
Response time [L/N-PE] (t _Δ)	≤ 100 ns	
Max. mains-side overcurrent protection	16 A gL/gG or B 16 A	
Short-circuit withstand capability for mains-side overcurrent protection	6 kA _{rms}	
Temporary overvoltage (TOV) [L-N] (U _T)	355 V / 5 sec.	
Temporary overvoltage (TOV) [L/N-PE] (U _T)	400 V / 5 sec.	
Temporary overvoltage (TOV) [L+N-PE] (U _T)	1200 V + U _{CS} / 200 ms	
TOV characteristic [L-N]	withstand	
TOV characteristic [L/N-PE]	withstand	
TOV characteristic [L+N-PE]	safe	
Fault indication	red indicator light	
Operating state indication	green indicator light	
Number of ports	1	
For mounting on	plug-in systems with earth contact DIN 49440/DIN 49441	centre earthing contact system according to CEE 7, standard sheet V
Test standards	EN 61643-11	

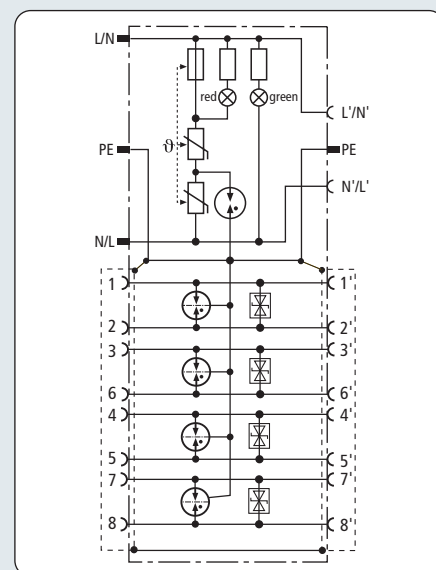
Type	DPRO 230 LAN100	DPRO 230 SE LAN100
Part No.	909 321	909 326
Protection for the data side:		
SPD class	TYPE 2P1	
Max. continuous operating d.c. voltage (U_c)	58 V	
C2 Nominal discharge current (8/20 μ s) line-line (I_n)	30 A	
C2 Nominal discharge current (8/20 μ s) line-PE (I_n)	2.5 kA	
C2 Total nominal discharge current (8/20 μ s) (I_n)	10 kA	
Voltage protection level line-line for I_n C2 (U_p)	≤ 100 V	
Voltage protection level line-PE for I_n C2 (U_p)	≤ 500 V	
Voltage protection level line-line at 1 kV/ μ s C3 (U_p)	90 V	
Voltage protection level line-PE at 1 kV/ μ s C3 (U_p)	≤ 500 V	
Cut-off frequency (f_G)	120 MHz	
Operating temperature range	-20°C...+40°C	
Degree of protection	IP 20	
Connection (input / output)	shielded RJ45 socket / shielded RJ45 socket	
Pinning	1/2, 3/6, 4/5, 7/8	
Earthing via	protective conductor connection	
Enclosure material	thermoplastic, UL 94 V-2	
Colour	pure white	
Test standards	IEC 61643-21 / EN 61643-21	
Protection for the power side:		
SPD according to EN 61643-11	Type 3	
SPD according to IEC 61643-1	Class III	
Nominal a.c. voltage (U_N)	230 V	
Max. continuous operating a.c. voltage (U_c)	255 V	
Nominal load current a.c. (I_L)	16 A	
Nominal discharge current (8/20 μ s) (I_n)	3 kA	
Total discharge current (8/20 μ s) [L+N-PE] (I_{total})	5 kA	
Combined impulse (U_{oc})	6 kV	
Combined impulse [L+N-PE] ($U_{oc total}$)	10 kV	
Voltage protection level [L-N] (U_p)	≤ 1.25 kV	
Voltage protection level [L/N-PE] (U_p)	≤ 1.5 kV	
Response time [L-N] (t_l)	≤ 25 ns	
Response time [L/N-PE] (t_a)	≤ 100 ns	
Max. mains-side overcurrent protection	16 A gL/gG or B 16 A	
Short-circuit withstand capability for mains-side overcurrent protection	6 kA _{rms}	
Temporary overvoltage (TOV) [L-N] (U_T)	335 V / 5 sec.	
Temporary overvoltage (TOV) [L/N-PE] (U_T)	400 V / 5 sec.	
Temporary overvoltage (TOV) [L+N-PE] (U_T)	1200 V + U_{CS} / 200 ms	
TOV characteristic [L-N]	withstand	
TOV characteristic [L/N-PE]	withstand	
TOV characteristic [L+N-PE]	safe	
Fault indication	red indicator light	
Operating state indication	green indicator light	
Number of ports	1	
For mounting on	plug-in systems with earth contact DIN 49440/DIN 49441	centre earthing contact system according to CEE 7, standard sheet V
Test standards	EN 61643-11	



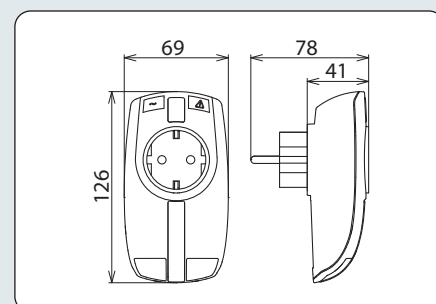
- Surge protective device for Ethernet components (1000 BASE-T) with a modern design
- Shielded Cat 5e patch cable (1.5 m) included
- For installation in conformity with the lightning protection zones concept at the boundaries from 2 – 3 and higher

Combined surge protection for the power side and data input for protecting LAN components. Protective circuit for all pairs for Ethernet pin assignment.

Meets the requirements for Channel Class D in accordance with EN 50173.



Basic circuit diagram DPRO LAN100



Dimension drawing DPRO LAN100



Isolating Spark Gaps

For lightning equipotential bonding

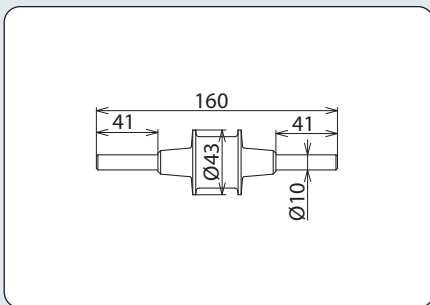
- For indirect connection/earthing of functionally isolated installation parts under lightning conditions
- For lightning equipotential bonding according to IEC 62305
- With corrosion-resistant stainless steel connections
- For building, outdoor, damp room and underground installation
- Extremely heavy-duty devices



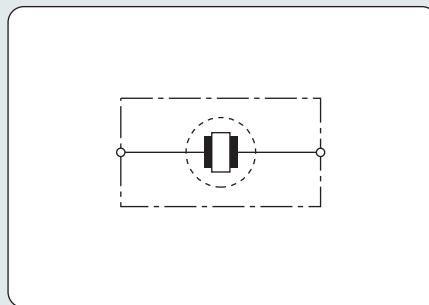
TFS: High-capacity isolating spark gap
KFSU: Isolating spark gap

For lightning equipotential bonding according to IEC 62305 as well as for use in IT installations according to IEC 60364-5-54.

TFS / KFSU



Dimension drawing TFS / KFSU



Basic circuit diagram TFS / KFSU



Isolating spark gaps with plastic coating and two stainless steel connections (Rd 10 mm)

- For indirect connection/earthing of functionally isolated installation parts under lightning conditions
- For lightning equipotential bonding according to IEC 62305
- For installation in buildings, outdoors, in damp rooms as well as for underground installation

Type	TFS	KFSU
Part No.	923 023	923 021
Lightning impulse current (10/350 μ s) (I_{imp})	100 kA	—
Class of lightning current carrying capability acc. to EN 50164-3	H	—
Nominal discharge current (8/20 μ s) (I_n)	100 kA	100 kA
Rated power-frequency withstand voltage (50 Hz) (U_{wAC})	300 V	300 V
Lightning impulse sparkover voltage ($U_{r imp}$)	≤ 4 kV	≤ 4 kV
Power frequency sparkover voltage (50 Hz) (U_{aw})	≤ 2.5 kV	≤ 2.5 kV
Operating temperature range (T_U)	-20°C...+80°C	-20°C...+80°C
Degree of protection protection	IP 65	IP 65
Length	160 mm	160 mm
Diameter of the enclosure	43 mm	43 mm
Enclosure material	steel/plastic coating	steel/plastic coating
Connection	Rd 10 mm	Rd 10 mm
Material (connection)	stainless steel	stainless steel



ATEX and IECEx-certified isolating spark gap for lightning equipotential bonding according to IEC 62305 with flexible conductor connection

- For indirect connection/earthing of functionally isolated parts of installations under lightning conditions
- For lightning equipotential bonding according to IEC 62305 in hazardous areas (zone 2)
- Corrosion-resistant zinc die-cast enclosure with plastic cover and flexible conductor connection
- For bridging insulating pieces, insulating flanges etc. in cathodically protected pipe sections
- Extremely heavy-duty device
- Approval according to ATEX directive 94/9/EC and IECEx

EXFS L ...: Isolating spark gap for use in hazardous areas with flexible connecting cable

EXFS KU: Isolating spark gap for use in hazardous areas with two 1.5 m long connecting cables for underground installation

Ex isolating spark gaps of the EXFS L / EXFS KU product family are used when electrically conductive parts of installations cannot be directly interconnected in hazardous areas, for example, in case of cathodically protected pipeline sections.

ATEX and IECEx-certified EXFS L and EXFS KU spark gaps provide approved and tested safety in accordance with harmonised European standards.

The arc-resistant tungsten-copper electrodes ensure a long service life of the Ex spark gaps.

The approved EXFS L type with flexible conductor connection quickly adapts to any application environment. The prewired spark gaps feature connecting cables of different lengths with cable lug, screw and M10 nut. The flat or angled connection brackets (IF), which are available as accessory, allow to easily connect the spark gap to pipeline flanges. The EXFS KU type is enclosed in a moisture-proof PVC enclosure and is ideally suited for underground installation on insulating couplings.



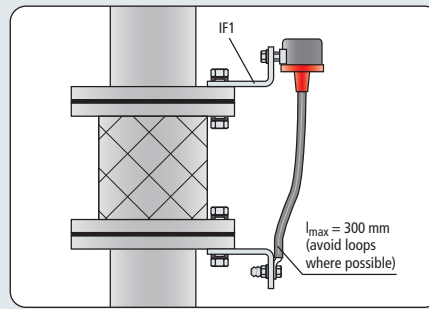
ATEX approval for EXFS (download at www.dehn.de)

IEC		IECEx		IECEx Certificate of Conformity	
INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres <small>for rules and details of the IECEx Scheme visit www.iecex.com</small>					
Certificate No.:	IECEA DEK 11.0063X	Issue No. 0	Certificate Issued		
Status:	Current				
Date of Issue:	2011-10-12	Page 1 of 3			
Applicant:	DEHN + BÖHNE GmbH + Co. KG Hans-Dahn-Strasse 1 D-82318 Neumarkt / Opl., Germany				
Electrical Apparatus:	Isolating Spark Gap series EXFS				
Optional accessory:					
Type of Protection:	Ex nC				
Marking:	Ex nC IIC T4 Gc				
Approved for issue on behalf of the IECEx Certification Body:	C.G. van Es				
Position:	Certification Manager				
Signature: (or printed version):					
Date:	2011-10-12				
<p>1. This certificate and schedule may only be reproduced in full. 2. This certificate is not transferable and remains the property of the issuing body. 3. The Status and authenticity of this certificate may be verified by visiting the Official IECEx Website.</p>					
Certificate issued by:					
DEKRA Certification B.V. Spoorlaanweg 318 8812 AR Amstelveen The Netherlands <small>All testing, inspection, auditing and certification activities of the former KEMA Quality are an integral part of the DEKRA Certification Group.</small>					
					

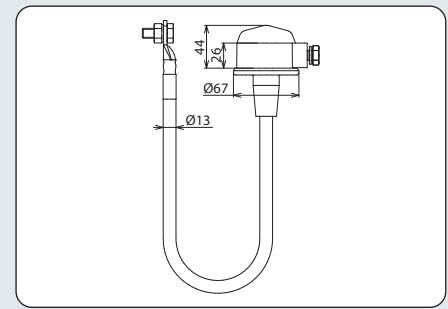
IEC		IECEx		IECEx Certificate of Conformity	
Certificate No.:	IECEA DEK 11.0063X	Issue No. 0	Page 2 of 3		
Date of Issue:	2011-10-12				
Manufacturer:	DEHN + BÖHNE GmbH + Co. KG Hans-Dahn-Strasse 1 D-82318 Neumarkt / Opl., Germany				
Manufacturing location(s):					
<p>This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard set below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.</p>					
STANDARDS:					
<p>The electrical apparatus and any associated variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:</p>					
IEC 60079-0 : 2007-10 Explosive atmospheres - Part 0: Equipment - General requirements, Edition 3					
IEC 60079-15 : 2010 Explosive atmospheres - Part 15: Equipment protection by type of protection "n", Edition 4					
<p>This Certificate does not indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.</p>					
TEST & ASSESSMENT REPORTS:					
<p>A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:</p>					
<p>Test Report: NLDEKEXTR11.0063/01</p>					
<p>Quality Assessment Report: NLDEKEXGAB08.0006/02</p>					

IEC		IECEx		IECEx Certificate of Conformity	
Certificate No.:	IECEA DEK 11.0063X	Issue No. 0	Page 3 of 3		
Date of Issue:	2011-10-12				
Schedule					
EQUIPMENT:					
<p>Equipment and systems covered by this certificate are as follows:</p> <p>The Isolating Spark Gap Types EXFS L 500 (923 060), EXFS L 200 (923 061), EXFS L 300 (923 062), EXFS L ... (special lengths) and EXFS KU (923 013) are used for indirect connection / earthing of functionally isolated conductive system parts in potentially explosive gas atmospheres.</p>					
Electrical data					
<p>Rated Power frequency withstand voltage (50 Hz): U = 300 V; Impulse sparkover voltage (1,2/50 µs): U₅₀ = 42,5 kV; Lightning impulse current (10/350 µs): I = 50 kA.</p>					
CONDITIONS OF CERTIFICATION: YES as shown below:					
Ambient temperature range -20 °C to +60 °C.					

IECEx approval for EXFS (download at www.dehn.de)



Installation of EXFS L



Dimension drawing EXFS L

- For indirect connection/earthing of functionally isolated parts of installations under lightning conditions
- For lightning equipotential bonding according to IEC 62305 in hazardous areas (zone 2)
- Approval according to ATEX directive 94/9/EC and IECEx

Ex isolating spark gap for aboveground installation

Type	EXFS L100	EXFS L200	EXFS L300
Part No.	923 060	923 061	923 062
Lightning impulse current (10/350 μ s) (I_{imp})	50 kA	50 kA	50 kA
Class of lightning current carrying capability acc. to EN 50164-3	N	N	N
Nominal discharge current (8/20 μ s) current (8/20) (I_n)	100 kA	100 kA	100 kA
Rated power-frequency withstand voltage (50 Hz) (U_{wAC})	300 V	300 V	300 V
Lightning impulse sparkover voltage ($U_{r imp}$)	≤ 2.5 kV	≤ 2.5 kV	≤ 2.5 kV
Power frequency sparkover voltage (50 Hz) (U_{aw})	≤ 1.2 kV	≤ 1.2 kV	≤ 1.2 kV
Operating temperature range (T_U)	-20°C...+80°C	-20°C...+80°C	-20°C...+80°C
Degree of protection	IP 54	IP 54	IP 54
ATEX approvals	DEKRA 11ATEX0146 X	DEKRA 11ATEX0146 X	DEKRA 11ATEX0146 X
Ex marking according to EN 60079-0 and EN 60079-15: gas	II 3 G Ex nC IIC T4 Gc	II 3 G Ex nC IIC T4 Gc	II 3 G Ex nC IIC T4 Gc
IECEx approvals	IECEx DEK 11.0063X	IECEx DEK 11.0063X	IECEx DEK 11.0063X
Ex marking according to EN 60079-0 and EN 60079-15: gas	Ex nC IIC T4 Gc	Ex nC IIC T4 Gc	Ex nC IIC T4 Gc
Enclosure length	90 mm	90 mm	90 mm
Enclosure diameter	63 mm	63 mm	63 mm
Enclosure material	zinc die-cast, plastic	zinc die-cast, plastic	zinc die-cast, plastic
Connecting cable	H01N2-D 25 mm ² with cable lug and screw/nut (M10)	H01N2-D 25 mm ² with cable lug and screw/nut (M10)	H01N2-D 25 mm ² with cable lug and screw/nut (M10)
Cable length	100 mm	200 mm	300 mm
Suitable for flange size	20-130 mm	120-230 mm	220-320 mm

Accessory for EXFS L / EXFS KU

Pair of angled Connection Brackets - IF 1 -

Pair of angled connection brackets for EXFS ...; diameter corresponds to the bolt diameter of the bolted flange joint (d1 up to max. 62 mm, please indicate the diameter required when placing your order)



Type	IF1
Part No.	923 011
Type	angled
Material	St/tZn
Max. bore diameter d1	62 mm

Accessory for EXFS L / EXFS KU

Pair of flat Connection Brackets - IF 3 -

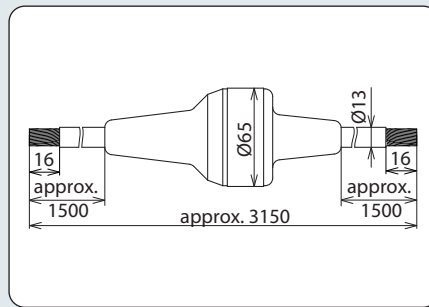
Pair of flat connection brackets for EXFS ...; diameter corresponds to the bolt diameter of the bolted flange joint (d1 up to max. 42 mm, please indicate the diameter required when placing your order)



Type	IF3
Part No.	923 016
Type	flat
Material	St/tZn
Max. bore diameter d1	42 mm

Isolating Spark Gaps

EXFS KU



Dimension drawing EXFS KU



Ex isolating spark gap with connecting cables for aboveground and underground installation; with water-proof sheath; may be shortened for short cable lengths

- For indirect connection/earthing of functionally isolated parts of installations under lightning conditions
- For lightning equipotential bonding according to IEC 62305 in hazardous areas (zone 2)
- Approval according to ATEX directive 94/9/EC and IECEx

Type	EXFS KU
Part No.	923 019
Lightning impulse current (10/350 μ s) (I_{imp})	50 kA
Class of lightning current carrying capability acc. to EN 50164-3	N
Nominal discharge current (8/20 μ s) current (8/20) (I_n)	100 kA
Rated power-frequency withstand voltage (50 Hz) (U_{wAC})	300 V
Lightning impulse sparkover voltage ($U_{r imp}$)	≤ 2.5 kV
Power frequency sparkover voltage (50 Hz) (U_{aw})	≤ 1.2 kV
Operating temperature range (T_U)	-20°C...+80°C
Degree of protection	IP 67
ATEX approvals	DEKRA 11ATEX0146 X
Ex marking according to EN 60079-0 and EN 60079-15: gas	II 3 G Ex nC IIC T4 Gc
IECEx approvals	IECEx DEK 11.0063X
Ex marking according to EN 60079-0 and EN 60079-15: gas	Ex nC IIC T4 Gc
Enclosure length	90 mm
Enclosure diameter	63 mm
Enclosure material	zinc die-cast, plastic
Connecting cable	NYJ-J-1x25 mm ²
Cable length	2x approx. 1.5 m



ATEX and IECEx-certified isolating spark gap with low sparkover voltage for lightning equipotential bonding according to IEC 62305

- For indirect connection/earthing of functionally isolated parts of installations under lightning conditions
- Device for lightning equipotential bonding according to IEC 62305 in hazardous areas
- For bridging insulating pieces, insulating flanges etc. in cathodically protected pipe sections
- For safe installation in Ex zone 1 (gas) or 21 (dust)
- Especially low sparkover voltage
- Especially high a.c. current withstand capability
- Approval according to "ATEX Directive" 94/9/EC and IECEx

EXFS 100: Isolating spark gap for use in hazardous areas with plastic sheath and M10 threaded bushings

EXFS 100 KU: Isolating spark gap for use in hazardous areas with two 2 m long connecting cables for underground installation

The Ex isolating spark gaps of the EXFS 100 / EXFS 100 KU product family are used when conductive installation components situated in hazardous areas cannot be connected directly with each other.

The spark gaps with low sparkover voltage are especially efficient for isolated parts of installations with low insulation resistance.

No special requirements have to be observed for safe application in zone 1 (gases) or zone 21 (dusts).

With a maximum lightning impulse current of 100 kA (10/350 µs), EXFS 100 and EXFS 100 KU meet class H according to EN 50164-3 "Lightning Protection Components (LPC) – Part 3: Requirements for isolating spark gaps".

The ATEX and IECEx-certified EXFS 100 and EXFS 100 KU spark gaps provide approved safety according to harmonised European standards.

For connecting EXFS 100 spark gaps, prewired connecting cables of different lengths are available as accessory.

Flat and angled connection brackets (IF) allow to easily connect the spark gaps to pipe flanges.



EXFS 100 KU types are enclosed by a moisture-proof plastic sheath and are therefore ideally suited for underground installation on insulating couplings.



ATEX approvals for EXFS 100 (download at www.dehn.de)

IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification Scheme for Explosive Atmospheres

Certificate No.: IECEx KEM 09.0051X Issue No.: 2
Status: Current
Date of Issue: 2011-11-08 Page 1 of 4

Applicant: **DEHN + SÖHNE GmbH + Co. KG**
Hans-Dahn-Strasse 1
D-82318 Neumarkt,
Germany

Electrical Apparatus: Isolating Spark Gap type EXFS 100 and type EXFS 100 KU
Optional accessory:

Type of Protection: Ex d, Ex dI

Marking: Ex d IEC TS 09
Ex Ib IEC TS°C Db IP 66/87

Approved for issue on behalf of the IECEx Certification Body: M. Entzian
Position: Certification Manager

Signature (for printed version): 
Date: 2011-11-08

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the Official IECEx Website.

Certificate issued by: **DEKRA Certification B.V.**
Ulrichsweg 310
4712 BR Arnhem
The Netherlands

All testing, inspection, auditing and certification activities of the former KEMA Quality are an integral part of the DEKRA Certification Group.



IECEx Certificate of Conformity

Certificate No.: IECEx KEM 09.0051X Issue No.: 2
Date of Issue: 2011-11-08 Page 2 of 4

Manufacturer: **DEHN + SÖHNE GmbH + Co. KG**
Hans-Dahn-Strasse 1
D-82318 Neumarkt,
Germany

Manufacturing location(s):

This certificate is issued on verification that a sample(s) representative of production, was assessed and tested and found to comply with the IEC Standard set below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

STANDARDS:
The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

IEC 60079-0 : 2007-18 Explosive atmospheres - Part 0: Equipment - General requirements
Edition: 5
IEC 60079-1 : 2007-04 Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
Edition: 6
IEC 60079-31 : 2008 Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "T"
Edition: 1

This Certificate does not indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards cited above.

TEST & ASSESSMENT REPORTS:
A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:

Test Report: NLKEMEXTR09.005102 NLKEMEXTR09.005101 NLKEMEXTR09.005102

Quality Assessment Report: NLKEMEXTR09.005102 NLKEMEXTR09.005102

IECEx Certificate of Conformity

Certificate No.: IECEx KEM 09.0051X Issue No.: 2
Date of Issue: 2011-11-08 Page 3 of 4

Schedule

EQUIPMENT:
Equipment and systems covered by this certificate are as follows:
Isolating Spark Gap type EXFS 100 and type EXFS 100 KU provides galvanic isolation between parts of electrical installations. In case of an increasing potential difference e.g. caused by a lightning strike, the isolation will be abolished by system of the spark gap and the building of a low-resistance connection.

Ambient temperature range for type EXFS 100: -30 °C...+80 °C
for type EXFS 100 KU: -40 °C...+80 °C

Electrical data:
Rated power frequency withstand voltage (50 Hz) U = 250 Vac
Inputs spark over voltage (1.2/50 µs) U ≤ 1250 V
Lightning inputs current (10/350 µs) I = 100 kA

Note:
The electrical data is not in the scope of IECEx certification.

CONDITIONS OF CERTIFICATION: YES as shown below:
For type EXFS 100: -30 °C to +80 °C and for type EXFS 100 KU: -40 °C to +80 °C.

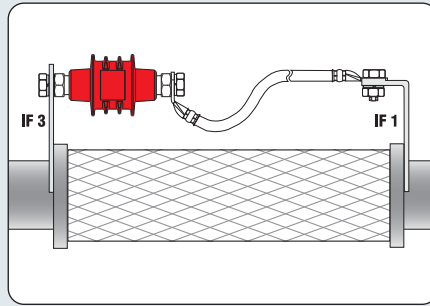
IECEx Certificate of Conformity

Certificate No.: IECEx KEM 09.0051X Issue No.: 2
Date of Issue: 2011-11-08 Page 4 of 4

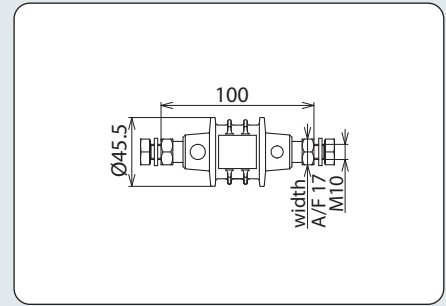
DETAILS OF CERTIFICATE CHANGES (for Issues 1 and Above):

Issue 2:
Extended temperature range of EXFS 100 KU and
Updated standard issue(s)

IECEx approvals for EXFS 100 (download at www.dehn.de)



Installation of EXFS 100



Dimension drawing EXFS 100

- For indirect connection/earthing of functionally isolated parts of installations under lightning conditions
- Device for lightning equipotential bonding according to IEC 62305 in hazardous areas
- Approval according to "ATEX Directive" 94/9/EC and IECEx

Isolating spark gap for use in hazardous areas with plastic sheath and M10 threaded screws

Type	EXFS 100
Part No.	923 100
Lightning impulse current (10/350 μ s) (I_{imp})	100 kA
Class of lightning current carrying capability acc. to EN 50164-3	H
Nominal discharge current (8/20 μ s) (I_n)	100 kA
Rated power-frequency withstand voltage (50 Hz) (U_{wAC})	250 V
Lightning impulse sparkover voltage ($U_{r imp}$)	≤ 1.25 kV
Power-frequency sparkover voltage (50 Hz) (U_{aw})	≤ 0.5 kV
Rated discharge current (50 Hz) (I_{max})	500 A / 0.5 sec. ($T_U \leq 45^\circ\text{C}$)
Operating temperature range (T_U)	$-20^\circ\text{C} \dots +60^\circ\text{C}$
Degree of protection	IP 67
ATEX approvals	DEKRA 11ATEX0178 X
Ex marking according to EN 60079-0 and EN 60079-1: gas	II 2 G Ex d IIC T6 Gb
Ex marking according to EN 60079-0 and EN 60079-31: dust	II 2 D Ex tb IIIC T80 °C Db IP 66/67
IECEx approvals	IECEx KEM 09.0051X
Ex marking according to EN 60079-0 and EN 60079-1: gas	Ex d IIC T6 Gb
Ex marking according to EN 60079-0 and EN 60079-31: dust	Ex tb IIIC T80°C Db IP 66/67
Enclosure length	100 mm
Enclosure diameter	45.5 mm
Enclosure material	plastic sheath
Connection of enclosure	M10 threaded bushing, 2x M10x25 mm, 2x spring washer

Accessory for EXFS L / EXFS KU

Pair of angled Connection Brackets - IF 1 -

Pair of angled connection brackets for EXFS ...; diameter corresponds to the bolt diameter of the bolted flange joint (d1 up to max. 62 mm, please indicate the diameter required when placing your order)



Type	IF1
Part No.	923 011
Type	angled
Material	St/tZn
Max. bore diameter d1	62 mm

Pair of flat Connection Brackets - IF 3 -

Pair of flat connection brackets for EXFS ...; diameter corresponds to the bolt diameter of the bolted flange joint (d1 up to max. 42 mm, please indicate the diameter required when placing your order)



Type	IF3
Part No.	923 016
Type	flat
Material	St/tZn
Max. bore diameter d1	42 mm

Accessory for EXFS 100 / EXFS 100 KU

EXFS 100: Connecting Cable, Cu 25 mm²

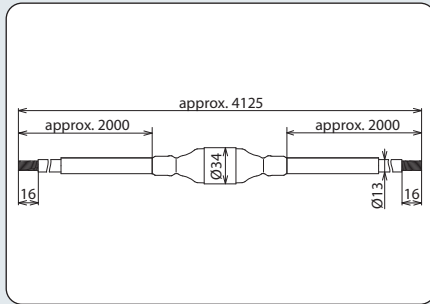
Connecting cable for EXFS 100; two cable lugs (Ø10.5 mm), screw, nut, and spring washer



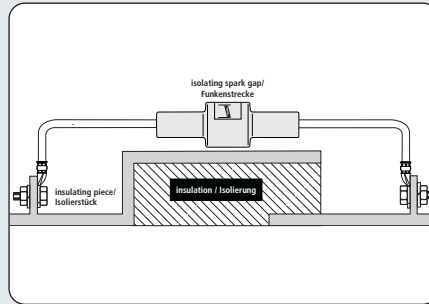
Type AL EXFS ...	L100 KS	L200 KS	L300 KS
Part No.	923 025	923 035	923 045
Cable lug material	Cu/gal Sn	Cu/gal Sn	Cu/gal Sn
Cross-section	25 mm ²	25 mm ²	25 mm ²
Cable length	100 mm	200 mm	300 mm

Isolating Spark Gaps

EXFS 100 KU



Dimension drawing EXFS 100 KU



Installation of EXFS 100 KU



Ex isolating spark gap with connecting cable for aboveground and underground installation; with water-proof sheath; may be shortened for short cable lengths

- For indirect connection/earthing of functionally isolated parts of installations under lightning conditions
- Device for lightning equipotential bonding according to IEC 62305 in hazardous areas
- Approval according to "ATEX Directive" 94/9/EC and IECEx

Type	EXFS 100 KU
Part No.	923 101
Lightning impulse current (10/350 μ s) (I_{imp})	100 kA
Class of lightning current carrying capability acc. to EN 50164-3	H
Nominal discharge current (8/20 μ s) (I_n)	100 kA
Rated power-frequency withstand voltage (50 Hz) (U_{wAC})	250 V
Lightning impulse sparkover voltage ($U_{r imp}$)	≤ 1.25 kV
Power-frequency sparkover voltage (50 Hz) (U_{aw})	≤ 0.5 kV
Rated discharge current (50 Hz) (I_{max})	500 A / 0.5 sec. ($T_U \leq 45^\circ\text{C}$)
Operating temperature range (T_U)	$-40^\circ\text{C} \dots +60^\circ\text{C}$
Temperature range during installation	$-5^\circ\text{C} \dots +50^\circ\text{C}$
Degree of protection	IP 67
ATEX approvals	DEKRA 11ATEX0178 X
Ex marking according to EN 60079-0 and EN 60079-1: gas	II 2 G Ex d IIC T6 Gb
Ex marking according to EN 60079-0 and EN 60079-31: dust	II 2 D Ex tb IIIC T80 °C Db IP 66/67
IECEX approvals	IECEX KEM 09.0051X
Ex marking according to EN 60079-0 and EN 60079-1: gas	Ex d IIC T6 Gb
Ex marking according to EN 60079-0 and EN 60079-31: dust	Ex tb IIIC T80°C Db IP 66/67
Enclosure length	123 mm
Enclosure diameter	34 mm
Enclosure material	water-proof plastic sheath
Connecting cable	NYJ-J-1x25 mm ²
Cable length	2x approx. 2 m



Pipe clamp for electrical contacting of pipes in explosion-hazard areas for implementing of lightning equipotential bonding according to EN 62305-3 (DIN VDE 0185-305-3)

So far equipotential bonding and lightning equipotential bonding of pipes in explosion-hazard areas has been implemented by means of welded or threaded bushing connections. Using clamps was only permitted if evidence of no ignition sparking in case of lightning current loading was provided. Such proof has now been rendered for a pipe clamp by DEHN + SÖHNE. In compliance with and tested according to EN 50164-1 (VDE 0185-201) title English: Lightning Protection Components (LPC) - Part 1: Requirements for connection components in a potentially explosive atmosphere (clamps and connectors), the sample passed the test for no occurrence of ignition sparks at a lightning current loading of up to 50 kA (10/350 µs). This new pipe clamp for explosion-risk areas not only ensures the safe electrical contact by means of two contact clips, but also

- Usable in potentially explosive atmospheres Ex zones 1 and 2 (gases, vapours, mists) as well as Ex zones 21 and 22 (dusts)
- Tested according to explosion group IIB
- Time-saving installation – no need to deactivate systems/areas for welding or drilling works

- EX BRS 27: Clamping range from Ø6 mm to 26.9 mm (¾")
- EX BRS 90: Clamping range from Ø26.9 mm (¾") to 88.9 mm (3")
- EX BRS 300: Clamping range from Ø88.9 mm (3") to 300 mm
- EX BRS 500: Clamping range from Ø300 to 500 mm

Separate clamping body: Clamping range from Ø26.9 mm (¾") to 500 mm

the adequate mechanical fixing by an electrically insulated clamping body.

The Ex pipe clamp provides following connection possibilities

- round conductors made of Cu, St/tZn, Al, StSt with Ø8/10 mm or stranded copper conductors, cross-section 16-35 mm², with E-Cu crimping cable lug (DIN 46235)
- flat copper conductors with minimum dimensions of 20x2.5 mm and a bore of Ø10.5 mm

More details in installation instructions No. 1599.



Applied at a StSt pipe



DEHN + SÖHNE

DECLARATION OF MANUFACTURER

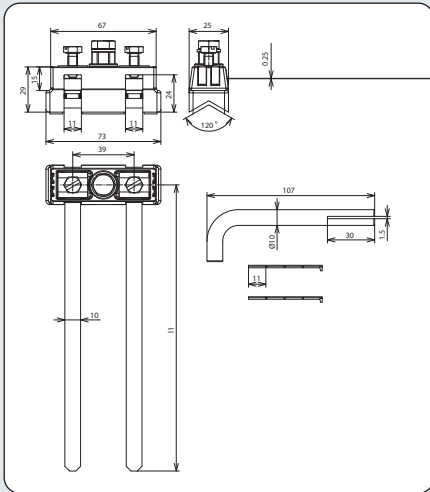
Product: Pipe clamp for explosive zones
Product description: Part No. 540 821
 Part No. 540 801
 Part No. 540 803
 Part No. 540 805
 Part No. 540 810
Manufacturer: DEHN + SÖHNE GmbH + Co.KG.
 Hans-Dehn-Str. 1
 92318 Neumarkt i.d.OPf., Germany

Application:
 The pipe clamp for explosive zones is used for connecting pipes of different materials and diameters to the lightning equipotential bonding structure in explosive atmospheres.
 Lightning currents are discharged without formation of sparks as specified in the technical data sheet.
 We herewith confirm that the pipe clamp for explosive zones is suitable for the use in explosive zones 1 and 2 (gas, vapour, mist) and explosive zones 21 and 22 (combustible dust) in connection with the installation instructions, Publication No. 1599, "Pipe Clamp for explosive zones" and is tested according to explosion group IIB.

Pipe clamps for explosive zones have no own potential source of ignition (mechanical device) and are thus not subject to the European directive 94/9/EG.
 Therefore certification according to the European directive 94/9/EG is **not legally admissible** and **not necessary** with respect to explosion protection.

Neumarkt i.d.OPf., 12 Okt. 2009

 Dr.-Ing. Ralph Brocke
 Director R&D

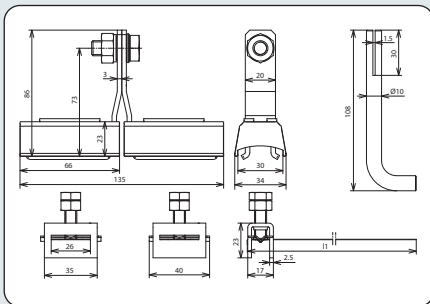


Dimension drawing EXFS 100 KU

Clamping range $\varnothing 6-26,9$ mm (3/4")

Type	EX BRS 27
Part No.	540 821
Lightning impulse current (10/350) Cu $\varnothing 6-12$ mm (I_{imp})	10 kA
Lightning impulse current (10/350) Cu $\varnothing 12-26.9$ mm (3/4") (I_{imp})	20 kA
Lightning impulse current (10/350) Cu $\varnothing 26.9$ mm (3/4") (I_{imp})	25 kA
Lightning impulse current (10/350) St/tZn $\varnothing 17.2-26.9$ mm (3/4") (I_{imp})	25 kA
Lightning impulse current (10/350) StSt $\varnothing 6-12$ mm (I_{imp})	10 kA
Lightning impulse current (10/350) StSt $\varnothing 12-26.9$ mm (3/4") (I_{imp})	12 kA
Lightning impulse current (10/350) StSt $\varnothing 26.9$ mm (3/4") (I_{imp})	25 kA
Terminal	M8
Clamping range of pipe \varnothing	6-26.9 (3/4") mm
Material of clamping body	polyamide
Material of grip head/tensioning strap	StSt
Material of contact clip	brass/gal Sn
Standard	DIN EN 50164-1

Type EX BRS 90 / 300 / 500



Dimension drawing EX BRS



Type EX BRS 90 (Part No. 540 801)
Clamping range $\varnothing 26.9$ (3/4") to 88.9 mm (3")

Type EX BRS 300 (Part No. 540 803)
Clamping range $\varnothing 88.9$ mm (3") to 300 mm

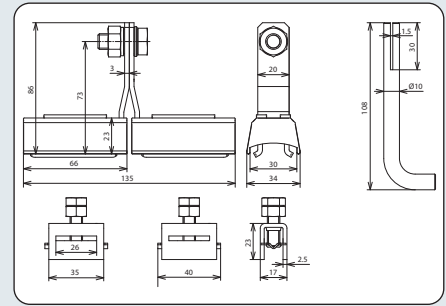
Type EX BRS 500 (Part No. 540 805)
Clamping range $\varnothing 300$ to 500 mm

Type	EX BRS 90	EX BRS 300	EX BRS 500
Part No.	540 801	540 803	540 805
Lightning impulse current (10/350) Cu (I_{imp})	50 kA	50 kA	—
Lightning impulse current (10/350) St/tZn (I_{imp})	50 kA	50 kA	—
Lightning impulse current (10/350) St/bare (I_{imp})	—	—	50 kA
Lightning impulse current (10/350) StSt (I_{imp})	25 kA	50 kA	50 kA
Terminal	M10	M10	M10
Clamping range of pipe \varnothing	26.9 (3/4") - 88.9 (3") mm	88.9 (3") - 300 mm	300 - 500 mm
Material of clamping body	polyamide	polyamide	polyamide
Material of grip head/tensioning strap	StSt	StSt	StSt
Material of contact clip	Cu/gal Sn	Cu/gal Sn	Cu/gal Sn
Standard	EN 50164-1	EN 50164-1	EN 50164-1

Separate clamping body



For use with endless tensioning strap (Part No. 540 901), clamping ranges from Ø26.9 mm (3/4") to 500 mm



Part No.	540 810
Lightning impulse current (10/350) Cu (I _{imp})	50 kA
Lightning impulse current (10/350) St/tZn (I _{imp})	50 kA
Lightning impulse current (10/350) StSt (I _{imp})	25 kA
Terminal	M10
Clamping range of pipe Ø	26.9 (3/4") - 500 mm
Material of clamping body	polyamide
Material of grip head/tensioning strap	StSt
Material of contact clip	Cu/gal Sn
Standard	EN 50164-1

Accessory for Pipe Clamps for Explosion Hazard Areas

Tensioning Strap



Part No.	540 901
Material	StSt
Dimensions of strap (w x d)	...x25x0.3 mm
Length	100 m

Isolating Spark Gaps

- Electrical isolation of insulated track sections and earthed parts of installations
- Safe equipotential bonding in case of a short circuit or earth fault at the overhead contact line due to high-current-resistant welding of the electrodes
- Discharge of lightning surges without formation of short circuits due to lightning-resistant SDS ... voltage limiting device
- Short-circuit withstand capability up to $25 \text{ kA}_{\text{rms}} / 100 \text{ ms}$; $36 \text{ kA}_{\text{rms}} / 75 \text{ ms}$

Voltage limiting device



SDS ...: Cylindrical SDS spark gap unit for use with rail adapter Siemens No. 8WL6503-xx

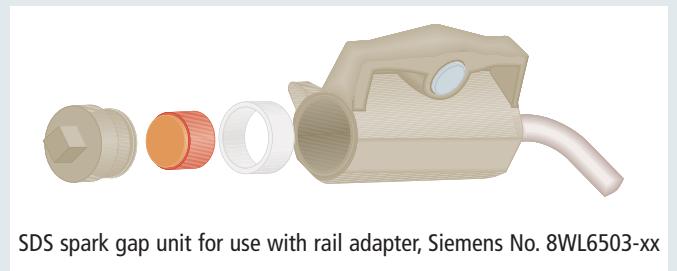
DIN EN 50122-1 describes the use of voltage limiting devices for d.c. and a.c. traction systems for so-called "open traction system earthing" of conductive components of overhead contact lines and current collectors. In order to prevent the occurrence of hazardous surges between the insulated tracks or track sections of electric railways and earthed parts of the installation, voltage limiting devices (SDS ...) are used.

Their function is to permanently connect parts of the installation in the overhead contact line and current collector areas to the return conductor as soon as the threshold voltage is exceeded.

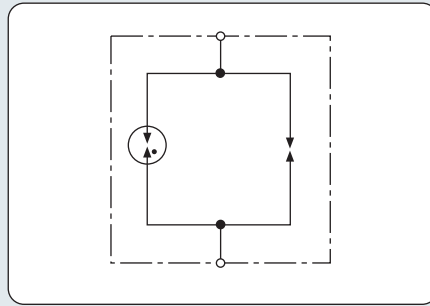
In case of atmospheric overvoltages, the lightning-resistant SDS ... voltage limiting device is capable of returning to its initial state after discharging the impulse current. Only if the specified lightning current load is exceeded, a permanent short-circuit is initiated by heavy-current-resistant welding of the electrodes and the fuse link has to be replaced.

The SDS voltage limiting device consists of a spark gap unit and the respective connecting kit for direct connection to the rail or overhead contact line tower.

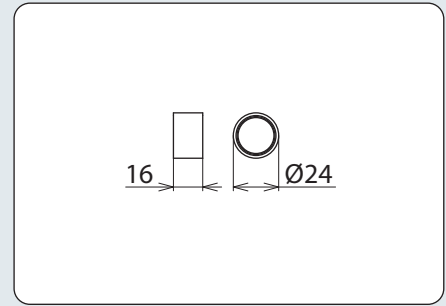
The spark gap unit of type SDS 1 (Part No. 923 110) developed by DEHN + SÖHNE has also been approved by the German Federal Railway Authority (EBA).



SDS spark gap unit for use with rail adapter, Siemens No. 8WL6503-xx



Basic circuit diagram SDS ...



Dimension drawing SDS ...

- Electrical isolation of insulated track sections and earthed parts of installations
- Safe equipotential bonding due to high-current-resistant welding of the electrodes in case of a short-circuit or earth fault at the overhead contact line
- Discharge of surges without short-circuit formation

Spark gap unit for a power-frequency sparkover voltage of 940 V

Type	SDS 1	SDS 2	SDS 3	SDS 4	SDS 5
Part No.	923 110	923 117	923 116	923 118	923 119
Power frequency sparkover voltage (U_{aw})	≤ 940 V	—	—	—	—
d.c. sparkover voltage (U_{ag})	600 V +/- 20 %	350 V +/- 20 %	550 V	230 V +/- 20 %	120 V +/- 20 %
Impulse sparkover voltage	≤ 1400 V (1 kV/μs)	≤ 900 V (1 kV/μs)	≤ 1000 V (1 kV/μs)	≤ 650 V (1 kV/μs)	≤ 600 V (1 kV/μs)
Self-extinguishing capability	300 A / 65 V	—	—	—	—
Lightning current discharge capacity (10/350 μs) 0,1x / 0,5x / 1x	5 kA	2 kA	2.5 kA	2.5 kA	2 kA
Lightning current withstand capability (10/350 μs)	25 kA	25 kA	25 kA	25 kA	25 kA
Impulse current discharge capacity (8/20 μs) 0,1x / 0,5x / 1x	—	—	—	20 kA	20 kA
Safe short-circuit due to welding of the electrodes for alternating currents @ 100 ms	≥ 1.5 kA / 1000 V / 100 ms	—	—	—	—
Safe short-circuit due to welding of the electrodes for alternating currents @ 30 ms	≥ 2.5 kA / 1000 V / 30 ms	—	—	—	—
Safe short-circuit due to welding of the electrodes for direct currents	≥ 750 A / 250 ms	≥ 600 A / 250 ms	—	≥ 600 A / 250 ms	≥ 600 A / 250 ms
Short-circuit withstand capability	25 kA _{rms} / 100 ms; 36 kA _{rms} / 75 ms	25 kA _{rms} / 100 ms; 36 kA _{rms} / 75 ms	25 kA _{rms} / 100 ms; —	25 kA _{rms} / 100 ms; 36 kA _{rms} / 75 ms	25 kA _{rms} / 100 ms; 36 kA _{rms} / 75 ms
Long-term current	1 kA _{rms} for t ≤ 120 s	1 kA _{rms} for t ≤ 120 s	—	1 kA _{rms} for t ≤ 120 s	1 kA _{rms} for t ≤ 120 s
Leakage current (I_{lc})	< 1 μA for 100 V dc	< 1 μA for 100 V dc	—	< 1 μA for 100 V dc	< 1 μA for 100 V dc
Operating temperature range (T_U)	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C
For mounting on	voltage breakdown protectors/SIEMENS rail adapters No. 8WL6503-xx				
Tightening torque of the fuse link in the busbar adapter	15 Nm	15 Nm	15 Nm	15 Nm	15 Nm
Approvals	EBA	—	—	—	—
DB Drawing No.	4 Ebs 15.13.20 Blatt 2	—	—	—	—

Equipotential Busbars

K12 Equipotential Busbars with Snap-on Terminals

Equipotential busbars for protective and functional equipotential bonding and lightning equipotential bonding according to EN 62305-3



Standard type

Terminals for:
10 conductors 2.5-95 mm² (solid/stranded) or Rd Ø10 mm
1 conductor Fl up to 30x4 mm

Part No.	563 200
Contact bar	Cu/gal Sn
Cross section	30 mm ²
Standard	EN 50164-1



UV-stabilised type

Terminals for:
10 conductors 2.5-95 mm² (solid/stranded) or Rd Ø10 mm
1 conductor Fl up to 30x4 mm

Part No.	563 201
Contact bar	Cu/gal Sn
Cross section	30 mm ²
Standard	EN 50164-1

Equipotential Busbar MS



Busbar for equipotential bonding acc. to DIN VDE 0100 Part 410/540

Terminals for:
7 conductors Rd 2.5-16 mm²
1 conductor Rd Ø7-10 mm
1 conductor Fl up to 30x3.5 mm or Rd Ø8-10 mm

Part No.	563 050
Contact bar	brass
Cross section	50 mm ²

Equipotential Busbars R15 with Terminal Block System / Kit

Equipotential busbars for protective and functional equipotential bonding according to DIN VDE 0100 Part 410/540 and lightning equipotential bonding according to EN 62305-3



Type A

Terminals for:
7 conductors 2.5-25 mm² (solid/stranded)
2 conductors 16-95 mm² (solid/stranded) or Rd Ø8-10 mm
1 conductor Fl up to 30x4 mm

Part No.	563 010
Clamping bar	brass/gal Sn
Cross-section	100 mm ²
Standard	EN 50164-1



Type B

Terminals for:
5 conductors 2.5-25 mm² (solid/stranded)
3 conductors 16-95 mm² (solid/stranded) or Rd Ø8-10 mm
1 conductor Fl up to 30x4 mm

Part No.	563 020
Clamping bar	brass/gal Sn
Cross-section	100 mm ²
Standard	EN 50164-1



Type C

Terminals for:
13 conductors 2.5-25 mm² (solid/stranded)
1 conductor 16-95 mm² (solid/stranded) or Rd Ø8-10 mm

Part No.	563 030
Clamping bar	brass/gal Sn
Cross-section	100 mm ²
Standard	EN 50164-1



Type D

Terminals for:
7 conductors 2.5-25 mm² (solid/stranded)
2 conductors 16-95 mm² (solid/stranded) or Rd Ø8-10 mm
1 conductor Fl up to 40x5 mm

Part No.	563 040
Clamping bar	brass/gal Sn
Cross-section	100 mm ²
Standard	EN 50164-1

Accessories / Construction Kit

Terminal Block

Terminals for: 1 conductor 2.5-25 mm² (solid/stranded)



Part No.	563 011
Material	St/gal Zn
Modules	1

Terminal Block

Terminals for: 1 conductor 16-95 mm² (solid/stranded) or Rd Ø8-10 mm



Part No.	563 013
Material	St/gal Zn
Modules	2

Terminal Block

Terminals for: 1 conductor Fl up to 40x5 mm



Part No.	563 012
Material	St/gal Zn
Modules	4

Terminal Block

Terminals for: 1 conductor 2.5-25 mm² (solid/stranded)



Part No.	563 019
Material	St/gal Zn
Modules	5

Clamping Bar

Terminals for: 1 conductor 2.5-25 mm² (solid/stranded)



Part No.	563 016	563 017	563 018
Material	brass/gal Sn	brass/gal Sn	brass/gal Sn
Length (mm)	198	398	798
Modules	15	30	60

Bar Frame



Part No.	563 014
Material	plastic
Fixing	[2x] 6x12 mm

Cover

to be snap on / can be labelled



Part No.	563 015
Material	plastic
Modules	15

Note: For our complete earthing and equipotential bonding product range please refer to our current Lightning Protection / Earthing catalogue, which can be requested from our Export Department.

Equipotential Busbars

Equipotential Busbar with Miniature Terminal Block System

Equipotential busbars for protective and functional equipotential bonding in small systems



without cover
Terminals for:
6 conductors 2.5-25 mm² (solid/stranded)

Part No.	563 105
Clamping bar	brass/gal Sn
Cross-section	100 mm ²
Standard	EN 50164-1

Equipotential Busbars for Industrial Use

Busbars for the protective and functional equipotential bonding acc. to DIN VDE 0100 Teil 410/540 and lightning equipotential bonding according to EN 62305-3 also for use in potentially explosive atmospheres (screws are locked to prevent accidental loosening)



6 terminals

Part No.	472 207	472 209
Material	Cu	StSt
Dimensions (l x w x d)	295x40x5 mm	295x40x6 mm
Cross-section	200 mm ²	240 mm ²
Standard	EN 50164-1	EN 50164-1



8 terminals

Part No.	472 227	472 229
Material	Cu	StSt
Dimensions (l x w x d)	365x40x5 mm	365x40x6 mm
Cross-section	200 mm ²	240 mm ²
Standard	EN 50164-1	EN 50164-1



10 terminals

Part No.	472 217	472 219
Material	Cu	StSt
Dimensions (l x w x d)	435x40x5 mm	435x40x6 mm
Cross-section	200 mm ²	240 mm ²
Standard	EN 50164-1	EN 50164-1



12 terminals

Part No.	472 237	472 239
Material	Cu	StSt
Dimensions (l x w x d)	505x40x5 mm	505x40x6 mm
Cross-section	200 mm ²	240 mm ²
Standard	EN 50164-1	EN 50164-1

Accessories for Equipotential Busbars for Industrial Use

Insulator for EBB for Industrial Use



Part No.	472 210
Material	UP (Duroplast)
Terminal thread	M10 (length 12 mm)
Dimensions (d x h)	32x40 mm

Fixing Set for EBB for Industrial Use



Part No.	563 019
Material of screw	St/tZn
Screw	45 mm $\frac{1}{4}$ M10x20 mm
Plastic dowel	Ø12x60 mm

Earthing Busbars

Earthing Busbars

for screwing or welding to steel structures, bore hole spacing of 50 mm



2x2 terminals

Part No.	472 023	472 109
Material	St/tZn	StSt
Cross-section	240 mm ²	300 mm ²
Bore holes Ø	11 mm	11 mm



2x3 terminals

Part No.	472 022	472 119
Material	St/tZn	StSt
Cross-section	240 mm ²	300 mm ²
Bore holes Ø	11 mm	11 mm



2x4 terminals

Part No.	472 024	472 129
Material	St/tZn	StSt
Cross-section	240 mm ²	300 mm ²
Bore holes Ø	11 mm	11 mm



2x6 terminals

Part No.	472 021	472 139
Material	St/tZn	StSt
Cross-section	240 mm ²	300 mm ²
Bore holes Ø	11 mm	11 mm

Cover for EBB for Industrial Use



*Part No.	472 279	472 269	472 289	472 299
Type of EBB	6 terminals	8 terminals	10 terminals	12 terminals
Dimensions (l x w x d)	301x60x0.8 mm	371x60x0.8 mm	441x60x0.8 mm	511x60x0.8 mm
Material	StSt	StSt	StSt	StSt

Note: For our complete earthing and equipotential bonding product range please refer to our current Lightning Protection / Earthing catalogue, which can be requested from our Export Department.

Connecting Clamps

Connecting Clamps for Reinforcements

Clamps for connecting the reinforced steel mats or reinforcements with round and flat conductors; Arrangement: (II) = parallel (+) = cross



for T, cross and parallel connections

Part No.	308 025
Material	St/tZn
Clamping range Rd / Rd	(+) 6-10 / 6-10 mm
Clamping range Rd / Fl	(+) 6-10 / 30 mm
Clamping range Fl / Fl	(II) 30 / 30 mm



for T, cross and parallel connections

Part No.	308 026
Material	St/tZn
Clamping range Rd / Fl	(+) 6-10 / 30 mm
Clamping range Fl / Fl	(+ / II) 30 / 30 mm



for T and cross connections

Part No.	308 030
Material	St/bare surface
Clamping range Rd / Fl	(+) 6-22 / 40 mm



for T, cross and parallel connections
with clamping frame
for flexible connection of round conductors or for fixed earthing terminals with simultaneous fixing in the formwork

Part No.	308 035
Material	St/bare surface
Clamping range Rd / Rd	(+ / II) 6-22 / 6-10 mm
Clamping range Rd / Fl	(+) 6-22 / 40 mm



Pressure U-clamp
for T, cross and parallel connections

Part No.	308 031
Material	St/bare surface
Clamping range Rd / Rd	(+ / II) 6-20 / 6-10
Clamping range Rd / Fl	(+ / II) 6-20 / 30x3-4
Clamping range Fl / Fl	(+ / II) 30x3-4 / 30x3-4



Pressure U-clamp MAXI
for T, cross and parallel connections

Part No.	308 036
Material	St/bare surface
Clamping range Rd / Rd	(+ / II) 20-32 / 6-10
Clamping range Rd / Fl	(+ / II) 20-32 / 40x4-5



U-clamp terminal for large diameters

Part No.	308 045
Material	St/bare surface
Clamping range Rd / Rd	(II) 16-48 / 6-10 mm
Clamping range Rd / Fl	(II) 16-48 / 30-40 mm

Connecting Clamps



U-clamp terminal for large diameters
with two additional clamping frames
cross connections of round conductors (6-10 mm) or for fixing with simultaneous connection of fixed earthing terminals

Part No.	308 046
Material	St/bare surface
Clamping range Rd / Rd	(+ / II) 16-48 / 6-10 mm
Clamping range Rd / Fl	(II) 16-48 / 30-40 mm



MAXI MV clamps
for T, cross and parallel connections

Part No.	308 041	308 040
Material	St/tZn	St/bare surface
Clamping range Rd / Rd	(+ / II) 8-16 / 15-25 mm	(+ / II) 8-16 / 15-25 mm

Components for Foundation Earth Electrodes

Connecting Clamps for Foundation Earth Electrodes

For connecting round and flat conductors in the concrete foundation for T, cross and parallel connections, without having to thread the conductors



Part No.	308 120	308 129
Material	St/tZn	StSt
Clamping range Rd / Fl	(+) 10 / 30 mm	(+) 10 / 30 mm
Clamping range Fl / Fl	(+ / II) 30 / 30 mm	(+ / II) 30 / 30 mm

Spacers

for installing earth conductors in the foundation slab with safety lug which prevents working loose of the conductor



Angled and reinforced / straight type

Part No.	290 001	290 002
Type	angled and reinforced	straight
Material	St/tZn	St/tZn
Support Fl	40 mm	40 mm
Support Rd	8-10 mm	8-10 mm
Length	300 mm	280 mm

Expansion Strap for Foundation Earth Electrodes

Expansion strap as foundation earth electrode jumper in extended foundations (several sections) at the expansion joints. The earth electrode no longer has to be led out of the base plate.



Part No.	308 150
Material of strap	StSt
Dimensions of block (l x w x d)	approx. 700x30x(4x1) mm
Material of block	polystyrene

Note: For our complete earthing and equipotential bonding product range please refer to our current Lightning Protection / Earthing catalogue, which can be requested from our Export Department.

Components for Ring Equipotential bonding

Flat Strip Holders with thrust piece

For wall mounting

Thrust piece with screw M8 for the installation of strip conductors up to 11 mm and round conductors 6-10 mm



Wall distance of 11 mm

Part No.	277 230	277 237	277 239
Material of conductor holder	St/tZn	Cu	StSt
Fixing	Ø13 and 7x20 mm	Ø13 and 7x20 mm	Ø13 and 7x20 mm
Material of screw	StSt	StSt	StSt



Wall distance of 15 mm

Part No.	277 240
Material of conductor holder	St/tZn
Fixing	7x15 mm
Material of screw	StSt

Terminal Clamp

For universal connection to the ring equipotential bonding for St/tZn, copper or stainless steel (StSt)



Part No.	563 169
Conductor holder support Rd / Fl	Ø8-10 / 30x3 to 11 mm
Material	StSt
Terminal cross-section	2.5-95 mm ²

- Permanent condition monitoring of LifeCheck-equipped arresters ensures a maximum degree of system protection and availability
- The early detection system already detects arrester overload and warns of imminent arrester failure
 - Visual indication of faulty or previously damaged arresters
 - Compact dimensions and minimum wiring
 - Monitoring of up to ten arresters (40 signal cores)
 - Remote signalling contact
 - Remote monitoring also via RS485 interface and PC software



Installed DEHNrecord condition monitoring unit

Condition Monitoring

The DRC MCM XT condition monitoring system is a compact DIN rail mounted device designed for condition monitoring of up to 10 pre-programmed BXT/BXTU arresters with an integrated LifeCheck monitoring circuit.

Integrated into the protection modules, LifeCheck permanently monitors the proper condition of the arrester and acts like an early warning system, detecting imminent electrical or thermal overload of the protection components. The LifeCheck status can be read out via contactless RFID technology. Stationary installed, the condition monitoring system allows condition-based maintenance of 10 BXT/BXTU arresters.

The system acts like an early warning system, generating a fault message already in case of imminent arrester overload. This fault message is indicated by means of the integrated three-coloured LED and transmitted via one of two integrated remote signalling contacts. Failure of the monitoring system, e.g. due to a voltage breakdown, is also indicated via the remote signalling contacts.

The Show function integrated in the DRC MCM system allows to detect previously damaged arresters in the monitoring group.

If several condition monitoring systems are used in one switchgear cabinet, these systems are connected via the integrated RS485 interfaces to synchronise the monitoring cycles. Up to 15 DRC MCM systems can be connected to one another at the RS485 bus, allowing up to 150 BLITZDUCTOR modules or 300 pairs to be monitored simultaneously with minimum wiring effort.

The "Status Display and Service Console" PC software

is an optional user software for the DRC MCM XT condition monitoring system. It indicates the status of the arresters and addresses the LifeCheck-equipped BLITZDUCTOR modules.

The software can be installed on a standard PC using an RS485/USB interface converter of type "USB-NANO 485" which is available as accessory.

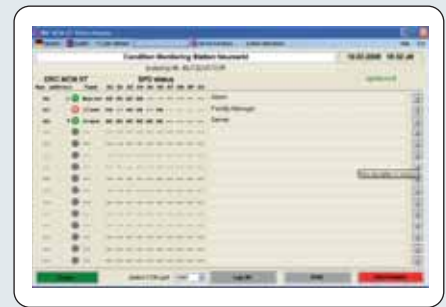
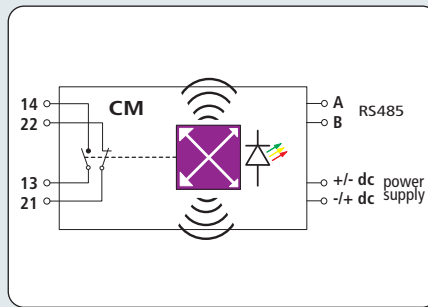
The software can be downloaded free of charge from www.dehn.de/download/ or is available as CD for a nominal fee.



Graphical status indication of DRC MCM XT monitoring systems and of all programmed protection modules assigned to them.

The Service functions allow to switch to the "Service Console" function complex. The protection modules can be easily addressed, tested and reset by means of the user-friendly interface.

DRC MCM XT



- Condition monitoring of LifeCheck-equipped arresters
- Permanent monitoring of up to 10 arresters (40 signal lines)
- Minimum wiring effort
- Optional remote signalling via RS485 or remote signalling contacts

Basic circuit diagram DRC MCM XT

DRC MCM XT Status Display software

DIN rail mounted device with integrated LifeCheck sensor for condition monitoring of max. ten LifeCheck-equipped BLITZDUCTOR XT/XTU arresters. A three-coloured LED and a remote signalling contact (break or make contact) indicate the operating state of the arrester.

The free "Status Display and Service Console" software can be optionally used via an RS485 interface converter. The software allows to remotely monitor the condition of all monitored arresters by means of a PC.

Download: www.dehn.de/download

Type	DRC MCM XT
Part No.	910 695
For testing	up to 10 BLITZDUCTOR XT/XTU ML arresters up to 10 BLITZDUCTOR XT/XTU ML EX arresters; for use in non-hazardous atmospheres only!
	Observe thread measure!
Operating elements	multiway button, DIP switch
Indicator	three-coloured LED (green, orange, red)
Input d.c. voltage range (U _{IN})	18...48 V
Max. nominal current input (I _{IN})	100 mA
RFID transmission frequency	125 kHz
Message: Replacing of SPD recommended	LED, remote signalling contact (break and make contact)
Test cycle	continuous
Operating temperature range for monitoring 10 BXT/BXTU arresters	-20°C...+60°C
Operating temperature range for monitoring 8 BXT/BXTU arresters	-40°C...+80°C
Degree of protection	IP 20
For mounting on	35 mm DIN rails acc. to EN 60715
Connection type	screw
Cross-sectional area, solid / flexible	0.08 - 2.5 mm ²
Tightening torque (terminal)	0.4 Nm
Enclosure material	polyamide PA 6.6
Colour	grey
Test standards	EN 61010-1, 61000-6-2/4, ETSI EN 300 330-1 V1.7.1
Type of remote signalling contact	make (no) and break contact (nc)
Technical data of remote signalling contact	contact resistance < 25 ohms; leakage current < 1 µA
d.c. switching capacity	350 V/0.12 A
a.c. switching capacity	250 V/0.07 A
Delivery includes	base part, monitoring module, quick guide and labelling system

Accessories for Condition Monitoring System with LifeCheck® Sensor

USB Interface Converter of Type USB NANO 485

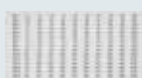
USB NANO 485 converts between USB and RS-485 signals. The interface converter is specifically designed for two-wire RS-485 buses. LEDs indicate operation (yellow), Rx (green) and Tx (red). USB NANO 485 is ideally suited for use with notebooks due to its compact dimensions. Stationary use is also possible.



Type	USB NANO 485
Part No.	910 486
Version	with LED indication

Labelling System BA1-BA15

2x 165 adhesive labels for labelling DRC MCM XT monitoring devices with their bus address.



Type	BS BA1 BA15 BXT
Part No.	920 398
Colour	transparent

Status Center Software CD for DRC MCM XT

Status Center software for starting and managing up to 20 instances of the "Status Display with integrated Service Console" DRC MCM XT monitoring software. Monitoring and status indication of up to 3000 BLITZDUCTOR XT/XTU LifeCheck modules in up to 20 DRC MCM XT monitoring systems (15 DRC MCM XT each with RS485 bus wiring).



Type	SWP MCM ST CENTER
Part No.	910 489
For	up to 3000 BLITZDUCTOR XT

- **A higher degree of protection and availability is achieved by preventive maintenance**
 - The LifeCheck monitoring device detects thermal or electrical overload of all components
 - To avoid imminent failure and thus system downtime, the protection module should be replaced as soon as possible
- **This type of SPD testing has the following benefits:**
 - Extremely easy and within a matter of seconds
 - Module does not have to be removed during system operation
 - Detection of thermal or electrical overload of all components



Maintenance tests and test intervals of a lightning protection systems are specified in DIN EN 62305-3, supplement 3 (see table excerpt).

Class of LPS	Visual inspection	Complete inspection	Complete inspection of critical systems
I and II	1 year	2 years	1 year
III and IV	2 years	4 years	1 year

However, these specifications are only standard-based minimum requirements. Visual inspection of arresters for information technology systems does not make sense since the status of the devices is generally not visible. For this purpose, another method has to be chosen as is the case with complete inspections. In the past, measurement equipment was used to test arresters. These measurements were very time consuming, required expertise and the measurements did not provide sufficient information.

Preventive maintenance:

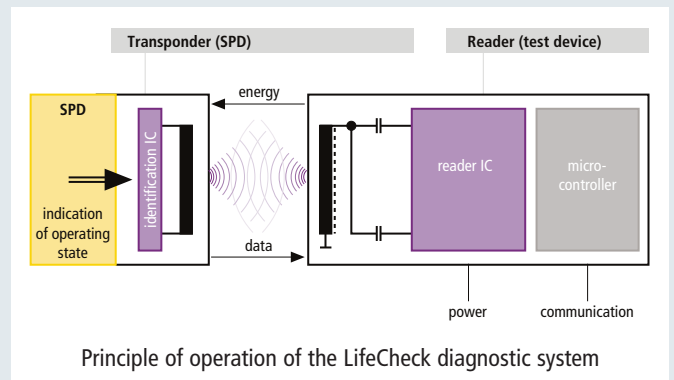
When using this maintenance strategy, arresters are tested and measured at regular intervals. The arresters are assessed according to certain criteria and, if required, replaced.

In the past, this was very time consuming, expensive and required downtime of the system.

For some years, LifeCheck-equipped arresters have been available, allowing to determine the status of the arrester via RFID technology. A monitoring circuit with a transponder in the arrester permanently monitors the protective circuit for impermissible overload caused by thermal overheating or electrical impulse currents.

Information is read out via a hand-held tester. This tester houses the reader, an RFID reader unit.

It contactlessly transmits electromagnetic energy to the transponder in the SPD, reads out its status and displays it. Information is simple: "SPD OK" or "Replace SPD!". This test is carried out easily within a matter of seconds without removing the SPD. The test can be carried out at any time without downtime since signal transmission is not interrupted.



This type of monitoring reliably detects thermal and electrical overload of all components, typically before the arrester fails and the availability of the system to be protected is limited. In addition, no expertise is required for testing. The reader also facilitates documentation of the test results, which is mandatory in compliance with the EN 62305-3 standard.

The test data (date, time, results) of all arresters are saved and can be transmitted to a PC via USB interface for printing or storage. Thus a higher degree of protection and availability is achieved by means of preventive maintenance with LifeCheck since overload of components is already detected before the protection of the system circuit fails.



DRC LC M3+



PC database software

Snap-on LifeCheck sensor

- Fast testing of LifeCheck-equipped arresters
- Hand-held device, easy transport and operation
- With database function for documentation
- Easy and fast parameterisation of arresters for condition monitoring with LifeCheck

Portable device with LifeCheck sensor for flexible use. Fast and easy testing of LifeCheck-equipped arresters. Visual and acoustic indication. With additional USB connection and database software for PC-aided management of test samples and documentation of the test results. The DRC LC M3+ features a snap-on LifeCheck sensor, eliminating the need to hold it to the arrester when testing. The hand-held device allows parameterisation of arresters for condition monitoring.

Type	DRC LC M3+
Part No.	910 653
Testing of	BLITZDUCTOR XT/XTU ML
Testing of BXT ML EX	BLITZDUCTOR XT ML EX: for use in non-hazardous atmospheres only!
Voltage supply (included in delivery)	Li-ion battery
RFID transmission frequency	125 kHz
Measured value indication	beep and LCD
Testing period	typically 3 to 10 sec.
Operating temperature range	-20°C...+65°C
Battery test	automatically switched off in case of flat battery
Cable length to the LifeCheck sensor	approx. 1000 mm
Dimensions of the LifeCheck sensor	90 x 51 x 12 mm
Dimensions of the hand-held device	166 x 95 x 30 mm
Delivery includes	hand-held device, LifeCheck sensor BXT, charging device, USB cable, test module for reference, software CD, storage case
Dimensions of the storage case	340 x 275 x 83 mm

Accessory for LifeCheck® SPD Test Device

LifeCheck Sensor for DRC BXT / BCT

Snap-on LifeCheck sensor and test module for use as spare part / extension for portable LifeCheck test devices.



Type	LCS DRC BXT	LCS DRC BCT
Part No.	910 652	910 654
For testing	BLITZDUCTOR XT ML	BLITZDUCTOR CT MLC

- For routine tests of surge protective devices
- Compact dimensions
- Suitable for mains and battery operation
- Low-battery indicator
- Test cables included in delivery
- Touch-proof test adapter available as accessory part



For testing the sparkover voltage of surge arresters. The test sample is connected via the included test cables or special test adapters.



Scope of delivery of the PM20 SPD test device

The PM 20 SPD test device with integrated sparkover detection allows to test Yellow/Line or Red/Line surge arresters with integrated varistor, Zener diode or gas discharge tube. Both the sparkover performance between the connections of the arresters as well as the continuity can be tested. The results can be compared to the limit values stated in the instructions for use. In case of deviations, the arrester or protection module has to be replaced. Test adapters with a corresponding support simplify testing of arresters of the BLITZDUCTOR XT and DEHNrapid LSA product family.

PM 20



- Combined testing of protective circuits with gas discharge tubes, varistors and zener diodes
- Easy and flexible use
- For use with PA BXT and PA DRL test adapters

Combined device for testing the sparkover voltage of surge arresters (with gas discharge tubes/varistors/zener diodes). Storage bag and measuring accessories included.

Type	PM 20
Part No.	910 511
Nominal d.c. voltage (U_N)	8-12 V d.c.
Test parameter: Test voltage	max. 1250 V d.c.
Test parameter: Test current (reference voltage)	1 mA d.c., constant
Measured value indication	alphanumeric, eight-digit LCD
Test output sockets	safety pole terminals (4 mm), positive pole: red colour, negative pole: black colour
Testing period	≤ 1.5 sec.
Number of individual tests during battery operation	typically 2000
Accessories included in delivery	2 test cables, (each 1 m long), 2 safety tapping test clips, 1 plug-in power supply unit (230 V a.c.), 1 storage bag
Dimensions of the storage bag	300 x 110 x 110 mm

Accessory for SPD Test Device

PA DRL Test Adapter

To be connected to PM 10 / PM 20 and to be plugged in for testing protection modules



Type	PA DRL
Part No.	910 507
Plug-in protection modules	DEHnrapiid LSA and DPL

Accessory for SPD Test Device

PA BXT Test Adapter

To be connected to PM 10 / PM 20 and to be plugged in for testing protection modules



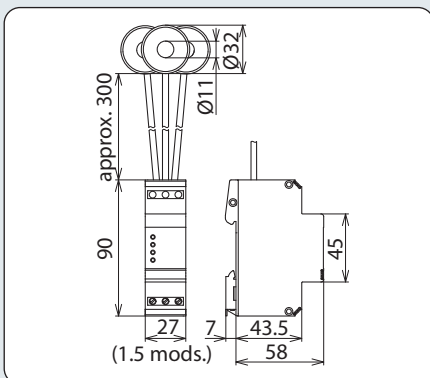
Type	PA BXT
Part No.	910 508
Plug-in protection modules	BLITZDUCTOR XT / CT

- SPD monitoring device for potential-free measuring of leakage currents flowing through surge arresters
- Measuring and evaluation unit in a compact DIN rail mounted enclosure (1.5 modules)
- Three hard-wired winding-type transformers
- Self-test and reset function
- Battery supply
- Two limit values for the leakage currents to be monitored
- LED indication on site and remote signalling contact

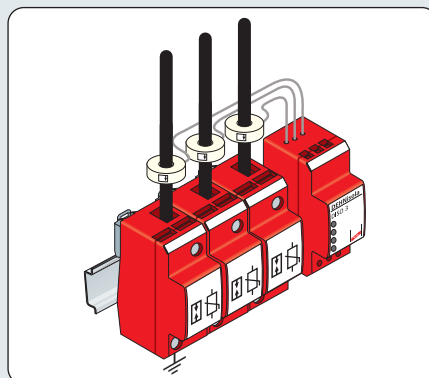


The DEHNisola monitoring device continuously monitors the function of installed lightning current and surge arresters

DEHNisola: Measuring and evaluation unit with three hard-wired winding-type transformers and fixing accessory



Dimension drawing DISO 3



Measuring and evaluation device with three winding-type transformers

Type	DISO 3
Part No.	910 600
Indication of limit value 1 (I _L)	0.5 mA _{rms} (indication only on site, will be reset when the value falls below the limit value)
Indication of limit value 2 (I _L)	5 mA _{rms} (indication on site and remote signalling, will be reset only by pushing the reset button at the device)
Measuring cycle	every hour or acyclically after every discharge process of the protective device to be monitored
Self-test	injection of fault currents in each sensor for testing the measuring unit, "reset" > 2 sec.
Battery supply	battery life: approx. 10 years, LowBatt indication and remote signalling
Remote signalling contact: Max. a.c. switching voltage	125 V
Remote signalling contact: Max. d.c. switching voltage	110 V
Remote signalling contact: Max. switching capacity	30 W
Remote signalling contact: Max. switching current	1 A
Remote signalling contact: Cross-sectional area	0.5 to 4 mm ²
Operating temperature range	-25°C...+60°C
For mounting on	35 mm DIN rails acc. to EN 60715
Enclosure material of the measuring and evaluation device	thermoplastic, red, UL 94 V-0
Degree of protection of the measuring and evaluation device	IP 20
Dimensions of the measuring and evaluation device	1.5 modules, DIN 43880
Dimensions of the sensors	inner diameter: 11 mm, outer diameter: 33 mm
Length of the sensor cables	300 mm each
Weight	0.23 kg

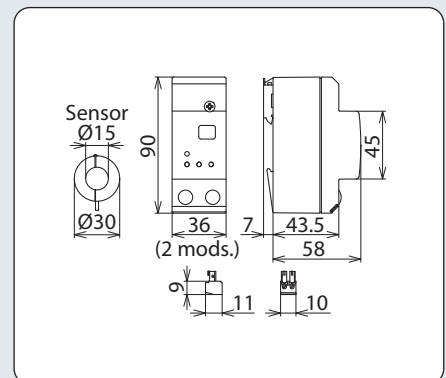
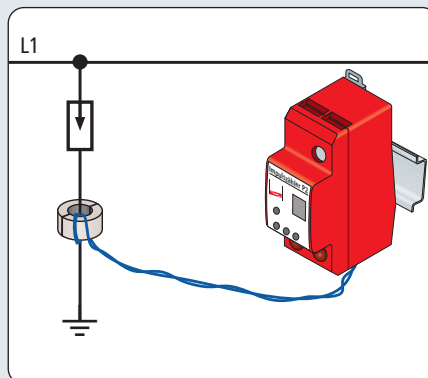
Registration of discharge processes



- Potential-free registration of discharge currents flowing through surge protective devices
- Easy installation by enclosing the earth conductor of the arrester with a hinged toroidal core
- Counter in a DIN rail mounting enclosure (2 modules)
- Twisted sensor cable, 1 m long

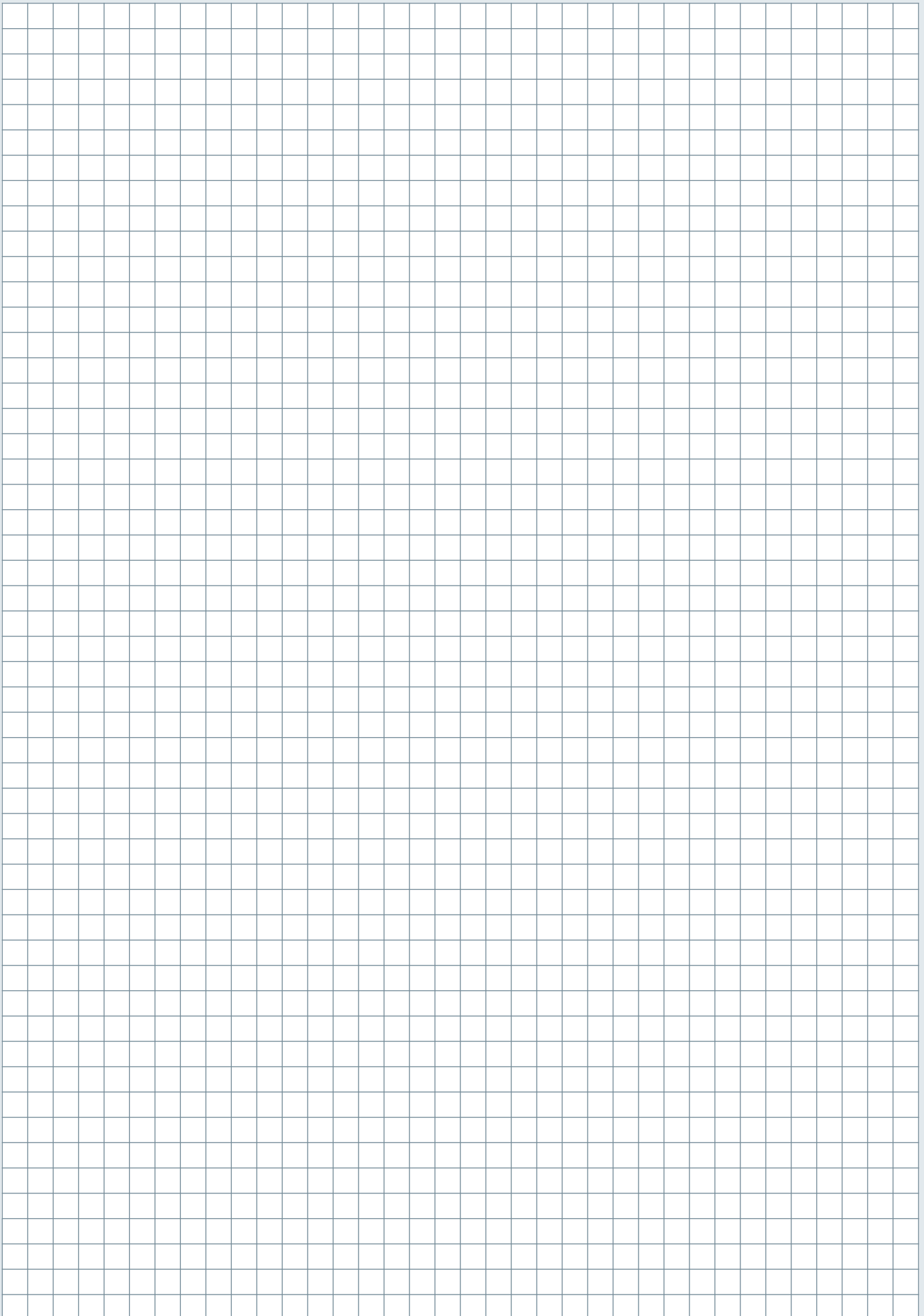
Counter with integrated battery supply (9 V) and battery charge control. Indication via two-digit LCD with setting and resetting buttons.

P2 impulse counter: Counter, sensor cable and toroidal core with fixing accessory



Dimension drawing P2

Type	P 2
Part No.	910 502
Response threshold for impulse currents (rise time $\geq 8 \mu\text{s}$)	$> 1 \text{ kA}$
Sequence of impulses	1 s
LCD	electronic counter 0...99
Power supply	9 V battery (IEC 6LR61) included in delivery, replaceable, battery life > 1 year
Battery charge control	button and LED situated at device
Setting device	button at device for setting the counter (e.g. after replacing a battery)
Resetting device	button at device for resetting the counter to 0
Operating temperature range	$-10^{\circ}\text{C}...+50^{\circ}\text{C}$
For mounting on	35 mm DIN rails acc. to EN 60715
Enclosure material (counter)	thermoplastic, red, UL 94 V-0
Enclosure material (sensor)	PA 6, grey
Degree of protection	IP 20
Dimensions (counter)	2 modules, DIN 43880
Dimensions (sensor)	inner $\varnothing 15 \text{ mm}$, outer $\varnothing 36 \text{ mm}$
Length of the connecting cable (between sensor and counter)	max. 1 m, twisted
Weight (counter, sensor and connecting cable)	0.2 kg
Accessories included in delivery	9 V battery, IEC 6LR61; cable tie (for fixing the sensor)



Publications

- DS103 DEHN protects Wind Turbines.
- DS104 DEHN protects Cell Sites.
- DS107E Surge Protection: Safety for Sewage Plants.
- DS109 DEHN protects Photovoltaic Systems.
- DS113 DEHN tests and analyses.
- DS122 DEHN protects the Oil and Gas Industry.
- DS143E BLITZDUCTOR® XT with LifeCheck®.
- DS144 DEHN protects Biogas Plants.
- DS145E LSA with Lightning Current Carrying Capacity
- DS164E BLITZDUCTOR XTU
- DS150 Easy choice surge protection
- DS169E DEHNguard M/S...CI.
- DS174E Testing and monitoring.
- DS509 DEHN protects.
- DS614E DEHN stops Surges.
- DS641E Coordinated Surge Protection.
- DS649E Surge Protection – Easy choice.
- DS661E When lightning strikes.
- DS702E Lightning Protection Guide

Further main catalogues

- DS396E Safety Equipment
- DS427E Lightning Protection / Earthing

DEHN CD

- DS707 DEHNtour
DEHN + SÖHNE – Company Presentation
- DS708 3D animated films (DVD)
 - DEHN protects photovoltaic systems
 - DEHNguard T H...LI with Pro-Active Thermo Control
 - New Red/Line DEHNventil modular
 - DEHN protects Cell Sites
 - Protection of Ex (i) circuits
 - Maintenance strategy with BLITZDUCTOR XT

Reprints

- 61E Surge Protection – Practice-Oriented and Standard-Conform
From etz, 10/2006
- 63E Lightning and Surge Protection for Telecommunications and Signalling Networks
From etz, 02/2007
- 75E Lightning protection systems with ESE devices ... under scrutiny
From Elektropraktiker, 10/2010
- 77E Modular arc fault protection system DEHNarc
From VDE ETG, 09/2010 (only pdf)

Seminars

- We hold seminars on
- **Lightning Protection / Earthing**
 - **Surge Protection**
 - **Safety Equipment**

as well as protection for special applications such as cell sites, photovoltaic systems, wind turbines, etc.
For more information regarding topics, dates, locations, etc., please contact the responsible DEHN + SÖHNE representative in your country. They shall be pleased to give you the requested information.

Note

Like our catalogues and publications, our **installation instructions** can also be downloaded from our website www.dehn.de.

Contact

The printed publications can be ordered free of charge from our **Export Department**,
Fax +49 9181 906-1444
export@dehn.de

DIN VDE Standards, VDE-Verlag, Berlin

DIN VDE 0100-100:2009-06

Low-voltage electrical installations - Part 1: Fundamental principles, assessment of general characteristics, definitions (IEC 60364-1:2005, modified);
German implementation HD 60364-1:2008

DIN VDE 0100-410:2007-06

Low-voltage electrical installations – Part 4-41: Protection for safety – Protection against electric shock
(IEC 60364-4-41:2005, modified);
German implementation HD 60364-4-41:2007

DIN VDE 0100-443:2007-06

Low-voltage electrical installations – Part 4-44: Protection for safety – Protection against voltage disturbances and electromagnetic disturbances – Clause 443: Protection against over-voltages of atmospheric origin or due to switching
(IEC 60364-4-44:2001 + A1:2003, modified);
German implementation HD 60364-4-443:2006

DIN VDE 0100-534:2009-02

Low-voltage electrical installations - Part 5-53: Selection and erection of electrical equipment – Isolation, switching and control – Clause 534: Devices for protection against overvoltages (IEC 60364-5-53:2001/A1:2002 (Clause 534), modified);
German implementation HD 60364-5-534:2008

DIN VDE 0100-540:2007-06

Low-voltage electrical installations – Part 5-54: Selection and erection of electrical equipment – Earthing arrangements, protective conductors and protective bonding conductors
(IEC 60364-5-54:2002, modified);
German implementation HD 60364-5-54:2007

DIN VDE 0100-717:2010-10

Low-voltage electrical installations – Part 7-717: Requirements for special installations or locations – Mobile or transportable units
(IEC 60364-7-717:2009, modified);
German implementation HD 60364-7-717:2010

DIN VDE 0141:2000-01

Earthing system for special power installations with nominal voltages above 1 kV

DIN VDE 0618-1:1989-08

Equipment for equipotential bonding; equipotential bonding bush for main equipotential bonding

DIN VDE 0800-1:1989-05

Telecommunications;
General concepts; requirements and tests for the safety of facilities and apparatus

DIN VDE 0800-2:2011-06

Telecommunications;
Earthing and equipotential bonding

DIN VDE 0800-10:1991-03

Telecommunications;
Transitional requirements on erection and operation of installations

DIN EN 41003

DIN VDE 0804-100:2009-04
Particular safety requirements for equipment to be connected to telecommunication networks;
German version EN 41003:2008

DIN EN 50164-1

DIN VDE 0185-201:2009-03
Lightning protection components (LPC) – Part 1: Requirements for connection components
German version EN 50164-1:2008

DIN EN 50178

DIN VDE 0160:1998-04
Electronic equipment for use in power installations
German version EN 50178:1997

DIN EN 50514

DIN VDE 0805-514:2009-04
Audio, video and information technology equipment - Routine electrical safety testing in production;
German version EN 50514:2008

DIN EN 60060-1

DIN VDE 0432-1:2011-10
High voltage test techniques – Part 1: General specifications and test requirements
(IEC 60060-1:2010);
German version EN 60060-1:2010

DIN EN 60099-1

DIN VDE 0675-1:2000-08
Surge arresters – Part 1: Non-linear resistor type gapped surge arresters for a.c. systems
(IEC 60099-1:1991)
German version EN 60099-1:1994 + A1:1999

DIN EN 60664-1

DIN VDE 0110-1:2008-01
Insulation coordination for equipment within low-voltage systems – Part 1: Principles, requirements and tests (IEC 60664-1:2007)
German version EN 60664-1:2007

DIN EN 60728-11

VDE 0855-1:2011-06
Cable networks for television signals, sound signals and interactive services – Part 11: Safety (IEC 60728-11:2010);
German version EN 60728-11:2010

DIN EN 61643-11

VDE 0675-6-11:2007-08
Low-voltage surge protective devices – Part 11: Surge protective devices connected to low-voltage power systems; Requirements and tests (IEC 61643-1:1998 + corrigendum 1998, modified);
German version EN 61643-11:2002 + A11:2007

DIN EN 62305-1

VDE 0185-305-1:2011-10
Protection against lightning – Part 1: General principles (IEC 62305-1:2010, modified);
German version EN 62305-1:2006

DIN EN 62305-2

VDE 0185-305-2:2006-10
Protection against lightning – Part 2: Risk management (IEC 62305-2:2006);
German version EN 62305-2:2006

DIN EN 62305-3

VDE 0185-305-3:2011-10
Protection against lightning – Part 3: Physical damage to structures and live hazard (IEC 62305-3:2010, modified);
German version EN 62305-3:2011

DIN EN 62305-4

VDE 0185-305-4:2011-10
Protection against lightning – Part 4: Electrical and electronic systems within structures (IEC 62305-4:2010, modified);
German version EN 62305-4:2011

DIN 18014:2007-09

Foundation earth electrode – General planning criteria

IEC 60664-1:2007-04

Insulation coordination for equipment within low-voltage systems; part 1: principles, requirements and tests

IEC 61643-11:2011-03

Low-voltage surge protective devices – Part 11: Surge protective devices connected to low-voltage power systems; Requirements and tests

IEC 61643-21:2009-04

Low voltage surge protective devices – Part 21: Surge protective devices connected to telecommunications and signalling networks – Performance requirements and testing methods

IEC 62305-1:2010-12

Protection against lightning – Part 1: General principles

IEC 62305-2:2010-12

Protection against lightning – Part 2: Risk management

IEC 62305-3:2010-12

Protection against lightning – Part 3: Physical damage to structures and life hazard

IEC 62305-4:2010-12

Protection against lightning – Part 4: Electrical and electronic systems within structures

VG Standards, Beuth-Verlag GmbH**VG 95 372:2009-04**

Electromagnetic Compatibility (EMC) including Electromagnetic Pulse (EMP) and Lightning Protection – Survey

VG 95 371-10:2011-09

Electromagnetic compatibility (EMC) including electromagnetic pulse (EMP) and lightning protection – Fundamentals – Part 10: Threat levels for NEMP and lightning
Supplement 1:2005-01, Supplement 2:2005-01.

VG 96 907-1:2006-10

Nuclear Electromagnetic Pulse (NEMP) and lightning protection – Design guidelines and protective devices – Part 1: Fundamentals

Further Standards

DVGW GW 309:1986-11, Elektrische Überbrückung bei Rohrtrennungen [Electrical bridging of separate pipe sections].
ZfGW-Verlag GmbH, Frankfurt.

Arbeitsgemeinschaft DVGW/VDE für Korrosionsfragen (AfK): AfK-Empfehlung Nr. 5/02.86, Kathodischer Korrosionsschutz in Verbindung mit explosionsgefährdeten Bereichen [German Corrosion Protection Committee (AfK): AfK recommendation No. 5/02.86, Cathodic corrosion protection in connection with potentially explosive areas]
ZfGW-Verlag GmbH, Frankfurt

KTA 2206/2000-06: Auslegung von Kernkraftwerken gegen Blitzeinwirkung [Protection for nuclear power plants against lightning effects]

Books

- Hasse P., Wiesinger J., Zischank W.: "Handbuch für Blitzschutz und Erdung" [Lightning Protection and Earthing Guide] Pflaum Verlag GmbH & Co.KG, Munich, 5th edition of 2006, ISBN 3-7905-0931-0
- Hasse P., Landers U., Wiesinger J., Zahlmann P.: "EMV-Blitzschutz von elektrischen und elektronischen Systemen in baulichen Anlagen – Risiko-Management, Planen und Ausführen nach den neuen Normen der Reihe VDE 0185-305" 2. vollständig überarbeitete und erweiterte Auflage 2007, [EMC-based lightning protection for electrical and electronic systems installed into structures – Risk management, design and performance according to new standard series DIN VDE 0185-305, 2nd completely revised and amended edition of 2007], series volume No. 185, Berlin-Offenbach: VDE Verlag GmbH, ISBN 9-783800-730018
- Raab V.: "Überspannungsschutz in Verbraucheranlagen – Auswahl, Errichtung, Prüfung" [Surge protection for consumer's installations – Selection, installation and testing], Huss-Medien GmbH Verlag Technik, Berlin 2nd updated and amended edition of 2003 ISBN 3-341-01347-4
- Raab P., Zahlmann P.: "Loseblattsammlung VDE-Kompass" [VDE Guide – Loose collection of sheets] InfoPLUS-Paket 6 (12th supplemental set) "Neue Blitzschutz-Normen in der Praxis", [New lightning protection standards in practice], VDE Verlag, Berlin Offenbach
- DEHN + SÖHNE GmbH + Co.KG. Lightning Protection Guide, 2nd updated edition 2007, ISBN 3-00-015975-4 (We are presently working on a 3rd revised and enlarged edition)

Notes

Since we do not plan systems or parts of systems, our product recommendations should be regarded as product information and for advisory purposes only. Our oral and written application proposals are based on experience and

are specified to the best of our knowledge. We do not accept any liability in this respect. This particularly applies to the different conditions of use which are beyond our control. We recommend to check whether the respective DEHN

product is suitable for the intended application. Application, use and processing of our products are beyond our control. Therefore, the product is completely subject to the user's responsibility.

Trademarks







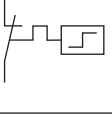






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- BLITZDUCTOR®
- DEHNbloc®
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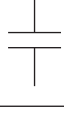


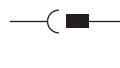




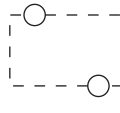

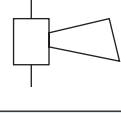
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Key to Symbols used in Basic Circuit Diagrams

Symbol	Description	Standard
	Creepage discharge spark gap, follow-current-limiting, encapsulated, non-exhausting, RADAX FLOW technology	
	Creepage discharge spark gap, non-exhausting, encapsulated	
	Horn gap, non-exhausting	
	Graphite spark gap, non-exhausting	
	Varistor	EN 60617 Part 4 04-01-04
	Thermal disconnect	EN 60617 Part 7 07-09-03
	Thermo Dynamic Control	EN 60617 Part 7 07-09-03
	Spark gap, general	EN 60617 Part 7 07-22-01
	Fuse	EN 60617 Part 7 07-21-01
	Thermal fuse	
	Filter, general	EN 60617 Part 10 10-16-03
	Suppressor diode, bipolar	EN 60617 Part 5 05-03-07
	Z diode, unipolar	EN 60617 Part 5 05-03-06

Symbol	Description	Standard
	Gas discharge tube (single)	EN 60617 Part 7 07-22-04
	Gas discharge tube (balanced)	EN 60617 Part 7 07-22-05
	Resistor, decoupling element, general	EN 60617 Part 4 04-01-01
	Capacitor	EN 60617 Part 4 04-02-01
	Inductor	EN 60617 Part 4 04-A3-01
	Resistor, temperature-controlled	
	Socket and plug connector	EN 60617 Part 3 03-03-05
	Break contact	EN 60617 Part 7 07-02-03
	Changeover contact with interruption	EN 60617 Part 7 07-02-04
	Changeover contact without interruption	EN 60617 Part 7 07-02-06
	Make contact	EN 60617 Part 7 07-02-01
	Enclosure with terminals	EN 60617 Parts 2 + 3 02-01-07 03-02-02
	LED, general	EN 60617 Part 8 08-10-01
	Acoustic signal	EN 60617 Part 8 08-10-05

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Surge Protection
Lightning Protection
Safety Equipment
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