

- 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.

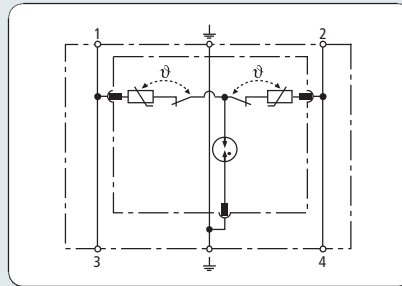
The base part and protection module are coded to ensure against installing an incorrect module.

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.

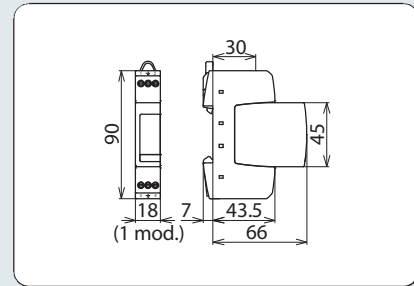
In the event of the protective circuit being overloaded, the protection modules can be easily replaced without tools by simply pressing the module release button.



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.



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 _N)	25 A	25 A	25 A	25 A	25 A
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
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	≤ 1200 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

Surge Arresters Type 3

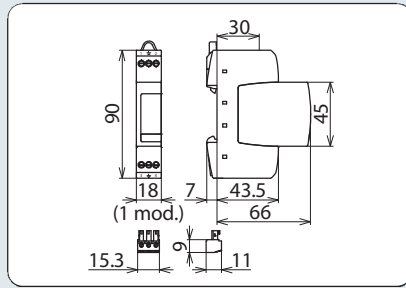
Accessory for DEHNrail modular

Protection Module for DEHNrail M 2P

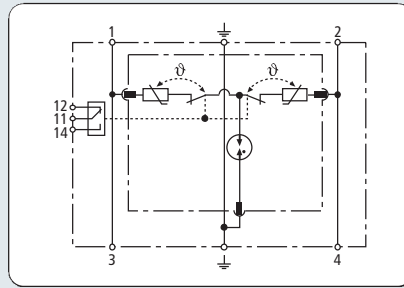
Protection module with integrated Y protection circuit



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 part and plug-in protection module; with floating remote signalling contact

- 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

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 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
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				

Surge Arresters Type 3

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





- 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

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.

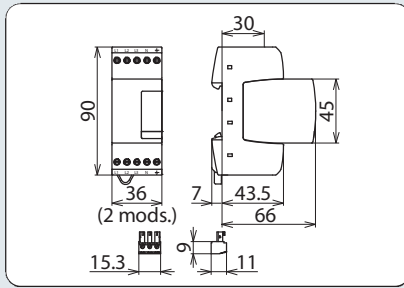
The new module locking system of the DEHNrail M family is unique for surge protective devices. It fixes the protection modules to the base part. Neither vibrations during transport nor the electrodynamic forces of discharge can loosen the connection.

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.

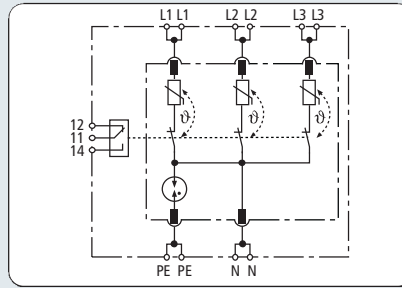
Apart from the standard visual indication with green and red indicator flags, DEHNrail M 4P ... FM devices feature a three-pole remote signalling terminal. With its floating changeover contact, the remote signal can be used as a break or make contact according to the particular circuit concept.



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





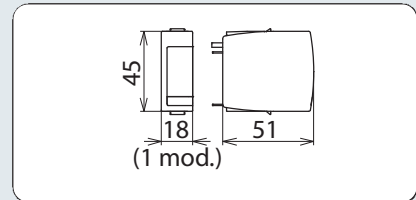
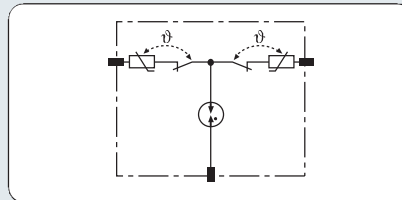
- High discharge capacity due to powerful zinc oxide varistor/spark gap combination
- High reliability due to "Thermo Dynamic Control" disconnecter with dual monitoring
- Energy coordination with other arresters of the Red/Line product family
- Easy replacement of protection modules without tools due 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

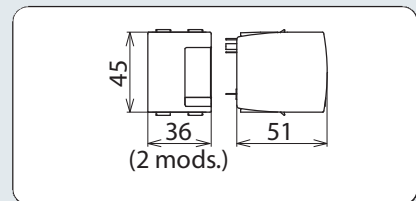
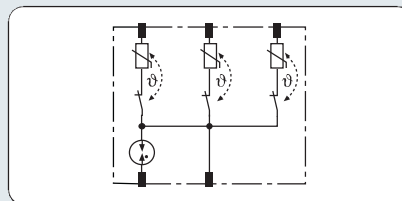
Basic circuit diagram of a DR MOD protection module

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

Surge Arresters Type 3

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

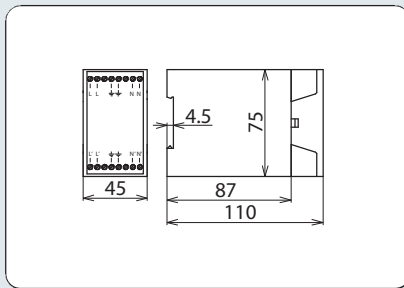
Type	DR MOD 4P 255
Part No.	953 020
Nominal discharge current (8/20 μs) (I _n)	3 kA
Total discharge current (8/20 μs) [L+N-PE] (I _{total})	8 kA
Max. continuous operating a.c. voltage (U _c)	255 V
Max. continuous operating d.c. voltage (U _c)	255 V

- 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

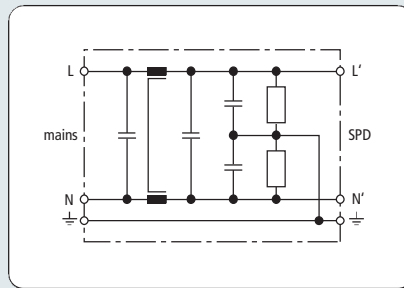


The NF 10 mains filters ideally complements surge protective devices for industrial terminal equipment. The DIN rail mounted mains filters are ideally suited for installation downstream of surge protective devices (e.g. DEHNrail M 2P 255). In addition to surge protection, protection against balanced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

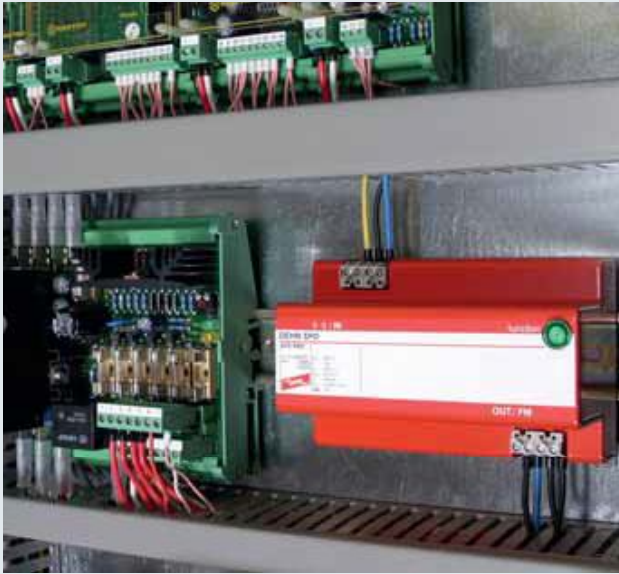


Basic circuit diagram NF 10



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)	$\leq 3,5$ 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



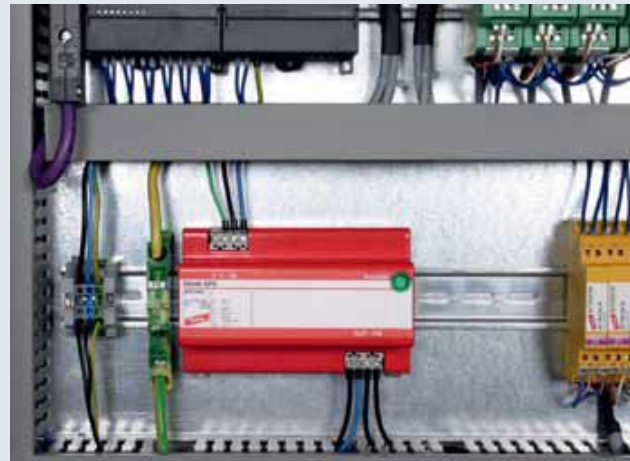
For protecting the power supply circuit of industrial electronics equipment (e.g. programmable logic controls (PLCs)) against transient surges and high-frequency interference voltages. For installation in conformity with the lightning protection zones concept at the boundaries from 1 – 2 and higher.

- 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

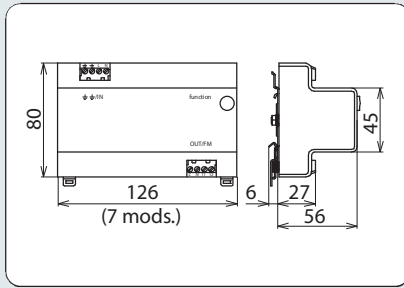
SPS Protector: Two-pole surge arrester with interference suppressor filter

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

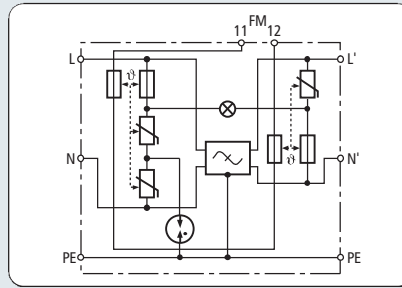
enclosure of the SPS Protector ensures that high-frequency interferences are discharged without interfering with other devices in the immediate vicinity. The compact design of the SPS Protector already houses the proven disconnecter. In case of overload, it disconnects the arrester from the mains without 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



Surge arrester with interference suppressor filter

- 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

Type	SPS PRO
Part No.	912 253
SPD according to EN 61643-11	Type 3
SPD according to 61643-11-11	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)	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



- 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

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:

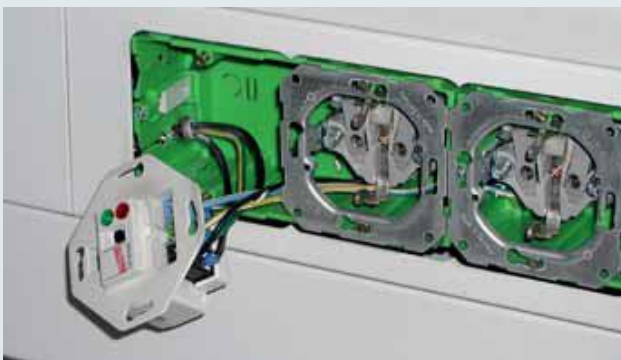
- Acoustic fault indication,
- Test function,
- Muting of the acoustic signal.



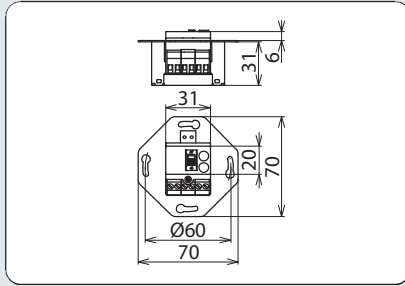
DEHNsafe surge arresters are covered by a triple TAE cover from any switch range manufacturer, thus ideally adapting to any socket outlet design.

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

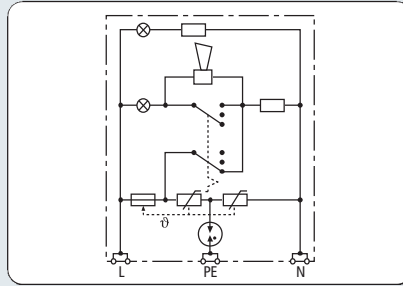
the circuit to be protected in case of overload. They feature a green and red LED for visual inspection.



Type 3 Surge Arresters



Dimension drawing DSA 230 LA



Basic circuit diagram DSA 230 LA



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

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

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 _N)	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] (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





- Surge protection with monitoring device and disconnecter
- Maximum safety due to distinctive Y protection circuit
- Visual operating state (green) and fault indication (red)
- With retaining ring (diameter of 60 mm) for installation in switch boxes with a diameter of 60 mm and a depth of 40 mm

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.

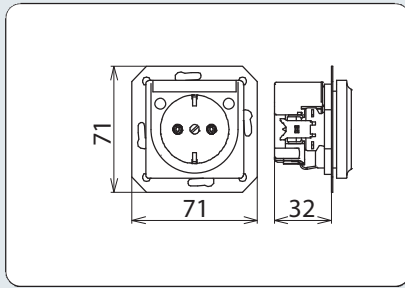
NSM Protector: Earthed socket outlet with integrated surge protection

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 disconnecter which disconnects overloaded surge arresters without interrupting the supply circuit. The low voltage protection level as well as the comprehensive

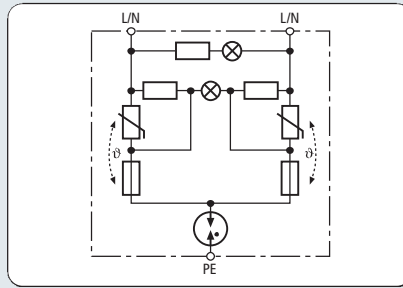
common and differential mode protection are typical of the devices of the NSM Protector family. The distinctive Y protective circuit ensures safety even if the phase and neutral conductors in final circuits cannot be identified. The integrated disconnecter ensures reliability of devices and installations. 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

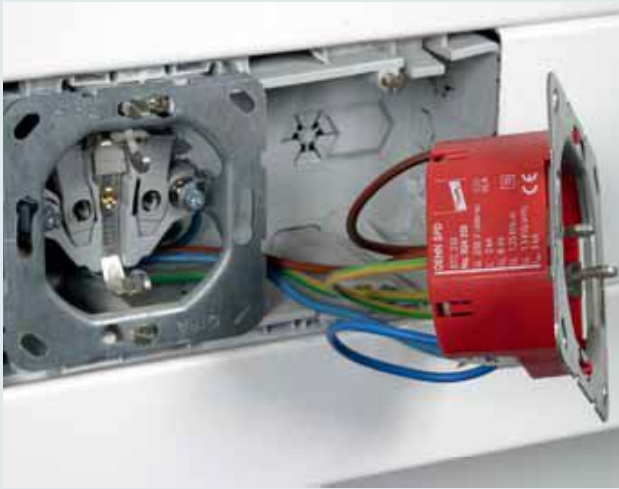
Accessory for NSM Protector

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





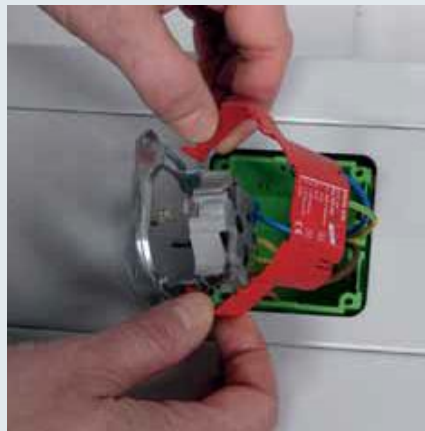
For protecting electronic devices against surges. For use with standard earthed socket outlets. For installation in conformity with the lightning protection zones concept at the boundaries from 1 – 2 and higher.

STC 230: Snap-on module for standard earthed socket outlets

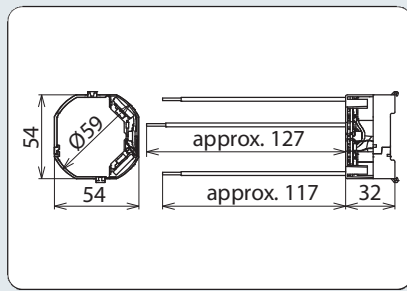
The well received STC surge protection module can be fitted inconspicuously. Being a two-pole surge arrester, the module can be installed on the rear side of standard earthed socket outlets. The STC surge protection module thus adapts to every type of socket outlet. The plastic snap-on retaining ring 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

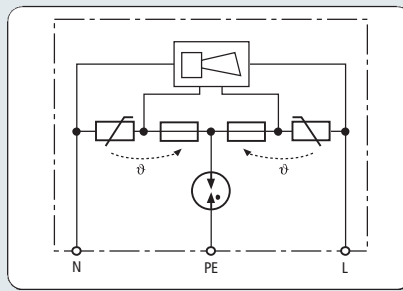
socket outlets. In addition to a thermal disconnecter, the protective device features an acoustic fault indication. As the surge protection module is installed in parallel to the socket outlet, the power supply of the connected consumers remains uninterrupted, even if the surge arrester is overloaded.



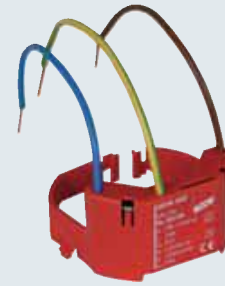
Type 3 Surge Arresters



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 disconnector	acoustic signal on



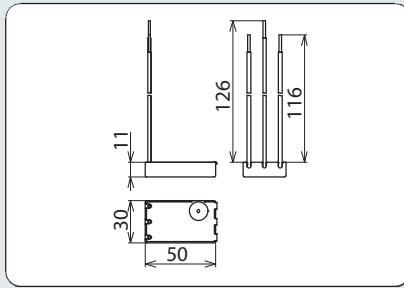
- Two-pole surge arrester with monitoring device and disconnecter
- Enhanced safety due to distinctive Y protection circuit
- Acoustic fault indication
- Compact design
- For use in flush-mounted systems, cable ducts and flush-type boxes

For protecting electronic systems 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.

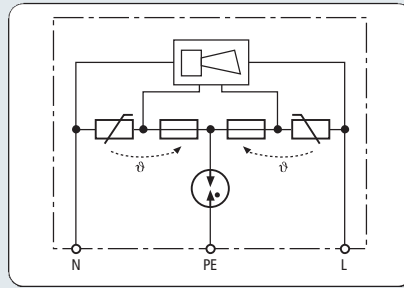
- DEHNflex M:** Compact design; for use in cable duct systems and flush-type boxes
- DEHNflex A:** For use in any cable duct systems or flush-type boxes; with test function
- DEHNflex D:** Like DEHNflex A, but for series connection of several socket outlets

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



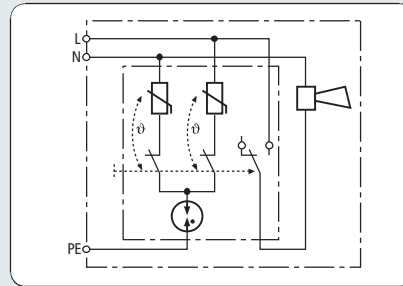
Basic circuit diagram DFL M



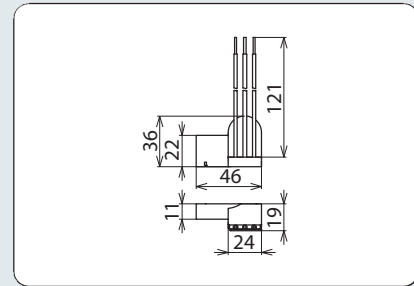
- Acoustic fault indication
- Compact design
- For use in flush-mounted systems, cable ducts and flush-type boxes

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 _{ms}
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

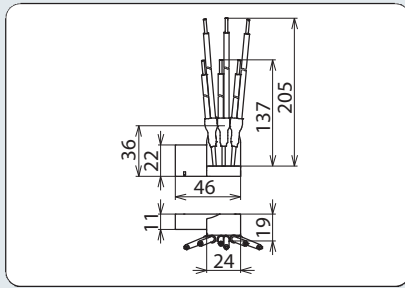


Dimension drawing DFL A

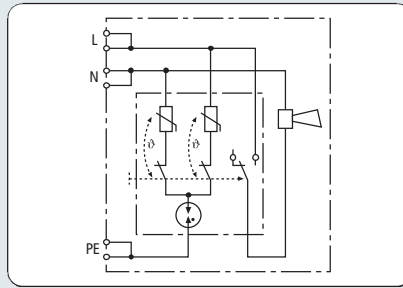
- Acoustic fault indication
- Compact design
- For use in flush-mounted systems, cable ducts and flush-type boxes

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



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_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	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



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.

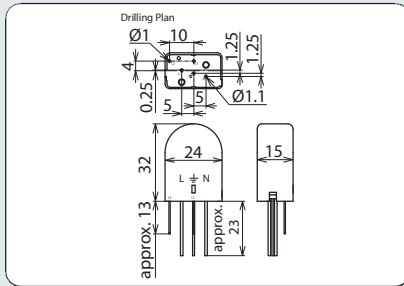
- Two-pole surge arrester with monitoring device and disconnecter
- Complete surge protective circuit for devices with a.c. voltage power supply
- Enhanced safety due to distinctive Y protective circuit
- Floating remote signalling contact (break contact) with test option for fault indicator
- For installation onto printed circuit boards

VC 280 2: Mains module with surge protection for installation in the terminal device to be protected

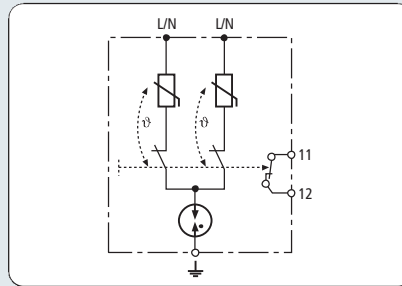
VC 280 2 surge arresters are small, but no less complex. The two-pole module incorporates a distinctive Y protective circuit, a monitoring and disconnection device as well as a floating remote signalling contact, thus ensuring compact dimensions and maximum safety. The surge arresters

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



Mains module with surge protection and floating break contact for installation into terminal equipment to be protected

- 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

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



- 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

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

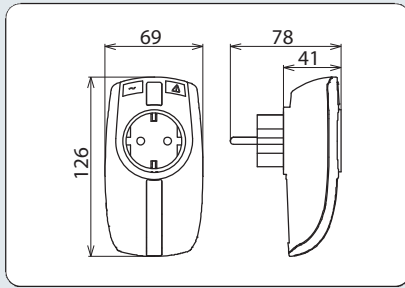
green and red LEDs indicate the operating state of the surge protective devices.

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.

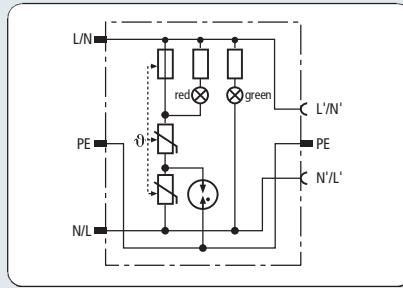
Note:

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



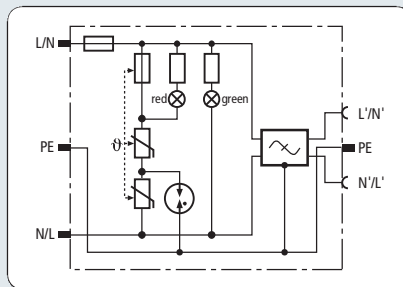
Basic circuit diagram DPRO 230



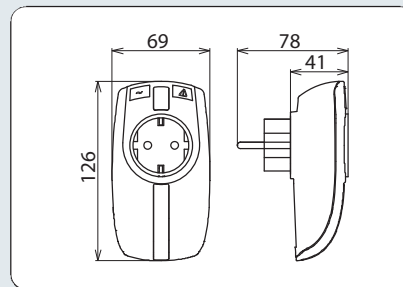
Adapter with integrated surge protection

- Surge protection with monitoring device and disconnecter
- Visual operating state (green) and fault indication (red)
- Enhanced safety due to distinctive Y protective circuit

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_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	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_N)	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_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	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

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

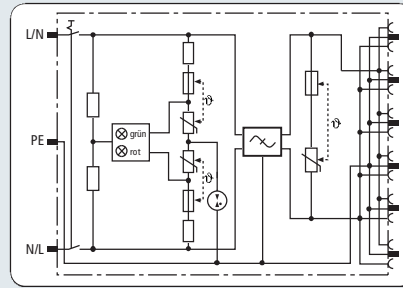
SFL PRO 6X 19": Surge protective multiple socket outlet with mains filter for 482.6 mm (19 inch) data cabinets



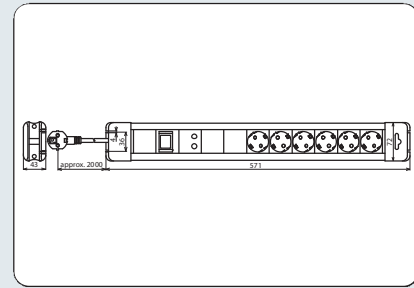
The SFL Protector surge arrester complements the wide range of Red/Line surge protective devices. The combination of surge protection and mains filter makes the six-way socket outlet a powerful device for protecting electronic consumers in final electrical circuits. The harmonised surge protection and 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

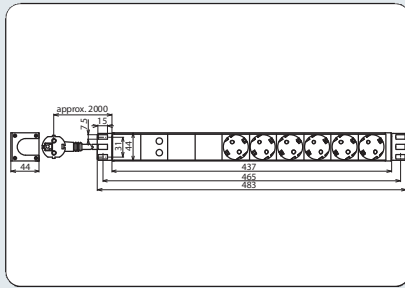


Dimension drawing SFL PRO 6X

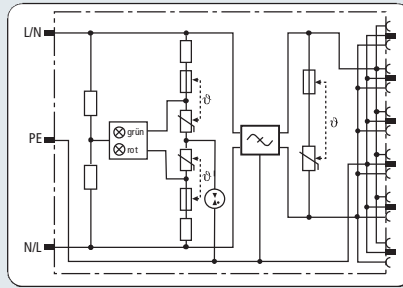
- Surge protection with monitoring device and disconnecter
- Interference suppressor filter
- Visual operating state (green) and fault indication (red)

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_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 (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



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_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 (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

