

Overvoltage protection for energy distribution systems

Class I with discharger	I.2	- I.5
Class I with high-power varistores	I.6	- I.7
Class II with varistors	I.8	- I.17
Class III with varistors	I.18	- I.23
Class III adapter plug (Schuko)	I.24	- I.25

Overvoltage protection for measurement and control engineering

Overview	I.26	- I.29
3-step or 1-step protection, tension clamp connection	I.30	- I.37
3-step protection, screw connection	I.38	- I.49
1-step protection, pluggable circuit card	I.50	- I.59
Single components with arc suppression circuit	I.60	- I.63

Overvoltage protection for data interface

Overview	I.64	- I.65
For telecommunication interface	I.66	- I.67
For data interface	I.68	- I.71

Line Filter

Line Filter	I.72	- I.74
-------------	------	--------

Overvoltage protection for energy distribution systems

Overvoltage protection class I with discharger



Lightning conductors with discharger for lightning protection equipotential bonding Overvoltage protection class I (B arrester)

According to the requirements of class B (DIN VDE 0675 part 6 (draft 11.89)/A1:3/96) and class 1 acc. to IEC 61643-1 (1/02), the lightning conductor at the transfer from interface 0 to 1 (acc. to IEC 1312-1) is used as lightning protection equipotential bonding. In combination with several lightning protectors, the overvoltage protection is used in the mains form TN, TT and IT.

When lightning strikes, the triggered air gap protector provides the necessary equipotential bonding between the buildings lightning protection and the earthing system, of the power supply.

The use of an air gap protector complies with the requirements for verifiability of overvoltage protection devices in class B from the VDEW directive (1st edition 1998).

Electrical connection for building installation

The lightning conductor PU 1 TSG 35 kA class I is connected between the outer conductors (L1, L2, L3) and the N/PE. The N-PE discharger is produced with a Pu 1 TS G 50 kA. The shortest possible leads should be used for this purpose.

The triggered and sealed PU 1 TSGs are snapped onto a mounting rail TS35 in the switch cabinet or installation distributors. The maximum tolerable operating voltage U_c is 260 Vac. Decoupling from downstream arrestors of class II (C) is not necessary because triggered air gap protectors with low operating voltage are used.

Please comply with the installation instructions.

Electrical connection for industrial installations

The lightning conductor PU 1 TSG+ 50 kA / 330 V or 440 V class I is connected between the outer conductors (L1, L2, L3) and the N/PE. The N-PE discharger is produced with a PU 1 TS G 50 kA. The shortest possible leads should be used for this purpose.

The triggered and sealed PU 1 TSG+ 50 kA units are snapped onto a mounting rail TS35 in the switch cabinet or installation

distributors. There must be a safety distance of min. 10 cm to live parts because of the emissions caused when the air gap protector is triggered.

The maximum tolerable operating voltage U_c is 330 or 440 Vac. Decoupling from downstream arrestors of class II (C) for 470 V is not necessary because triggered air gap protectors with low reaction voltage are used.

Please comply with the installation instructions.

Functional checks, maintenance and approval

PU 1 TSG and PU 1 TSG+ overvoltage protection modules are checked by visual control. A function indicator which lights up when 120 Vac is reached reports failure of the electronic ignition component, as well as mains voltage failure. Frequent checks are advised during thunderstorm seasons.

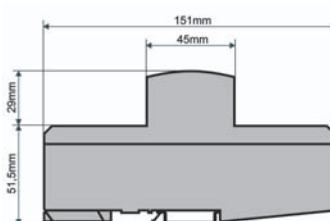
The triggered air gap protectors achieve a very low protection level of less than 1.5 kV for very high leakage currents. The arrester PU1TSG is to be protected by fuses of max. 125 A gL depending on the conductor cross-section; max. 250 A gL for PU 1 TSG+.

The connection is rated for the following cross-sections:

- solid: 10...35 mm²,
- stranded: 10...25 mm².

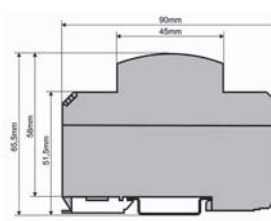
The operating temperature range is from –40 °C ... +85 °C.

The PU1TSG lightning conductors are certified to UL and KEMA so that they can be used worldwide.



**Dimensioned drawing
PU 1 TSG+**

Width 36 mm

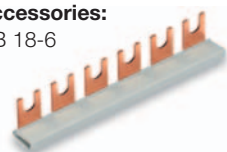


**Dimensioned drawing
PU 1 TSG+**

Width 18 mm

Accessories:

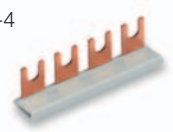
QB 18-6



BZ 18
L1, L2, L3, N, PE



QB 18-4



BZ 18
PE, PE, PE, PE



Overvoltage protection for energy distribution systems

Class I with triggered spark gap

Class I lightning arrester

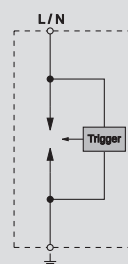
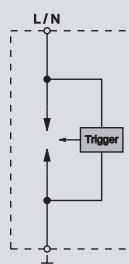
PU 1TSG+ 50kA/0.9kV-330V

for use in industrial networks



PU 1 TSG+ 50kA/1.5kV-440V

for use in industrial networks



Technical data

Technical specification

Rated voltage U_n (AC)
Operating voltage U_c (ac), max.
Requirement class acc. to IEC 61643-1
lightening test voltage imp (10/350 μ s)
Specific energy, per path
Short-circuit current extinction without back-up fuse
Short-circuit strength at max. back-up fuse
Response time
Back-up fuse, max.
Protection level Up (typ.)
Optical function indicator
Colour
Oper. temp. min./Oper. temp. max.
Stor. temp. min./Storage temp., max.
Approvals

330V
330V
class I
50 kA by charging 25As
625kJ/ Ω
50 kA / 50 Hz
25 kAeff.
< 150 ns
250 A gl
0.90kV
LED green
black
-40°C/85°C
-40°C/85°C
cURus, File E198315
KEMA in preparation

440V
440V
class I
50 kA by charging 25As
625kJ/ Ω
50 kA / 50 Hz
25 kAeff.
< 150 ns
250 A gl
1.50kV
LED green
black
-40°C/85°C
-40°C/85°C
cURus, File E198315
KEMA in preparation

Dimensions

Clamping range (rating- / min. / max.) mm²
Length x width x height mm

35 / 10 / 35
150 x 35.0 x 80

35 / 10 / 35
150 x 35.0 x 80

Information

Ordering data

Version

Type	Qty.	Order No.
PU1 TSG Plus 330 VAC 0,9kV	1	8561220000

Type	Qty.	Order No.
PU1 TSG Plus 440 VAC 1,5kV	1	8561250000

Information

Cross-connection QB 18-4 order no. 8619440000
Cross-connection QB 18-6 order no. 8619450000

Cross-connection QB 18-4 order no. 8619440000
Cross-connection QB 18-6 order no. 8619450000

Accessories

Information

Designation
BZ18, L1 L2 L3 N PE order no. 8619460000

Designation
BZ18, PE PE PE PE PE order no. 8619470000

Articles with coloured order number are kept permanently in stock at the central warehouse in Germany.
Delivery times see page X.2

Overvoltage protection for energy distribution systems

Class I with triggered spark gap

Class I lightning arrester

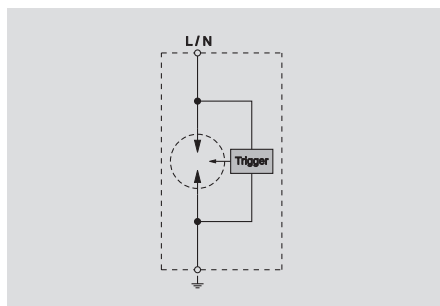
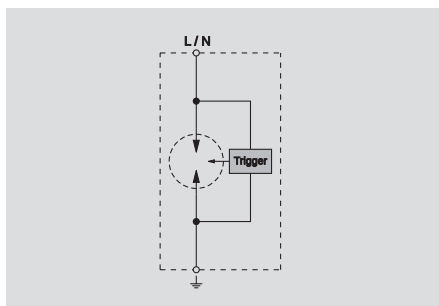
PU 1 TSG 35kA/0.9kV-260V

for use in building networks



PU 1 TSG 50kA/1.5kV-260V

for use in building networks



Technical data

Technical specification

Rated voltage U_n (AC)
Operating voltage U_c (ac), max.
Requirement class acc. to IEC 61643-1
lightening test voltage imp (10/350 μ s)
Specific energy, per path
Short-circuit current extinction without back-up fuse
Short-circuit strength at max. back-up fuse
Response time
Back-up fuse, max.
Protection level Up (typ.)
Optical function indicator
Colour
Oper. temp. min./Oper. temp. max.
Stor. temp. min./Storage temp., max.
Approvals

230Vac
260V
class I
35 kA by charging 17.5As
305kJ/ Ω
3 kA / 50 Hz
25 kAeff
< 1 μ s
125 A gl
0.90kV
LED green
grey
-40°C/85°C
-40°C/85°C
cURus, File E198315
KEMA

230Vac
260V
class I
50 kA by charging 25As
625kJ/ Ω
500 A / 50 Hz
25 kAeff
< 1 μ s
125 A gl
1.50kV
grey
-40°C/85°C
-40°C/85°C
cURus, File E198315
KEMA

Dimensions

Clamping range (rating- / min. / max.) mm²
Length x width x height mm

35 / 10 / 35
91 x 18.0 x 63

35 / 10 / 35
91 x 18.0 x 63

Information

Ordering data

Version

Type	Qty.	Order No.
PU 1 TSG 35kA / 0,9kV	1	8561260000

Type	Qty.	Order No.
PU 1 TSG 50kA / 1,5kV	1	8561230000

Information

Cross-connection QB 18-4 order no. 8619440000
Cross-connection QB 18-6 order no. 8619450000

Cross-connection QB 18-4 order no. 8619440000
Cross-connection QB 18-6 order no. 8619450000

Accessories

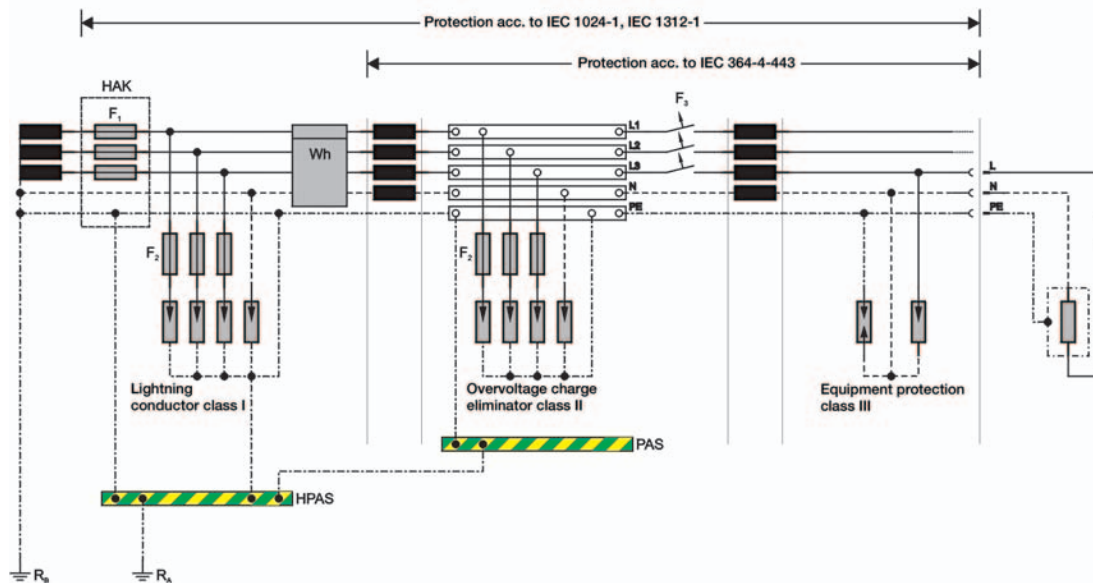
Information

Designation
BZ18, L1 L2 L3 N PE order no. 8619460000

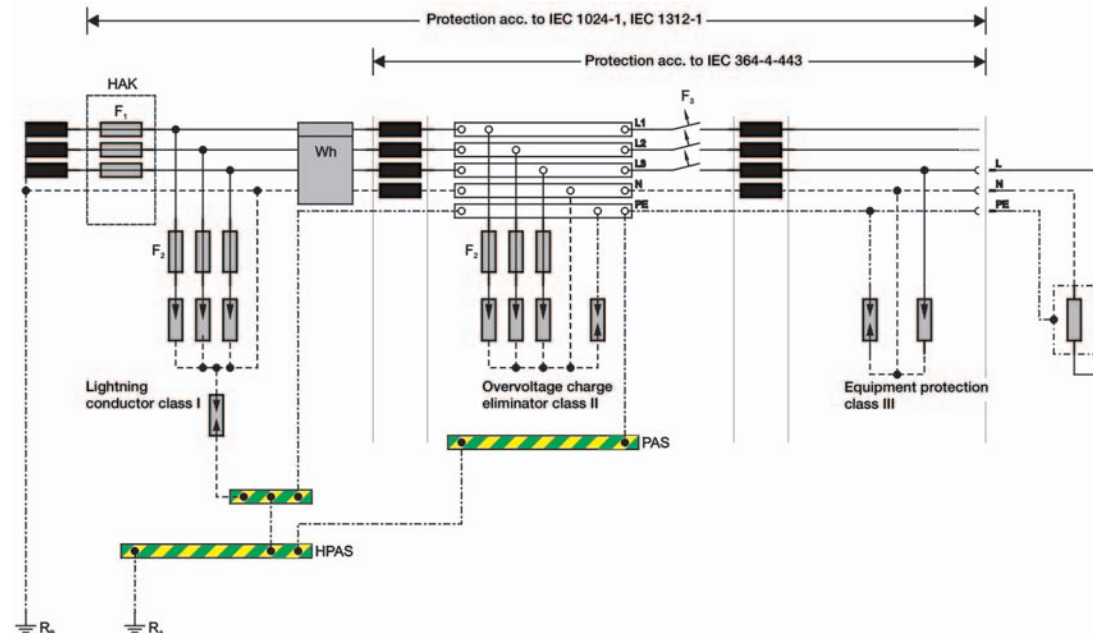
Designation
BZ18, PE PE PE PE PE Order No. 8619470000

Overvoltage protection for energy distribution systems

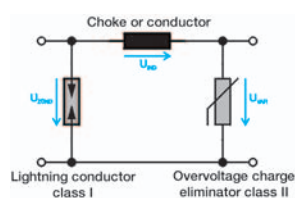
Protection in the TN-S-system



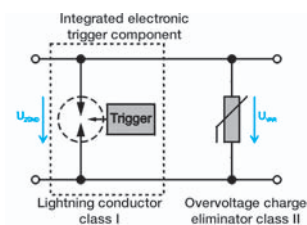
Protection in the TT system



In contrast to normal air gap protectors, Weidmüller's air gap protectors PU 1 TSG+ and PU 1 TSG work with electronic triggering. This triggers the air gap protector so early that the following arrester is relieved (PucX). Decoupling to downstream arresters in class II (C) is not necessary because triggered air gap protectors work with low operating voltage.



One difference between PU 1 TSG+ and PU1 TSG is the follow current interruption. PU 1 TSG+ distributes the arc voltage to several chambers; as soon as the sum of the arc voltages of the different chambers is higher than the current mains voltage, the follow current is interrupted. In PU1 TSG, the follow current is interrupted in the next zero crossing of the mains voltage.



Overvoltage protection for energy distribution systems

Class I overvoltage protection with high-power varistors

Lightning conductors with varistors for lightning protection equipotential bonding

Class I overvoltage protection (B arrestors)

Weidmüller's PU B overvoltage protection is designed for use in lightning protection equipotential bonding systems to DIN VDE 0185 part 1 (11/82). PUB is a class I lightning conductors (B arrestor) acc. to DIN VDE 0675, part 6 (11/89), IEC 61643-1 (2/98), ENV 61024-1 (1/95) and IEC 1312-1 (2/95).

When lightning strikes, the plug-in high-power varistors provide the necessary equipotential bonding between the buildings lightning protection system, and the earthing system of the power supply.

Electrical connection

The lightning conductor PU B class I is connected between the outer conductors (L1, L2, L3) respectively the neutral conductor, the earth of the consumer installation and also the earthing rail of the distributor. The shortest possible leads should be used for this purpose.

PU B is snapped onto a mounting rail TS35 in the switch cabinet or installation distributors. The maximum tolerable operating voltage U_c is 275 Vac. No inductors are required for decoupling from the downstream class II (C arrestors).

Please comply with the installation instructions.

Checking functions, maintenance and approval

Users check the PUB overvoltage protection modules with a visual inspection. Frequent checks are advised during thunderstorm seasons. The visual check is easy because the varistor is fitted with a thermal disconnecter. If this has been tripped, the colour in the display window changes from green to red. A tripped arrestor can be easily replaced by a qualified technician without having to disconnect any wiring.

The top section of the varistor is coded according to voltage, and integrated in a black plastic housing (PA 6.6) to distinguish class II overvoltage arrestors (C arrestors). This means it is only possible to plug in the right replacement varistor.

These pluggable high-power varistors achieve a very low protection level (less than 2 kV) with very high leakage currents. Depending on the conductor cross-section, the arrestor is to be protected with fuses of up to max. 160 A gl. The use of varistors prevents any kind of emissions from overvoltages.

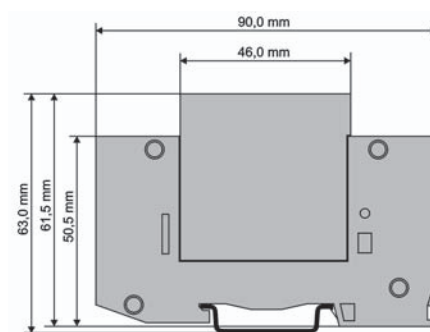


The connection is to be rated to IEC 947-7-1 for the following cross-sections:

- solid: 6...10 mm²,
- stranded: 16...25 mm²,
- flexible: 10...25 mm².

The operating temperature range is –40 to +60°C.

Weidmüller's PU B lightning conductors are certified to UL so that they can be used worldwide.



PU-B dimensions

Width	
PU3B	54 mm
PU3BR	72 mm
PU4B	72 mm
PU4BR	90 mm

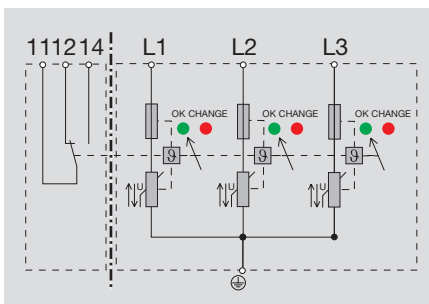
Overvoltage protection for energy distribution systems

Class I with high-power varistors

Class I lightning arrester

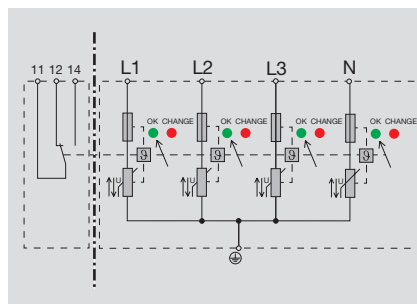
PU 3 B/BR

PU 3 B/BR 230/400Vac



PU 4 B/BR

PU 4 B/BR 230/400Vac



Technical data

Technical specification

Rated voltage U_n (AC)
Operating voltage U_c (ac), max.
Requirement class acc. to IEC 61643-1
lightening test voltage imp (10/350 μ s)
Specific energy, per path
Leakage current, max. (B/20 μ s)
Response time
Back-up fuse, max.
Protection level Up (typ.)
Optical function indicator
Monitoring contact
Design
Colour
Oper. temp. min./Oper. temp. max.
Stor. temp. min./Storage temp., max.
Approvals

230V
275V
class I
20 kA
100kJ/ Ω
100kA
< 25 ns
160 A gl
2000V
green=OK, red=faulty, replace
250V max 1A 1CO
installation housing
black
-40°C/60°C
-40°C/80°C
UL

230V
275V
class I
25 kA
100kJ/ Ω
100kA
< 25 ns
160 A gl
2000V
green=OK, red=faulty, replace
250V max 1A 1CO
installation housing
black
-40°C/60°C
-40°C/80°C
UL

Dimensions

Clamping range (rating- / min. / max.) mm²
Length x width x height mm

Information

Without monit. contact With monit. contact

10 / 6 / 50 10 / 6 / 50
90 x 54.0 x 61 90 x 72.0 x 61

Without monit. contact With monit. contact

10 / 6 / 50 10 / 6 / 50
90 x 72.0 x 61 90 x 90.0 x 61

Ordering data

Version

Without monit. contact
With monit. contact

Type	Qty.	Order No.
PU 3 B 275 VAC	1	8381890000
PU 3 BR 275 VAC	1	8381900000

Type	Qty.	Order No.
PU 4 B 275 VAC	1	8147020000
PU 4 BR 275 VAC	1	8291640000

Information

Accessories

Information

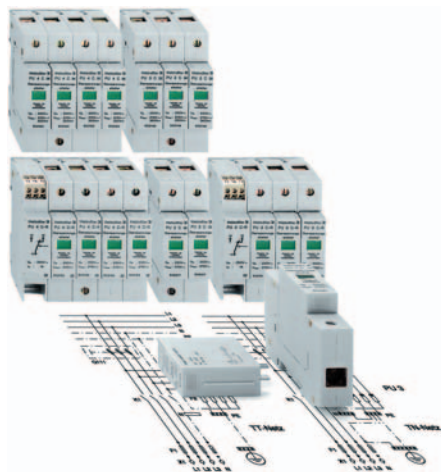
Pluggable spare arrester 275V PU 0 B 8381880000

Pluggable spare arrester 275V PU 0 B 8381880000

Articles with coloured order number are kept permanently in stock at the central warehouse in Germany.
Delivery times see page X.2

Overvoltage protection for energy distribution systems

Overvoltage protection class II with varistors



Overvoltage protection for low voltage consumers and electronic devices

Overvoltage protection class II (C arrestors)

Weidmüller's overvoltage protection type PU C protects low voltage consumers and electronic devices from overvoltage caused by atmospheric discharge (thunderstorms) or switching procedures (transients). PU C corresponds to the requirements of DIN VDE 06 part 6, class C, 11/89, draft, DIN VDE 0675 part 6, A2 10/96, ÖVE SN 60 part 4 and part 1 and IEC 61643-1 (2/98).

Electrical connection

PU C overvoltage is connected with the shortest possible leads between the outer conductors (L1, L2, L3) respectively neutral (N) and the earth of the consumer installation. Avoid routing unprotected leads (e.g. leads to the meter) parallel to protected leads. PU C arrestors are also available for "3+1" circuits.

PU C overvoltage protection is available as compact module, 3 or 4 pole, with up to 100 kV (8/20 μ s), with the PE connections within the modules already connected. Versions are available with the following rated voltages:

- 60 Vac,
- 115/230 Vac,
- 230/400 Vac,
- 470/600 Vac,
- and for "3+1" circuits and
- special types for IT networks.

Checking functions, maintenance and approval

Users check the PU C overvoltage protection modules with a visual inspection. The visual check is easy because the varistor is fitted with a thermal disconnecter. If this has been tripped, the colour in the display window changes from green to red. A tripped arrestor can be easily replaced by a qualified technician without having to disconnect any wiring.

The top section of the varistor is coded according to voltage, and integrated in a pale grey plastic housing (PA 6.6) to distinguish it from class 1 overvoltage arrestors (B arrestors). This means it is only possible to plug in the right replacement varistor.

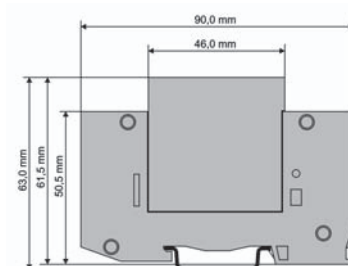
The cross-section of the earth conductor must be min. 10 mm² or half the outer conductor cross-section. The fuses for PU modules are chosen according to cross-section and type of routing. Maximum 125 A gl are allowed.

Weidmüller's PU C lightning conductors are certified to ÖVE SN 60 and UL so that they can be used worldwide.

The connection is to be rated to IEC 947-7-1 for the following cross-sections:

- solid: 6...10 mm²,
- stranded: 16...25 mm²,
- flexible: 10...25 mm².

The operating temperature range is –40 °C ... +60 °C.



PU-C dimensions

Width	
PU1C	18 mm
PU2C	36 mm
PU3C	54 mm
PU3CR, PU4C	72 mm
PU4CR	90 mm



Monitoring unit

Overvoltage protection for energy distribution systems

Class II with varistors

Class II overvoltage arrester

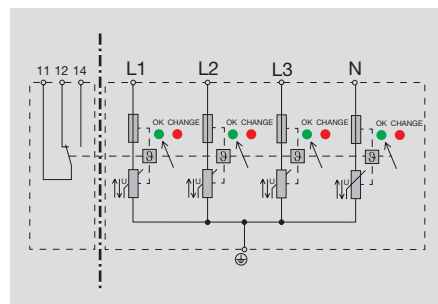
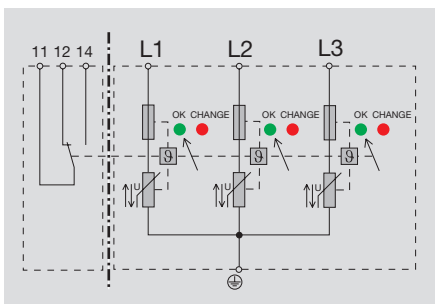
PU 3 C+CR 230 V

PU 3 C / PU 3 CR 230/400Vac



PU 4 C+CR 230 V

PU 4 C / PU 4 CR 230/400Vac



Technical data

Technical specification

Rated voltage U_n (AC)
Operating voltage U_c (ac), max.
Requirement class acc. to IEC 61643-1
Rated leakage current (8/20 μ s)
Limiting leakage current (8/20 μ s)
Leakage current, max. (8/20 μ s)
Response time
Back-up fuse, max.
Protection level U_p (typ.)
Optical function indicator
Monitoring contact
Design
Colour
Oper. temp. min./Oper. temp. max.
Stor. temp. min./Storage temp., max.
Approvals

230V
280V
class II
20 kA
40kA
100kA
< 25 ns
125 A gl
1300V
green = OK; red = arrester faulty, replace
250V max 1A 1CO
installation housing
grey
-40°C/60°C
-40°C/80°C
UL, ÖVE SN 60, SABS

230V
280V
class II
20 kA
40kA
100kA
< 25 ns
125 A gl
1300V
green = OK; red = arrester faulty, replace
250V max 1A 1CO
installation housing
grey
-40°C/60°C
-40°C/80°C
UL, ÖVE SN 60, SABS

Dimensions

Clamping range (rating- / min. / max.) mm²
Length x width x height mm

Without monit. contact	Without monit. contact
10 / 6 / 50	10 / 6 / 50
90 x 54.0 x 61	90 x 72.0 x 61

Without monit. contact	Without monit. contact
10 / 6 / 50	10 / 6 / 50
90 x 72.0 x 61	90 x 91.0 x 61

Information

Ordering data

Version

Without monit. contact
Without monit. contact

Type	Qty.	Order No.
PU 3 C 275 VAC	1	8021490000
PU 3 CR 275 VAC	1	8021510000

Type	Qty.	Order No.
PU 4 C 275 VAC	1	8021500000
PU 4 CR 275 VAC	1	8021520000

Information

Accessories

Information

Pluggable spare arrester 275V PU 0 B 8339510000

Pluggable spare arrester 275V PU 0 B 8339510000

Articles with coloured order number are kept permanently in stock at the central warehouse in Germany.
Delivery times see page X.2

Overvoltage protection for energy distribution systems

Class II with varistors

Class II overvoltage arrester

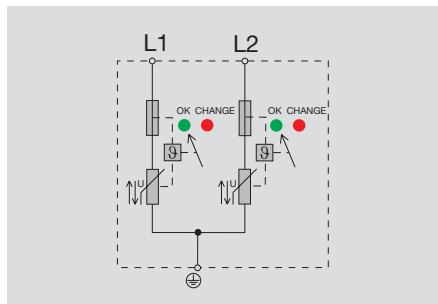
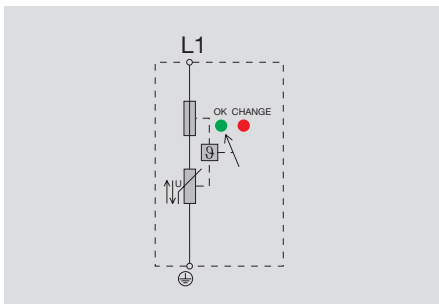
PU 1 C 230 V

PU 1 C



PU 2 C 230 V

PU 2 C



Technical data

Technical specification

Rated voltage U_n (AC)
Operating voltage U_c (ac), max.
Requirement class acc. to IEC 61643-1
Rated leakage current (8/20 μ s)
Limiting leakage current (8/20 μ s)
Leakage current, max. (8/20 μ s)
Response time
Back-up fuse, max.
Protection level U_p (typ.)
Optical function indicator
Monitoring contact
Design
Colour
Oper. temp. min./Oper. temp. max.
Stor. temp. min./Storage temp., max.
Approvals

230V
280V
class II
20 kA
40kA
40kA
< 25 ns
125 A gl
1300V
green = OK; red = arrester faulty, replace
installation housing
grey
-40°C/60°C
-40°C/80°C
UL, ÖVE SN 60, SABS

230V
280V
class II
20 kA
40kA
75kA
< 25 ns
125 A gl
1300V
green = OK; red = arrester faulty, replace
250V max 1A 1CO
installation housing
grey
-40°C/60°C
-40°C/80°C
UL, ÖVE SN 60, SABS

Dimensions

Clamping range (rating- / min. / max.) mm²
Length x width x height mm

Information

Without monit. contact

10 / 6 / 50
90 x 18.0 x 61

Without monit. contact

10 / 6 / 50
90 x 36.0 x 61

Without monit. contact

10 / 6 / 50
90 x 54.0 x 61

Ordering data

Version

Without monit. contact

Type	Qty.	Order No.
PU 1 C 275 VAC	1	8102610000

Type	Qty.	Order No.
PU 2 C 275 VAC	1	8098170000
PU 2CR 230/400VAC		8425240000

Information

Accessories

Information

Pluggable spare arrester 275V PU 0 B 8339510000

Pluggable spare arrester 275V PU 0 B 8339510000

Overvoltage protection for energy distribution systems

Class II with varistors

Class II overvoltage arrester

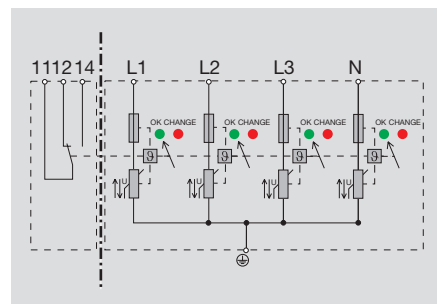
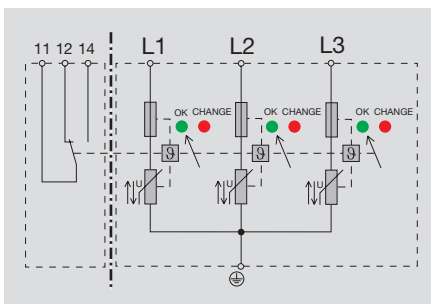
PU 3 C+CR 385 V

PU 3 C / PU 3 CR (according to Ö-Norm 8001 par. 18)



PU 4 C+CR 385 V

PU 4 C / PU 4 CR (according to Ö-Norm 8001 par. 18)



Technical data

Technical specification

Rated voltage U_n (AC)
Operating voltage U_c (ac), max.
Requirement class acc. to IEC 61643-1
Rated leakage current (8/20 μ s)
Limiting leakage current (8/20 μ s)
Leakage current, max. (8/20 μ s)
Response time
Back-up fuse, max.
Protection level U_p (typ.)
Optical function indicator
Monitoring contact
Design
Colour
Oper. temp. min./Oper. temp. max.
Stor. temp. min./Storage temp., max.
Approvals

230V
385V
class II
20 kA
40kA
100kA
< 25 ns
125 A gl
1500V
green=OK, red=faulty, replace
250V max 1A 1CO
installation housing
grey
-40°C/60°C
-40°C/80°C

230V
385V
class II
20 kA
40kA
100kA
< 25 ns
125 A gl
1500V
green=OK, red=faulty, replace
installation housing
grey
-40°C/60°C
-40°C/80°C

Dimensions

Clamping range (rating- / min. / max.) mm²
Length x width x height mm

Without monit. contact	With monit. contact
10 / 6 / 50	10 / 6 / 50
90 x 54.0 x 61	90 x 72.0 x 61

Without monit. contact	With monit. Contact
10 / 6 / 50	10 / 6 / 50
90 x 72.0 x 61	90 x 91.0 x 61

Information

Ordering data

Version

Without monit. contact
With monit. contact

Type	Qty.	Order No.
PU 3C 385VAC	1	8197930000
PU 3 CR 385 VAC	1	8380730000

Type	Qty.	Order No.
PU 4 C 385 VAC	1	8601280000
PU 4 CR 385 VAC	1	8494040000

Information

Accessories

Information

Pluggable spare arrester 385V PU 0 C 8328670000

Pluggable spare arrester 385V PU 0 C 8328670000

Articles with coloured order number are kept permanently in stock at the central warehouse in Germany.
Delivery times see page X.2

Overvoltage protection for energy distribution systems

Class II with varistors

Class II overvoltage arrester

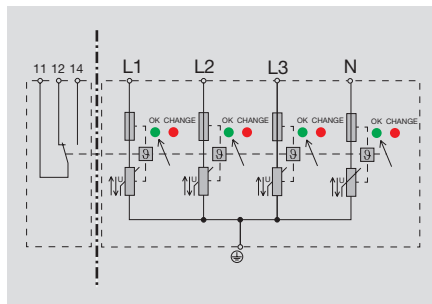
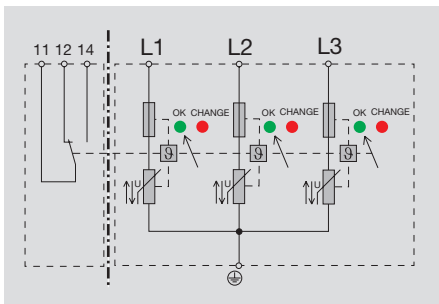
PU 3 C 115 V

PU 3 C / PU 3 CR 115/230Vac



PU 4 C 115 V

PU 4 C / PU 4 CR 115/230Vac



Technical data

Technical specification

Rated voltage U_n (AC)
Operating voltage U_c (ac), max.
Requirement class acc. to IEC 61643-1
Rated leakage current (8/20 μ s)
Limiting leakage current (8/20 μ s)
Leakage current, max. (8/20 μ s)
Response time
Back-up fuse, max.
Protection level U_p (typ.)
Optical function indicator
Monitoring contact
Design
Colour
Oper. temp. min./Oper. temp. max.
Stor. temp. min./Storage temp., max.
Approvals

115V
130V
class II
20 kA
40kA
100kA
< 25 ns
125 A gl
800V
LED green=OK, LED red=faulty, replace
250V max 1A 1CO
installation housing
grey
-40°C/60°C
-40°C/80°C
UL

115V
130V
class II
20 kA
40kA
100kA
< 25 ns
125 A gl
800V
LED green=OK, LED red=Faulty, replace
250V max1A 1CO
installation housing
grey
-40°C/60°C
-40°C/80°C
UL

Dimensions

Clamping range (rating- / min. / max.) mm²
Length x width x height mm

Without monit. contact	Without monit. contact
10 / 6 / 50	10 / 6 / 50
90 x 54.0 x 61	90 x 72.0 x 61

Without monit. contact	Without monit. contact
10 / 6 / 50	10 / 6 / 50
90 x 72.0 x 61	90 x 90.0 x 61

Information

Ordering data

Version

Without monit. contact
Without monit. contact

Type	Qty.	Order No.
PU 3 C 130 VAC	1	8291660000
PU 3 CR 130 VAC	1	8291680000

Type	Qty.	Order No.
PU 4 C 130 VAC	1	8291670000
PU 4 CR 130 VAC	1	8291690000

Information

Accessories

Information

Pluggable spare arrester 130V PU 0 C 8432430000

Pluggable spare arrester 130V PU 0 C 8432430000

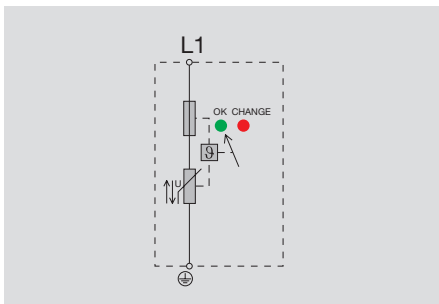
Overvoltage protection for energy distribution systems

Class II with varistors

Class II overvoltage arrester

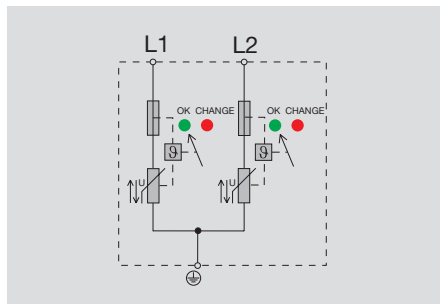
PU 1 C 115 V

PU 1 C



PU 2 C 115 V

PU 2 C



Technical data

Technical specification

Rated voltage U_n (AC)
Operating voltage U_c (ac), max.
Requirement class acc. to IEC 61643-1
Rated leakage current (8/20 μ s)
Limiting leakage current (8/20 μ s)
Leakage current, max. (8/20 μ s)
Response time
Back-up fuse, max.
Protection level U_p (typ.)
Optical function indicator
Monitoring contact
Design
Colour
Oper. temp. min./Oper. temp. max.
Stor. temp. min./Storage temp., max.
Approvals

115V
130V
class II
20 kA
40kA
40kA
< 25 ns
125 A gl
800V
green = OK; red = arrester faulty, replace
installation housing
grey
-40°C/60°C
-40°C/80°C
UL

115V
130V
class II
20 kA
40kA
75kA
< 25 ns
125 A gl
800V
green = OK; red = arrester faulty, replace
installation housing
grey
-40°C/60°C
-40°C/80°C
UL

Dimensions

Clamping range (rating- / min. / max.) mm²
Length x width x height mm

Without monit. contact

10 / 6 / 50
90 x 18.0 x 61

Without monit. contact

10 / 6 / 50
90 x 36.0 x 61

Information

Ordering data

Version

Without monit. contact

Type	Qty.	Order No.
PU 1 C 130 VAC	1	8215820000

Type	Qty.	Order No.
PU 2 C 130 VAC	1	8291650000

Information

Accessories

Information

Pluggable spare arrester 130V PU 0 C 8432430000

Pluggable spare arrester 130V PU 0 C 8432430000

Articles with coloured order number are kept permanently in stock at the central warehouse in Germany.
Delivery times see page X.2

Overvoltage protection for energy distribution systems

Class II with varistors

Class II overvoltage arrester

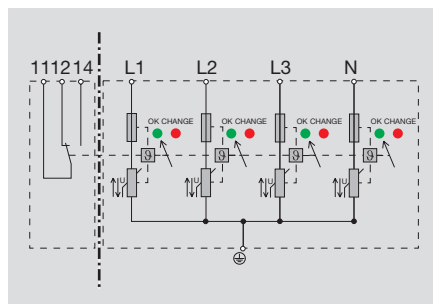
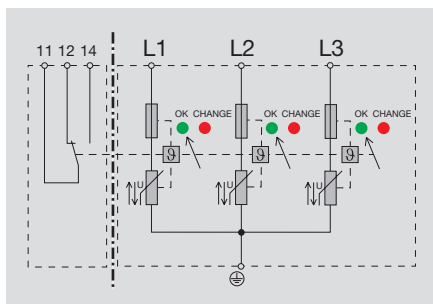
PU 3 C 470 V

PU 3 C / PU 3 CR 470/690Vac



PU 4 C+CR 470 V

PU 4 C / PU 4 CR 470/690Vac



Technical data

Technical specification

Rated voltage U_n (AC)
Operating voltage U_c (ac), max.
Requirement class acc. to IEC 61643-1
Rated leakage current (8/20 μ s)
Limiting leakage current (8/20 μ s)
Leakage current, max. (8/20 μ s)
Response time
Back-up fuse, max.
Protection level U_p (typ.)
Optical function indicator
Monitoring contact
Design
Colour
Oper. temp. min./Oper. temp. max.
Stor. temp. min./Storage temp., max.
Approvals

470V
550V
class II
20 kA
40kA
100kA
< 25 ns
125 A gl
2200V
green = OK; red = arrester faulty, replace
250V max1A 1CO
installation housing
grey
-40°C/60°C
-40°C/80°C
UL

470V
550V
class II
20 kA
40kA
100kA
< 25 ns
125 A gl
2200V
green = OK; red = arrester faulty, replace
250V max 1A 1CO
installation housing
grey
-40°C/60°C
-40°C/80°C
UL

Dimensions

Clamping range (rating- / min. / max.) mm²
Length x width x height mm

Without monit. contact	Without monit. contact
10 / 6 / 10	10 / 6 / 10
90 x 54.0 x 61	90 x 72.0 x 61

Without monit. contact	Without monit. contact
100 / 6 / 50	100 / 6 / 50
90 x 72.0 x 60	90 x 90.0 x 60

Information

Ordering data

Version

Without monit. contact
Without monit. contact

Type	Qty.	Order No.
PU 3 C 550 VAC	1	8451050000
PU 3 CR 550 VAC	1	8451060000

Type	Qty.	Order No.
PU 4 C 550 VAC	1	8291720000
PU 4 CR 550 VAC	1	8451070000

Information

Accessories

Information

Pluggable spare arrester 550V PU 0 C 8451080000

Pluggable spare arrester 550V PU 0 C 8451080000

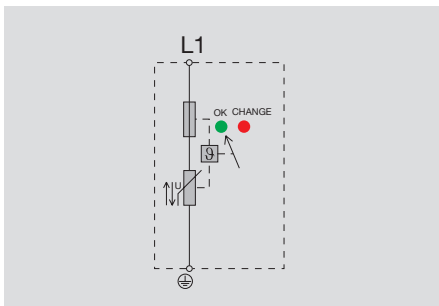
Overvoltage protection for energy distribution systems

Class II with varistors

Class II overvoltage arrester

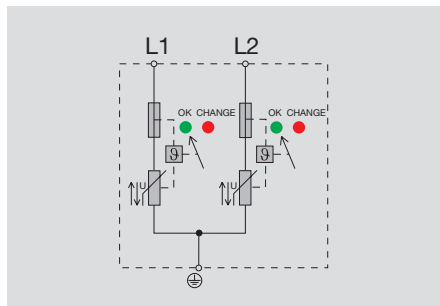
PU 1 C 470 V

PU 1 C



PU 2 C 470 V

PU 2 C



Technical data

Technical specification

Rated voltage U_n (AC)
Operating voltage U_c (ac), max.
Requirement class acc. to IEC 61643-1
Rated leakage current (8/20 μ s)
Limiting leakage current (8/20 μ s)
Leakage current, max. (8/20 μ s)
Response time
Back-up fuse, max.
Protection level U_p (typ.)
Optical function indicator
Monitoring contact
Design
Colour
Oper. temp. min./Oper. temp. max.
Stor. temp. min./Storage temp., max.
Approvals

470V
550V
class II
20 kA
40kA
40kA
< 25 ns
125 A gl
2200V
green = OK; red = arrester faulty, replace
installation housing
grey
-40°C/60°C
-40°C/80°C
UL

470V
550V
class II
20 kA
40kA
75kA
< 25 ns
125 A gl
2200V
green = OK; red = arrester faulty, replace
installation housing
grey
-40°C/60°C
-40°C/80°C
UL

Dimensions

Clamping range (rating- / min. / max.) mm²
Length x width x height mm

Without monit. contact

10 / 6 / 50
90 x 18.0 x 61

Without telecomm. contact

10 / 6 / 50
90 x 36.0 x 61

Information

Ordering data

Version

Without monit. contact

Type	Qty.	Order No.
PU 1 C 550 VAC	1	8291700000

Type	Qty.	Order No.
PU 2 C 550 VAC	1	8291710000

Information

Accessories

Information

Pluggable spare arrester 550V PU 0 C 8451080000

Pluggable spare arrester 550V PU 0 C 8451080000

Articles with coloured order number are kept permanently in stock at the central warehouse in Germany.
Delivery times see page X.2

Overvoltage protection for energy distribution systems

Class II with varistors

Class II overvoltage arrester

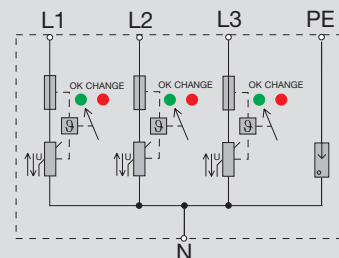
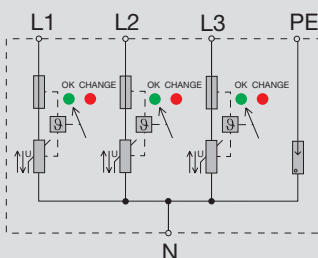
PU 3+1 C 230 V

PU 3+1 C/CR 230/400Vac



PU 3+1 C 385 V

PU 3+1 C 385Vac



Technical data

Technical specification

Rated voltage U_n (AC)
Operating voltage U_c (ac), max.
Requirement class acc. to IEC 61643-1
Rated leakage current (8/20 μ s)
Limiting leakage current (8/20 μ s)
Leakage current, max. (8/20 μ s)
Response time
Back-up fuse, max.
Protection level U_p (typ.)
Optical function indicator
Monitoring contact
Design
Colour
Oper. temp. min./Oper. temp. max.
Stor. temp. min./Storage temp., max.
Approvals

230V
280V
class II
20 kA
40kA
100kA
< 1 μ s
125 A gl
1900V
green=OK, red=faulty, replace
250V max1A 1CO
installation housing
grey/orange
-40°C/60°C
-40°C/80°C

230V
385V
class II
20 kA
40kA
100kA
< 1 μ s
125 A gl
1900V
green=OK, red=faulty, replace
installation housing
grey/orange
-40°C/60°C
-40°C/80°C

Dimensions

Clamping range (rating- / min. / max.) mm²
Length x width x height mm

Without monit. contact	With monit. contact
16 / 6 / 50	16 / 6 / 50
91 x 72.0 x 61	91 x 72.0 x 61

Without monit. contact
10 / 6 / 50
91 x 72.0 x 61

Information

Ordering data

Version

Without monit. contact
With monit. contact

Type	Qty.	Order No.
PU 3+1 C 275 VAC	1	8416370000
PU 3+1C R 230/400VAC	1	8576190000

Type	Qty.	Order No.
PU 3+1 C 385 VAC	1	8616990000

Information

Accessories

Information

Pluggable spare arrester 280V PU 0 C 8339510000

Pluggable spare arrester 385V PU 0 C 8328670000

Overvoltage protection for energy distribution systems

Overvoltage protection class III

Low voltage consumers, small distribution boards and electronic devices

Overvoltage protection class III (D arrestors)

Weidmüller overvoltage protection PU D protects low voltage consumers and electronic devices from overvoltage caused by atmospheric discharge (thunderstorms) or switching procedures (transients). PU D can be mounted in small or storey distribution boards.

PU D corresponds to the requirements of DIN VDE 0675 part 6 class C 11/89, part 6 A2 10/96 and IEC 61643-1 02/98.

Electrical connection

PU D overvoltage protection is installed after the PU C before the device or consumer being protected. It protects circuits up to 16 A, including monitors, for example.

Type PO DS is suitable for installation in devices or cable conduits on site.

Functional checks and maintenance

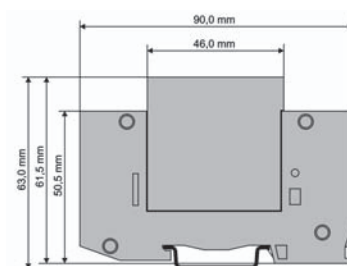
Ageing of the varistors can cause high temperatures, with a risk of fire in low voltage systems. The integrated temperature monitoring automatically disconnects the varistor from the power supply. This is indicated by the activation of the glow lamp. Types PO DS and PU DS are also equipped with a switching contact to issue a corresponding warning.

The back-up fuse depends on the conductor cross-section and type of routing. For PU D arrestors, the current carrying capacity is up to 16 A.

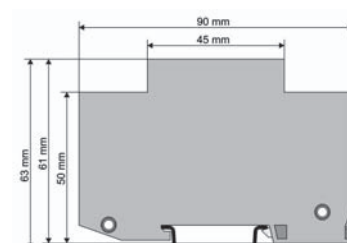
The connection is rated to IEC 947-7-1 for the following cross-sections:

- solid: 0,5 ... 2,5 mm²,
- flexible: 0,5 ... 2,5 mm².

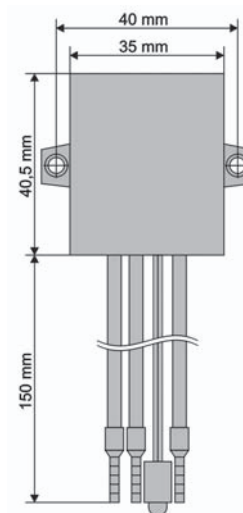
The operating temperature range is –25°C ... +55°C, the storage temperature range is –40°C to +60°C.



**Dimensioned drawing
PU D / PU 3 D**
Width 54 mm



**Dimensioned drawing
PU DS**
Width 18 mm



**Dimensioned drawing
PO DS**
Housing depth 18 mm

Overvoltage protection for energy distribution systems

Class III with varistors

Class III overvoltage arrester

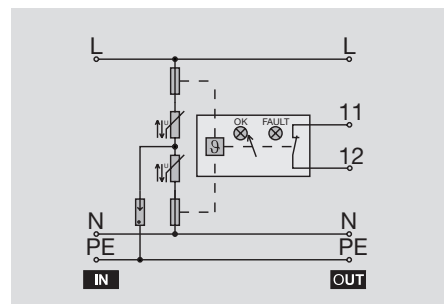
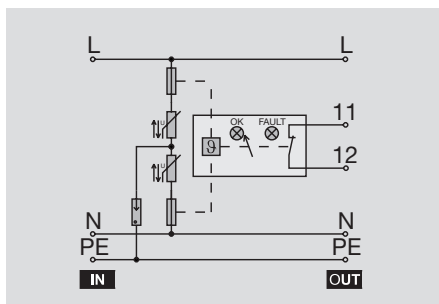
PU D 230Vac 16A

PU D 230Vac 16A



PU D 115Vac 16A

PU D 115Vac 16A



Technical data

Technical specification

Rated voltage U_n (AC)
Operating voltage U_c (ac), max.
Requirement class acc. to IEC 61643-1
Combined pulse U_{oc}
Discharge current per path (8/20 μ s)
Leakage current, max. (8/20 μ s)
Response time
Back-up fuse, max.
Protection level U_p (typ.)
Optical function indicator
Monitoring contact
Design
Colour
Oper. temp. min./Oper. temp. max.
Stor. temp. min./Storage temp., max.
Approvals

230V
275V
class III
4kV
2.50kA
7kA
< 150 ns
16 A
850V
LED green = OK / LED red = faulty
250V 1A
installation housing
grey
-25°C/55°C
-40°C/55°C

115V
130V
class III
4kV
2.50kA
7kA
< 150 ns
16 A
1100V
LED green = OK / LED red = faulty
250V 1A
installation housing
grey
-25°C/55°C
-40°C/55°C

Dimensions

Clamping range (rating- / min. / max.) mm²
Length x width x height mm

screw connection

2.50 / 0.50 / 2.50
91 x 54.0 x 61

screw connection

2.50 / 0.50 / 2.50
91 x 54.0 x 61

Information

Ordering data

Type	Qty.	Order No.
PU D 230V 16A	1	8411930000

Type	Qty.	Order No.
PU D 115Vac 16A	1	8472100000

Information

Accessories

Information

Articles with coloured order number are kept permanently in stock at the central warehouse in Germany.
Delivery times see page X.2

Overvoltage protection for energy distribution systems

Class III with varistors

Class III overvoltage arrester

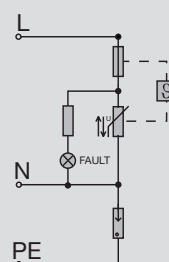
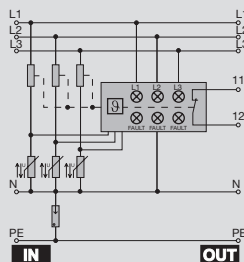
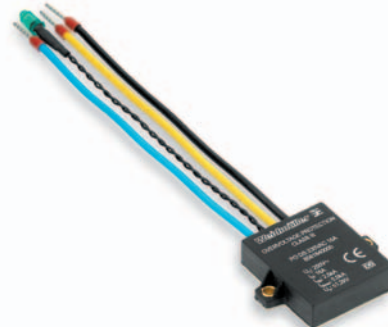
PU 3 D 230V/400Vac 16A

PU 3 D 230V/400Vac 16A



PO DS 230V 16A

PO DS 230V 16A



Technical data

Technical specification

Rated voltage U_n (AC)
Operating voltage U_c (ac), max.
Requirement class acc. to IEC 61643-1
Combined pulse U_{oc}
Discharge current per path (8/20 μ s)
Leakage current, max. (8/20 μ s)
Response time
Back-up fuse, max.
Protection level U_p (typ.)
Optical function indicator
Monitoring contact
Design
Colour
Oper. temp. min./Oper. temp. max.
Stor. temp. min./Storage temp., max.
Approvals

230V
275V
class III
4kV
6.50kA
18kA
< 150 ns
16 A
850V
LED green = OK / LED red = faulty
250V 1A
installation housing
grey
-25°C/55°C
-40°C/55°C

230V
275V
class III
4kV
2.50kA
5kA
sym/ asym: <100 ns
16 A
1500V
LED green

miscellaneous
black
-25°C/55°C
-40°C/60°C

Dimensions

Clamping range (rating- / min. / max.) mm²
Length x width x height mm

screw connection

2.50 / 0.50 / 2.50
91 x 54.0 x 61

3 x 1.5 mm²

41 x 12.0 x 41

Information

Ordering data

Type	Qty.	Order No.
PU 3D 230V/400Vac 16A	1	8509130000

Type	Qty.	Order No.
PO DS	1	8581840000

Information

Accessories

Information

Overvoltage protection for energy distribution systems

Class III with varistors

Class III overvoltage arrester

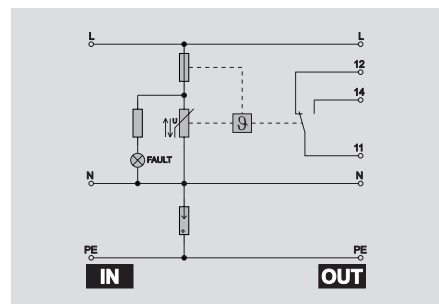
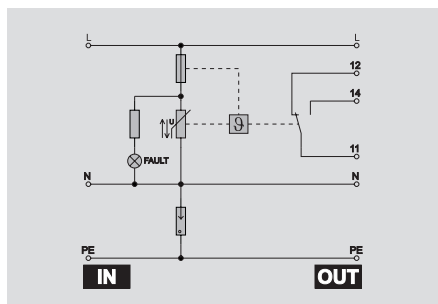
PU DS 230Vac 16A

PU DS 230Vac 16A



PU DS 115Vac/dc 16A

PU DS 115Vac/dc 16A



Technical data

Technical specification

Rated voltage U_n (AC)
Operating voltage U_c (ac), max.
Requirement class acc. to IEC 61643-1
Combined pulse U_{oc}
Discharge current per path (8/20 μ s)
Leakage current, max. (8/20 μ s)
Response time
Back-up fuse, max.
Protection level U_p (typ.)
Optical function indicator
Monitoring contact
Design
Colour
Oper. temp. min./Oper. temp. max.
Stor. temp. min./Storage temp., max.
Approvals

220V
275V
class III
4kV
2.50kA
5kA
< 150 ns
16 A
1500V
LED green OK
250V 1A
installation housing
grey
-25°C/55°C
-40°C/55°C

115V
130V
class III
4kV
2.50kA
5kA
< 150 ns
16 A
850V
LED green OK
250V 1A
installation housing
grey
-25°C/55°C
-40°C/55°C

Dimensions

Clamping range (rating- / min. / max.) mm²
Length x width x height mm

screw connection

2.50 / 0.50 / 2.50
91 x 18.0 x 61

screw connection

2.50 / 0.50 / 2.50
91 x 18.0 x 61

Information

Ordering data

Type	Qty.	Order No.
PU DS 230VAC 16A	1	8523740000

Type	Qty.	Order No.
PU DS 115VAC 16A	1	8568650000

Information

Accessories

Information

Articles with coloured order number are kept permanently in stock at the central warehouse in Germany.
Delivery times see page X.2

Overvoltage protection for energy distribution systems

Class III with varistors

Class III overvoltage arrester

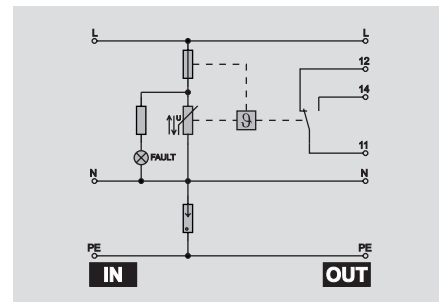
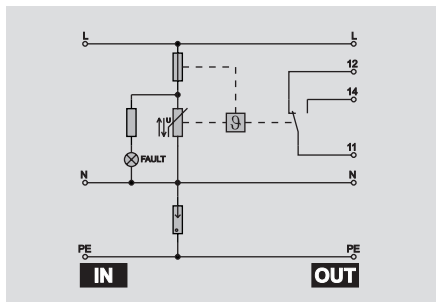
PU DS 24Vac/dc 16A

PU DS 24Vac/dc 16A



PU DS 48Vac/dc 16A

PU DS 48Vac/dc 16A



Technical data

Technical specification

Rated voltage U_n (AC)
Operating voltage U_c (ac), max.
Requirement class acc. to IEC 61643-1
Combined pulse U_{oc}
Discharge current per path (8/20 μ s)
Leakage current, max. (8/20 μ s)
Response time
Back-up fuse, max.
Protection level U_p (typ.)
Optical function indicator
Monitoring contact
Design
Colour
Oper. temp. min./Oper. temp. max.
Stor. temp. min./Storage temp., max.
Approvals

24V
30V
class III
4kV
1kA
2kA
< 150 ns
16 A
1100V
LED green OK
250V 1A
installation housing
grey
-25°C/55°C
-40°C/55°C

48V
60V
class III
4kV
2.50kA
5kA
< 150 ns
16 A
1100V
LED green OK
250V 1A
installation housing
grey
-25°C/55°C
-40°C/55°C

Dimensions

Clamping range (rating- / min. / max.) mm²
Length x width x height mm

screw connection

2.50 / 0.50 / 2.50
91 x 18.0 x 61

screw connection

2.50 / 0.50 / 2.50
91 x 18.0 x 61

Information

Ordering data

Type	Qty.	Order No.
PU DS 24Vac 16A	1	8682100000

Type	Qty.	Order No.
PU DS 48VAC 16A	1	8670740000

Information

Accessories

Information

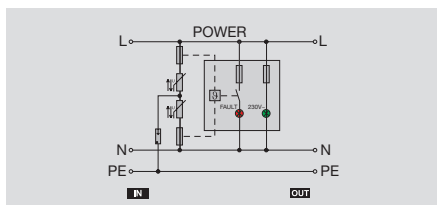
Overvoltage protection for energy distribution systems

Class III adapter plug (Schuko)

Class III overvoltage arrester

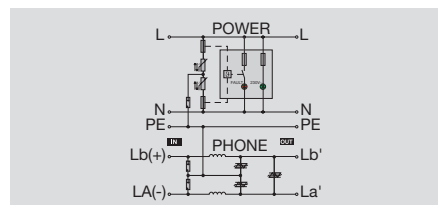
PU D ZS 230V 16A

PU D ZS 230V 16A



PU D ZS analogue

PU D ZS analog 230V 16A



Technical data

Rated voltage U_n (AC)
Operating voltage U_c (ac), max.
Operating current, I_{max}
According to DIN VDE 0675-6
Requirement class acc. to IEC 61643-1
Combined pulse U_{oc}

Leakage current, max. (8/20 μ s)
Back-up fuse, max.
Response time
On output side sym., at Input 8/20 μ s, typical
On output side usym., Input 8/20 μ s, typical
Leakage current at Un
Optical function indicator
Pollution severity

Overvoltage category
Oper. temp. min./Oper. temp. max.
Stor. temp. min./Storage temp., max.

General data

Input voltage max.
nominal current I_n , max.
Norm Signal
Rated leakage current (8/20 μ s)
Total current
Response time, type
Resistance per path
Cut-off frequency f_g , 600 M-System
Transistor output, positive-switching
Residual voltage at output at input pulse of 1 kV/ μ s
Residual voltage at output at 8/20 μ s and input pulse of 5kA

Dimensions

Clamping range (rating- / min. / max.) mm²
Length x width x height mm

Information

230V
275V
16A
requirement class D
class III
4kV
5kA
16 A
< 150 ns
600V
1500V
1 μ A
LED green = OK; LED red = faulty
2
III
0°C/60°C
-25°C/85°C

110 x 62.0 x 48

230V
275V
16A
requirement class D
class III
4kV
5kA
16 A
< 150 ns
600V
1500V
1 μ A
LED green = OK; LED red = faulty
2
III
0°C/60°C
-25°C/85°C

190Vdc
0.45A
analog telephone signal
4 kA
10kA
<5ns
1.1 Ω
2.0Mhz
a/b<= 270V a-b/PE<= 270V
a/b<= 100V
a-b/PE<= 100V

110 x 62.0 x 48

Ordering data

Version

Type	Qty.	Order No.
PU D ZS 230V 16A	1	8697580000

Type	Qty.	Order No.
PU D ZS analog 230V 16A	1	8697600000

Information

Accessories

Information

Conductor, RJ45 on both sides, order no. 8697590000

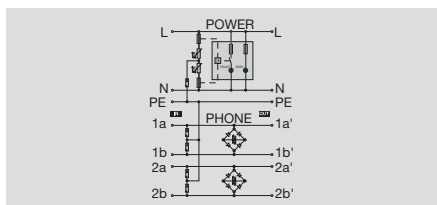
Overvoltage protection for energy distribution systems

Class III adapter plug (Schuko)

Class III overvoltage arrester

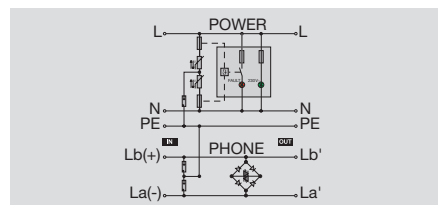
PU D ZS So

PU D ZS So 230V 16A



PU D ZS Uko

PU D ZS Uko 230V 16A



Technical data

Rated voltage U_n (AC)
Operating voltage U_c (ac), max.
Operating current, I_{max}
According to DIN VDE 0675-6
Requirement class acc. to IEC 61643-1
Combined pulse U_{oc}

Leakage current, max. (8/20 μ s)
Back-up fuse, max.
Response time
On output side sym., at Input 8/20 μ s, typical
On output side usym., Input 8/20 μ s, typical
Leakage current at Un
Optical function indicator
Pollution severity

Overvoltage category
Oper. temp. min./Oper. temp. max.
Stor. temp. min./Storage temp., max.

General data

Input voltage max.
nominal current I_n , max.
Norm Signal
Rated leakage current (8/20 μ s)
Total current
Response time, type
Resistance per path
Cut-off frequency f_g , 600 M-System
Transistor output, positive-switching
Residual voltage at output at input pulse of 1 kV/ μ s
Residual voltage at output at 8/20 μ s and input pulse of 5kA

Dimensions

Clamping range (rating- / min. / max.) mm²
Length x width x height mm

Information

Ordering data

Version

Information

Accessories

Information

230V
275V
16A
requirement class D
class III
4kV

5kA
16 A
< 150 ns
600V
1500V
1 μ A
LED green = OK; LED red = faulty
2

III
0°C/60°C
-25°C/85°C

190V
0.45A
ISDN telephone signal
4 kA
10kA
< 5ns
1.1 Ω
80.0Mhz

a/b <= 270V a-b/PE <= 270V
a/b <= 100V a-b/PE <= 100V

110 x 62.0 x 48

Conductor RJ 45 on both sides, order no. 8697590000

230V
275V
16A
requirement class D
class III
4kV

5kA
16 A
< 150 ns
600V
1500V
1 μ A
LED green = OK; LED red = faulty
2

III
0°C/60°C
-25°C/85°C

190Vdc
0.45A
ISDN telephone signal
4 kA
10kA
< 5ns
1.1 Ω
80.0Mhz

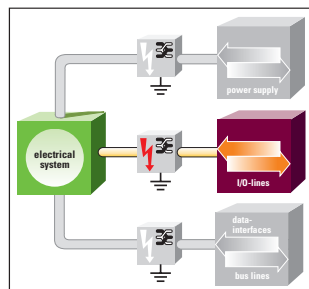
a/b <= 270V a-b/PE <= 270V
a/b <= 100V a-b/PE <= 100V

110 x 62.0 x 48

Conductor RJ45 on both sides, order no. 8697590000

Overvoltage protection for measurement and control engineering

Principles of overvoltage protection for measurement and control engineering

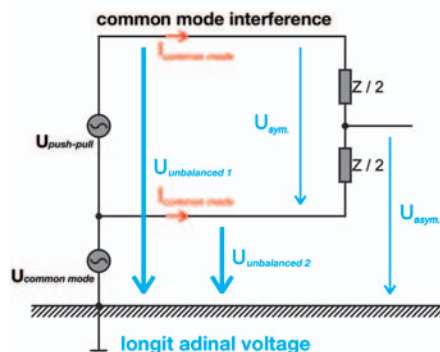


Basic classification

The current standard and scope of automation technology brings with it a wide range of applications for overvoltage protection in the field of measurement and control engineering. One important prerequisite is the consistent use of coordinated overvoltage protection in all sections of the plant or building. In industry, measurement and control systems are an important area where breakdowns or malfunctions can result in high costs. As the standards covering the low control voltages do not specify many suitable parameters, the use of overvoltage protection, apart from lightning protection zoning concepts, remains to be classified according to type of signal, application circuit and type of interference voltage.

Types of interference voltage

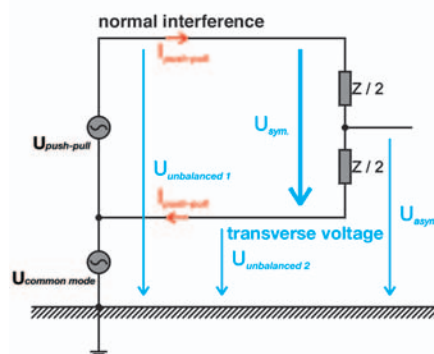
The transient overvoltages coupled into a system via one or more coupling mechanisms occur as normal or common-mode interference. These are measured as longitudinal or transverse voltages and, depending on the circuit, designated as symmetrical or asymmetrical voltages. (For further information, please see the chapter on "Principles").



Common-mode interference (asymmetrical interference):

Common mode voltage between conductor and reference potential (earth).

Mainly caused by capacitive coupling (electric field).



Normal-mode interference (symmetrical interference):

normal-mode voltage between supply and return conductor.

Load and interference source connected in series, e.g. inductive (magnetic field) or electrical coupling (common impedance).

Types of signal

Binary signals

These are two-core signals with a common reference potential, required for example by switches, PLC switch outputs, photo sensors, position sensors, solenoids, warning lamps, PLC inputs, etc. As a rule, these signals have a common reference potential that can be either connected or not connected to earth potential, depending on the type of protection. The coupled transient interference is primarily common-mode interference.

Analogue signals

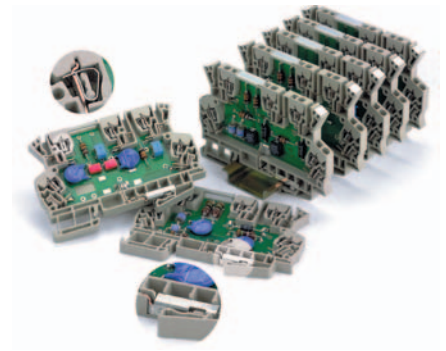
Measuring circuits are normally designed as two-core current loops or voltage signals without a common reference potential, such as 0(4) to 20 mA current loop. The coupled transient interference is primarily normal-mode interference.

For temperature measurements with the PT100 measuring resistors, the voltage drop in the three-core version is measured via the third core at the measuring resistor. This must be included in the protection.

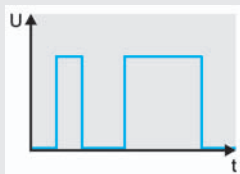
PT100 measurement is also available in a four-core version. The voltage drop is then measured via the two additional lines at the measuring resistor without additional power loss in the PT100 measuring circuit. The coupled transient normal-mode interference occurs between the various cores.

Overvoltage protection for measurement and control engineering

Weidmüller interface elements

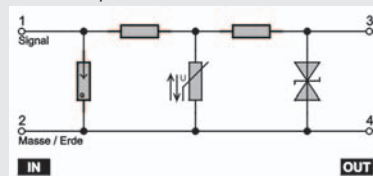


Binary signals

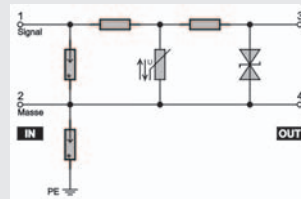


Two-core, usually with common reference potential, e.g. signals from binary sensors, actuators and indicators such as limit switches, probes, position sensors, photo sensors, contactors, solenoids, warning lamps, etc.

Protection for binary signals connected to earth potential



Protection for binary signals not connected to earth potential

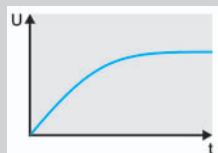


Type

MCZovp symm. 2 signal paths
MCZovp GDT, MOV, TAZ 1 signal path
DKU 1 signal path
EGU 1: 1 signal path
EGU 2: 1 signal path
EGU 4 symm: 2 signal paths
PLU symm: 2 signal paths

LPU non-earthed

Analogue signals



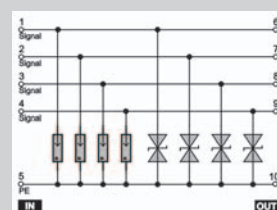
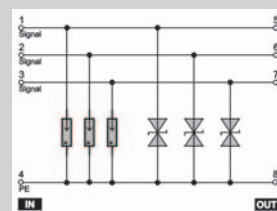
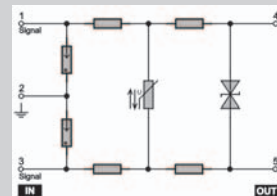
Two-, three- and four-core versions without common reference potential

Signals from current loops (analogue measurements from sensors over long distances) 4 ... 20 mA, 0 .. 20 mA, etc.

or level measurements – signals from voltage sensors (analogue measurements from sensors over short distances) 0...10 V, PT100 and temperature measurement



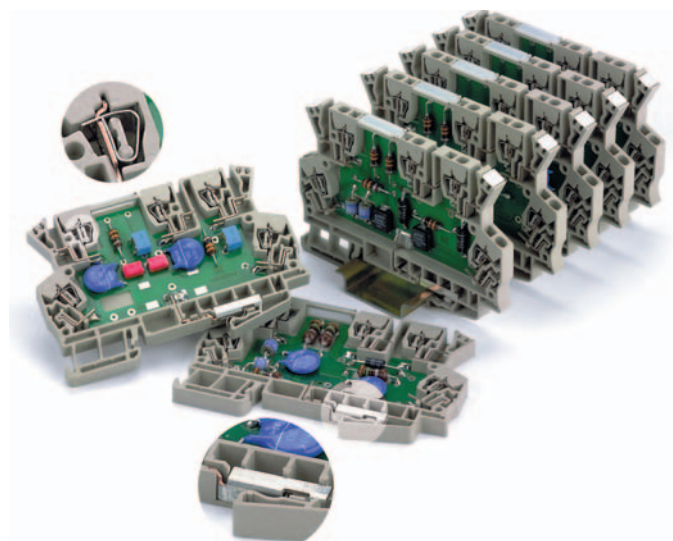
Protection for two-, three- and four-core versions



MCZ OVP CL
DK5U
DK6U
EGU 3 for current loops
EGU 4 for current loops
PLU for current loops
RSU 6 A
RSU 10 A

Overvoltage protection for measurement and control engineering

Narrow overvoltage protection terminals for measurement and control engineering

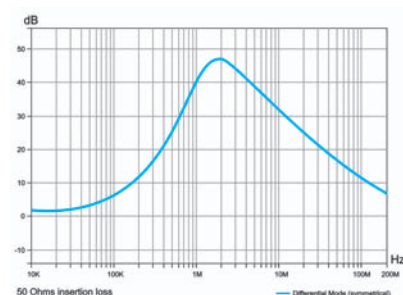


Weidmüller MCZ ovp overvoltage protection terminals are characterised by their maximum protective function concentrated in a compact space of 6 mm. The tension clamp connection and direct earthing via the mounting rail contact saves time for users during installation. MCZ ovp terminals are designed for confined spaces in process, industrial and building services automation.

The three-stage overvoltage protection terminals are fitted with gas charge eliminator, varistors, suppressor diodes (TAZ) and decoupling inductors. Individual protective components, such as varistors and suppressor diodes, round off the range.

MCZ ovp overvoltage protection terminals are available for rated voltages of 24 V, 48 V, 115 V and 230 V.

The earth contact is produced by clipping onto the earthed mounting rail. To guarantee safe energy discharge of up to 10 kA (8/20 s) via these terminals, the TS 35 rail must be earthed. To ensure electromagnetic compatibility, the mounting rail must be screwed securely to an earthed mounting plate. Optimum protection is achieved when the PE contact is made via a tension clamp terminal every 60 cm.



Models

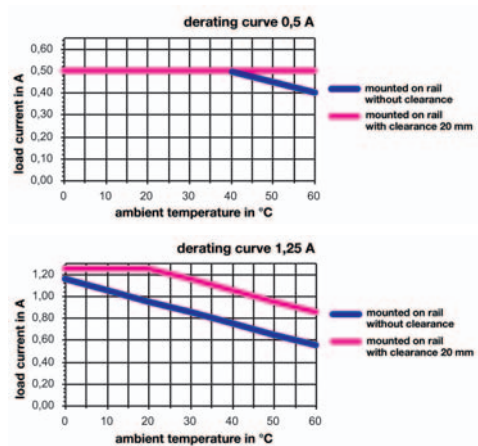
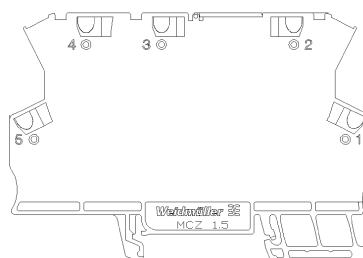
MCZ ovp CL is a three-stage protective combination with one suppression diode across the current paths. It limits overvoltage in analogue signal circuits, e.g. in a current loop.

MCZ ovp SL is a three-stage protective combination with two suppressor diodes, each from the signal line to earth. It limits overvoltage in binary circuits, e.g. in actuators.

MCZ ovp CL FG is a three-stage protective combination with one suppression diode across the current paths. It limits the overvoltage in analogue signal circuits. A high-resistance earth connection is achieved via the gas charge eliminator.

MCZ ovp SL FG is a three-stage protective combination with two suppressor diodes, each from the signal line to earth. It limits the overvoltage in binary circuits, e.g. in actuators. A high-resistance earth connection is achieved via three gas charge eliminators.

MCZ ovp filter terminals contain selected varistors, capacitors and direct-axis inductors. They form reliable noise filters. Coupled interference in the kHz range is safely discharged to earth. For example, the signal inputs of a PLC; which can be protected from interference voltages and HF interference.



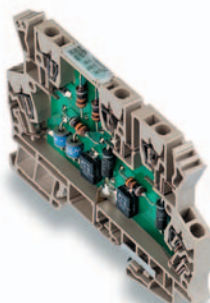
Overvoltage protection for instrumentation and control

3-step or 1-step protection with tension clamp connection

Slimline overvoltage protection terminal with tension clamp connection

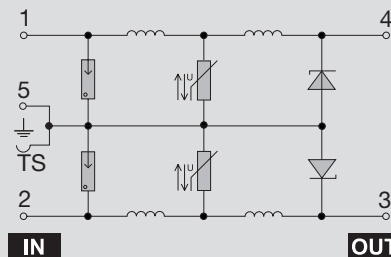
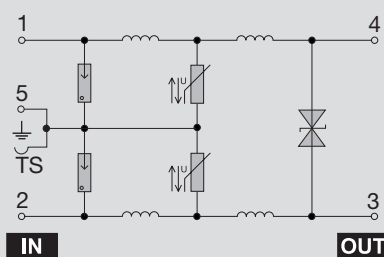
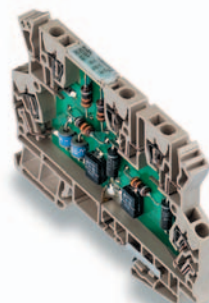
MCZ OVP CL 24 V_{uc} 1.25A

MCZ OVP CL 24V_{uc} 1.25A



MCZ OVP SL 24 V_{dc} 0.5A

MCZ OVP SL 24V_{dc} 0.5A



Technical data

Technical specification

Rated voltage U_n (AC)
Rated voltage (DC)
Operating voltage U_c (ac), max.
Operating current, I_{max}
Volume resistance
Gas discharger
Varistor
Suppressor diodes
Cut-off freq. (-3dB) at load impedance
Leakage current, max. (8/20 μs)
On output side, sym. 1kV/μs input, typical
On output side sym. at Input 8/20μs, typical
On the output side, unsymmetrical, Input 1kV/μs, typ.
On output side usym., Input 8/20μs, typical
Design
Type of connection
Stor. temp. min./Storage temp., max.
Oper. temp. min./Oper. temp. max.

24V
24V
28V
1.25A
1Ω
Yes
Yes
Yes
500.0kHz 240Ω
10kA
40V
65V
70V
90V
terminal
tension clamp connection
-25°C/85°C
-25°C/60°C

24V
28V
0.50A
2.50Ω
Yes
Yes
Yes
500.0kHz 240Ω
10kA
40V
65V
40V
65V
terminal
tension clamp connection
-25°C/85°C
-25°C/60°C

Dimensions

Clamping range (rating- / min. / max.) mm²
Length x width x height mm

Information

tension clamp connection

1.50 / 0.50 / 1.50
91 x 6.0 x 63.50

See derating-chart

tension clamp connection

1.50 / 0.50 / 1.50
91 x 6.0 x 63.50

See derating-chart

Ordering data

Version

Type	Qty.	Order No.
MCZ OVP CL 24VUC 1,25A	10	8448960000

Type	Qty.	Order No.
MCZ OVP SL 24VDC 0,5A	10	8448940000

Information

Accessories

Information

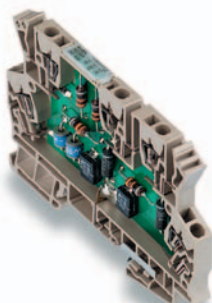
Overvoltage protection for instrumentation and control

3-step or 1-step protection with tension clamp connection

Slimline overvoltage protection terminal with tension clamp connection

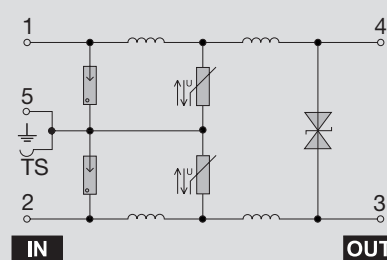
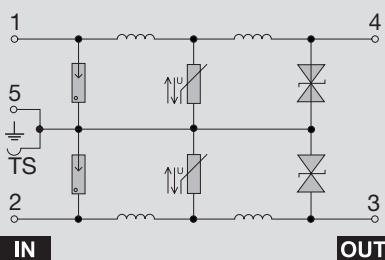
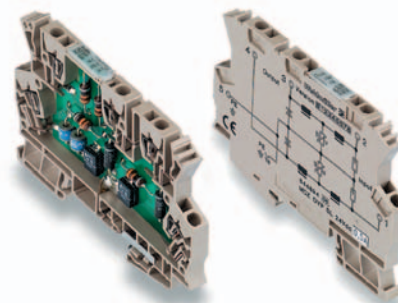
MCZ OVP SL 24 V_{uc} 1.25A

MCZ OVP SL 24V_{uc} 1.25A



MCZ OVP CL 48V_{uc} 0.5A

MCZ OVP CL 48V_{uc} 0.5A



Technical data

Technical specification

Rated voltage U_n (AC)
Rated voltage (DC)
Operating voltage U_c (ac), max.
Operating current, I_{max}
Volume resistance
Gas discharger
Varistor
Suppressor diodes
Cut-off freq. (-3dB) at load impedance
Leakage current, max. (8/20 μs)
On output side, sym. 1kV/μs input, typical
On output side sym. at Input 8/20μs, typical
On the output side, unsymmetrical, Input 1kV/μs, typ.
On output side usym., Input 8/20μs, typical
Design
Type of connection
Stor. temp. min./Storage temp., max.
Oper. temp. min./Oper. temp. max.

24V
24V
28V
1.25A
1Ω
Yes
Yes
Yes
500.0kHz 240Ω
10kA
40V
65V
65V
terminal
tension clamp connection
-25°C/85°C
-25°C/60°C

48V
48V
53V
0.50A
2.50Ω
Yes
Yes
Yes
500.0kHz 240Ω
10kA
82V
150V
120V
250V
terminal
tension clamp connection
-25°C/85°C
-25°C/60°C

Dimensions

Clamping range (rating- / min. / max.) mm²
Length x width x height mm

Information

tension clamp connection

1.50 / 0.50 / 1.50
91 x 6.0 x 63.50

See derating-chart

tension clamp connection

1.50 / 0.50 / 1.50
91 x 6.0 x 63.50

See derating-chart

Ordering data

Version

Type	Qty.	Order No.
MCZ OVP SL 24VUC 1,25A	10	8448970000

Type	Qty.	Order No.
MCZ OVP CL 48VUC 0,5A	10	8449000000

Information

Accessories

Information

Articles with coloured order number are kept permanently in stock at the central warehouse in Germany.
Delivery times see page X.2

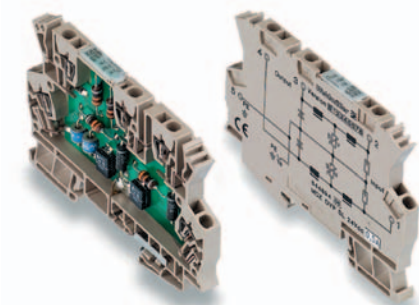
Overvoltage protection for instrumentation and control

3-step or 1-step protection with tension clamp connection

Slimline overvoltage protection terminal with tension clamp connection

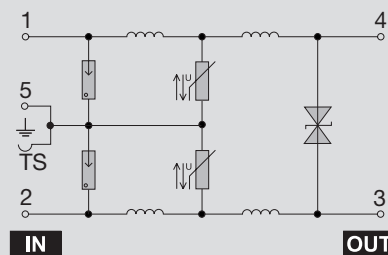
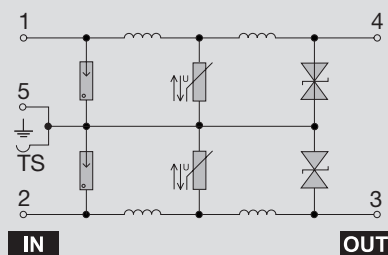
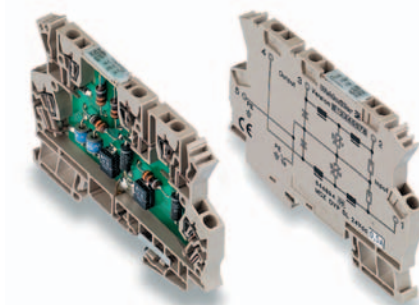
MCZ OVP SL 48Vuc 0.5A

MCZ OVP SL 48Vuc 0.5A



MCZ OVP CL 48Vuc 1.25A

MCZ OVP CL 48Vuc 1.25A



Technical data

Technical specification

Rated voltage U_n (AC)
Rated voltage (DC)
Operating voltage U_c (ac), max.
Operating current, I_{max}
Volume resistance
Gas discharger
Varistor
Suppressor diodes
Cut-off freq. (-3dB) at load impedance
Leakage current, max. (8/20 μ s)
On output side, sym. 1kV/ μ s input, typical
On output side sym. at Input 8/20 μ s, typical
On the output side, unsymmetrical, Input 1kV/ μ s, typ.
On output side usym., Input 8/20 μ s, typical
Design
Type of connection
Stor. temp. min./Storage temp., max.
Oper. temp. min./Oper. temp. max.

48V
48V
53V
0.50A
2.50 Ω
Yes
Yes
Yes
500.0kHz 240 Ω
10kA
82V
150V
82V
150V
terminal
tension clamp connection
-25°C/85°C
-25°C/60°C

48V
48V
53V
1.25A
1 Ω
Yes
Yes
Yes
500.0kHz 240 Ω
10kA
82V
150V
120V
250V
terminal
tension clamp connection
-25°C/85°C
-25°C/60°C

Dimensions

Clamping range (rating- / min. / max.) mm²
Length x width x height mm

Information

tension clamp connection

1.50 / 0.50 / 1.50
91 x 6.0 x 63.50

See derating-chart

tension clamp connection

1.50 / 0.50 / 1.50
91 x 6.0 x 63.50

See derating-chart

Ordering data

Version

Type	Qty.	Order No.
MCZ OVP SL 48VUC 0,5A	10	8449030000

Type	Qty.	Order No.
MCZ OVP CL 48VUC 1,25A	10	8449040000

Information

Accessories

Information

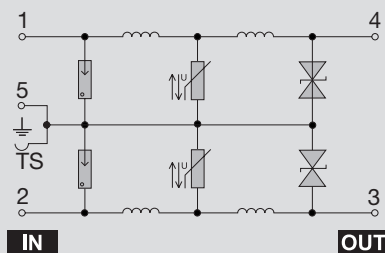
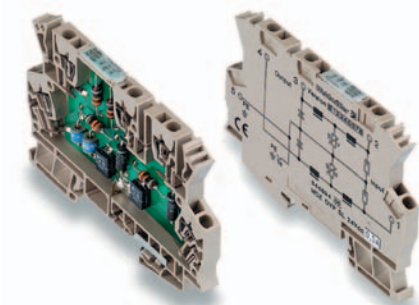
Overvoltage protection for instrumentation and control

3-step or 1-step protection with tension clamp connection

Narrow overvoltage protection terminal with tension clamp connection

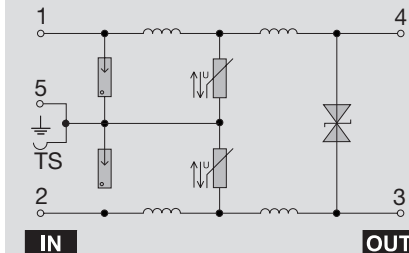
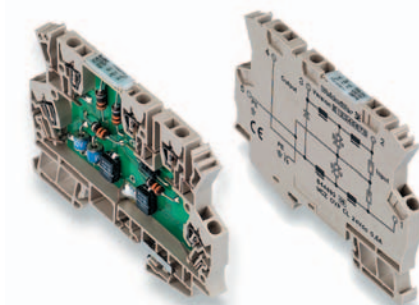
MCZ OVP SL 48Vuc 1.25A

MCZ OVP SL 48Vuc 1.25A



MCZ OVP CL 115VUC 1.25 A

MCZ OVP CL 115Vuc 1.25A



Technical data

Technical specification

Rated voltage Un (AC)
Rated voltage (DC)
Operating voltage Uc (ac), max.
Operating current, I_{max}
Volume resistance
Gas discharger
Varistor
Suppressor diodes
Cut-off freq. (-3dB) at load impedance
Leakage current, max. (8/20 μs)
On output side, sym. 1kV/μs input, typical
On output side sym. at Input 8/20μs, typical
On the output side, unsymmetrical, Input 1kV/μs, typ.
On output side usym., Input 8/20μs, typical
Design
Type of connection
Stor. temp. min./Storage temp., max.
Oper. temp. min./Oper. temp. max.

48V
48V
53V
1.25A
1Ω
Yes
Yes
Yes
500.0kHz 240Ω
10kA
82V
150V
82V
150V
terminal
tension clamp connection
-25°C/85°C
-25°C/60°C

115V
115V
127V
1.25A
1Ω
Yes
Yes
Yes
500.0kHz 240Ω
10kA
220V
360V
380V
420V
terminal
tension clamp connection
-25°C/85°C
-25°C/60°C

Dimensions

Clamping range (rating- / min. / max.) mm²
Length x width x height mm

Information

tension clamp connection

1.50 / 0.50 / 1.50
91 x 6.0 x 63.50

See derating-chart

tension clamp connection

1.50 / 0.50 / 1.50
91 x 6.0 x 63.50

See derating-chart

Ordering data

Version

Type	Qty.	Order No.
MCZ OVP SL 48VUC 1,25A	10	8449050000

Type	Qty.	Order No.
MCZ OVP CL 115VUC 1,25A	10	8449060000

Information

Accessories

Information

Articles with coloured order number are kept permanently in stock at the central warehouse in Germany.
Delivery times see page X.2

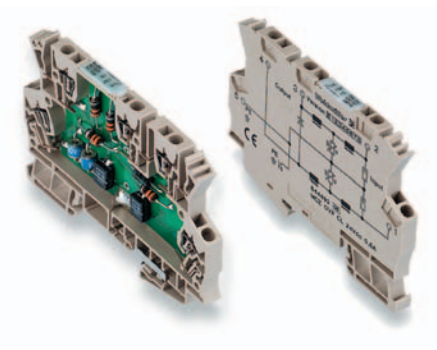
Overvoltage protection for instrumentation and control

3-step or 1-step protection with tension clamp connection

Slimline overvoltage protection terminal with tension clamp connection

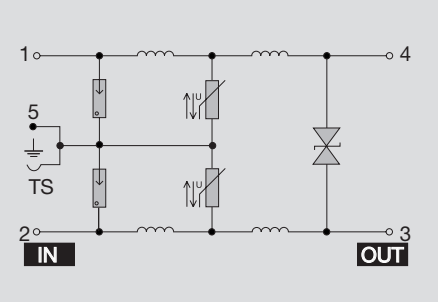
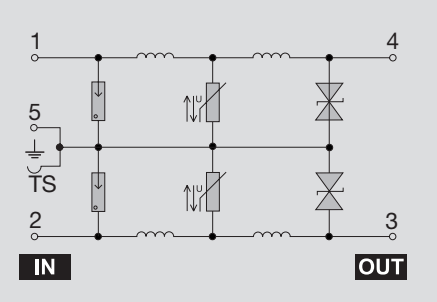
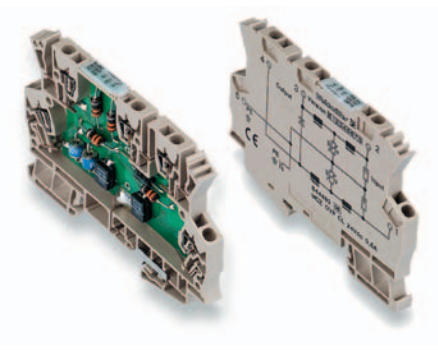
MCZ OVP SL 115Vuc 1.25 A

MCZ OVP SL 115Vuc 1.25A



MCZ OVP CL 230Vuc 1.25 A

MCZ OVP CL 230Vuc1.25A



Technical data

Technical specification	
Rated voltage Un (AC)	115V
Rated voltage (DC)	115V
Operating voltage Uc (ac), max.	127V
Operating current, I _{max}	1.25A
Volume resistance	1Ω
Gas discharger	Yes
Varistor	Yes
Suppressor diodes	Yes
Cut-off freq. (-3dB) at load impedance	500.0kHz 240Ω
Leakage current, max. (8/20 μs)	10kA
On output side, sym. 1kV/μs input, typical	220V
On output side sym, at Input 8/20μs, typical	220V
On the output side, unsymmetrical, Input 1kV/μs, typ.	220V
On output side usym., Input 8/20μs, typical	360V
Design	terminal
Type of connection	tension clamp connection
Stor. temp. min./Storage temp., max.	-25°C/85°C
Oper. temp. min./Oper. temp. max.	-25°C/60°C

115V
115V
127V
1.25A
1Ω
Yes
Yes
Yes
500.0kHz 240Ω
10kA
220V
220V
220V
360V
terminal
tension clamp connection
-25°C/85°C
-25°C/60°C

230V
230V
250V
1.25A
1Ω
Yes
Yes
Yes
500.0kHz 240Ω
10kA
420V
710V
360V
450V
terminal
tension clamp connection
-25°C/85°C
-25°C/60°C

Dimensions	
Clamping range (rating- / min. / max.)	mm²
Length x width x height	mm
Information	

tension clamp connection	
1.50 / 0.50 / 1.50	
91 x 6.0 x 63.50	
See derating-chart	

tension clamp connection	
1.50 / 0.50 / 1.50	
91 x 6.0 x 63.50	
See derating-chart	

Ordering data

Version
Information

Type	Qty.	Order No.
MCZ OVP SL 115VUC 1,25A	10	8449070000

Type	Qty.	Order No.
MCZ OVP CL 230VUC1,25A	10	8449080000

Accessories

Information

Information

Information

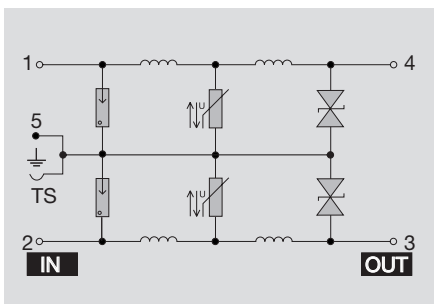
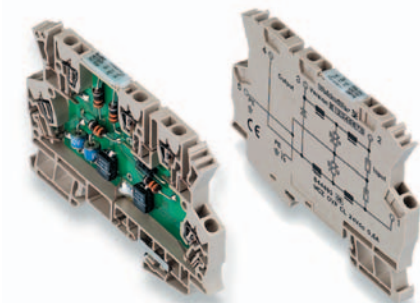
Overvoltage protection for instrumentation and control

3-step or 1-step protection with tension clamp connection

Narrow overvoltage protection terminal with tension clamp connection

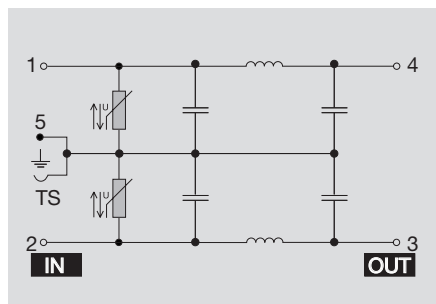
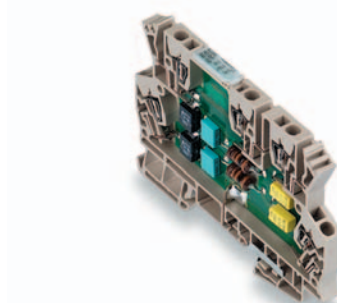
MCZ OVP SL 230V_{uc} 1.25 A

MCZ OVP SL 230V_{uc} 1.25A



MCZ OVP 24 V 0.5A

MCZ OVP FILTER 24V 0.5A



Technical data

Technical specification

Rated voltage U_n (AC)
 Rated voltage (DC)
 Operating voltage U_c (ac), max.
 Operating current, I_{max}
 Volume resistance
 Gas discharger
 Varistor
 Suppressor diodes
 Cut-off freq. (-3dB) at load impedance
 Leakage current, max. (8/20 μ s)
 On output side, sym. 1kV/ μ s input, typical
 On output side sym, at Input 8/20 μ s, typical
 On the output side, unsymmetrical, Input 1kV/ μ s, typ.
 On output side usym., Input 8/20 μ s, typical
 Design
 Type of connection
 Stor. temp. min./Storage temp., max.
 Oper. temp. min./Oper. temp. max.

230V
 230V
 250V
 1.25A
 1 Ω
 Yes
 Yes
 Yes
 500.0kHz 240 Ω
 10kA
 420V
 710V
 420V
 710V
 terminal
 tension clamp connection
 -25°C/85°C
 -25°C/60°C

24V
 24V
 26V
 0.50A
 2.50 Ω
 No
 Yes
 No
 500.0kHz 240 Ω
 500A
 terminal
 tension clamp connection
 -25°C/85°C
 -25°C/60°C

Dimensions

Clamping range (rating- / min. / max.) mm²
 Length x width x height mm

Information

tension clamp connection

1.50 / 0.50 / 1.50
 91 x 6.0 x 63.50

See derating-chart

tension clamp connection

1.50 / 0.50 / 1.50
 91 x 6.0 x 63.50

See derating-chart

Ordering data

Version

Type	Qty.	Order No.
MCZ OVP SL 230VUC 1,25A	10	8449090000

Type	Qty.	Order No.
MCZ OVP FILTER 24V 0,5A	10	8449100000

Information

See damping-chart

Accessories

Information

Articles with coloured order number are kept permanently in stock at the central warehouse in Germany.
 Delivery times see page X.2

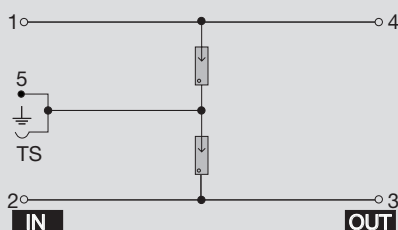
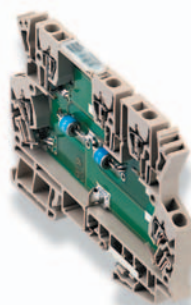
Overvoltage protection for instrumentation and control

3-step or 1-step protection with tension clamp connection

Slimline overvoltage protection terminal with tension clamp connection

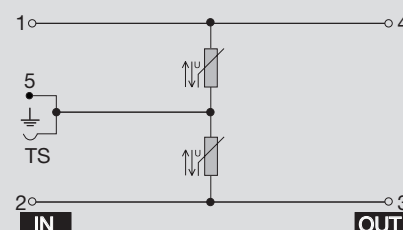
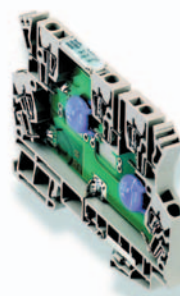
MCZ OVP 90V

MCZ OVP Gas charge eliminator 90V



MCZ OVP S14K30

MCZ OVP VARISTOR S14K30



Technical data

Technical specification

Rated voltage U_n (AC)
Rated voltage (DC)
Operating voltage U_c (ac), max.
Operating current, I_{max}
Volume resistance
Gas discharger
Varistor
Suppressor diodes
Cut-off freq. (-3dB) at load impedance
Leakage current, max. (8/20 μ s)
On output side, sym. 1kV/ μ s input, typical
On output side sym. at Input 8/20 μ s, typical
On the output side, unsymmetrical, Input 1kV/ μ s, typ.
On output side usym., Input 8/20 μ s, typical
Design
Type of connection
Stor. temp. min./Storage temp., max.
Oper. temp. min./Oper. temp. max.

60V
72V
63V
16A
0.20 Ω
90V 10kA
No
No
10kA
700V
800V
1400V
1600V
terminal
tension clamp connection
-25°C/85°C
-25°C/60°C

30V
30V
30V
30V
16A
0.20 Ω
No
Yes
No
4kA
45V
55V
90V
110V
terminal
tension clamp connection
-25°C/85°C
-25°C/60°C

Dimensions

Clamping range (rating- / min. / max.) mm²
Length x width x height mm

Information

tension clamp connection

1.50 / 0.50 / 1.50
91 x 6.0 x 63.50

See derating-chart

tension clamp connection

1.50 / 0.50 / 1.50
91 x 6.0 x 63.50

See derating-chart

Ordering data

Version

Type	Qty.	Order No.
MCZ OVP Gas charge eliminator 90V	10	8449130000

Type	Qty.	Order No.
MCZ OVP VARISTOR S10K30	10	8449140000

Information

Accessories

Information

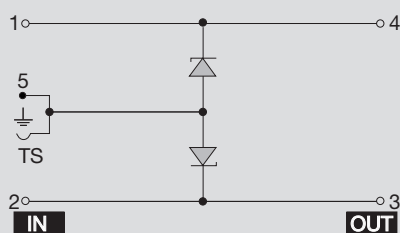
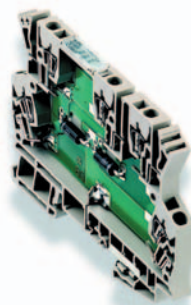
Overvoltage protection for instrumentation and control

3-step or 1-step protection with tension clamp connection

Slimline overvoltage protection terminal with tension clamp connection

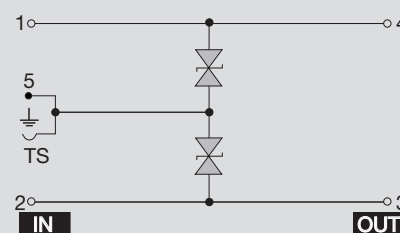
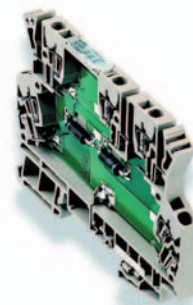
MCZ OVP TAZ 24Vdc

MCZ OVP TAZ DIODE24Vdc



MCZ OVP TAZ 24Vuc

MCZ OVP TAZ DIODE24Vuc



Technical data

Technical specification

Rated voltage U_n (AC)
 Rated voltage (DC)
 Operating voltage U_c (ac), max.
 Operating current, I_{max}
 Volume resistance
 Gas discharger
 Varistor
 Suppressor diodes
 Cut-off freq. (-3dB) at load impedance
 Leakage current, max. (8/20 μ s)
 On output side, sym. 1kV/ μ s input, typical
 On output side sym. at Input 8/20 μ s, typical
 On the output side, unsymmetrical, Input 1kV/ μ s, typ.
 On output side usym., Input 8/20 μ s, typical
 Design
 Type of connection
 Stor. temp. min./Storage temp., max.
 Oper. temp. min./Oper. temp. max.

24V
 30V
 16A
 0.20 Ω
 No
 No
 Yes
 500A
 55V
 65V
 110V
 130V
 terminal
 tension clamp connection
 -25°C/85°C
 -25°C/60°C

24V
 27V
 27V
 16A
 0.20 Ω
 No
 No
 Yes
 500A
 55V
 65V
 110V
 130V
 terminal
 tension clamp connection
 -25°C/85°C
 -25°C/60°C

Dimensions

Clamping range (rating- / min. / max.) mm²
 Length x width x height mm

Information

tension clamp connection

1.50 / 0.50 / 1.50
 91 x 6.0 x 63.50

See derating-chart

tension clamp connection

1.50 / 0.50 / 1.50
 91 x 6.0 x 63.50

See derating-chart

Ordering data

Version

Type	Qty.	Order No.
MCZ OVP TAZ DIODE24VDC	10	8449150000

Type	Qty.	Order No.
MCZ OVP TAZ DIODE24VUC	10	8449160000

Information

Accessories

Information

Articles with coloured order number are kept permanently in stock at the central warehouse in Germany.
 Delivery times see page X.2

Overvoltage protection for measurement and control engineering

Overvoltage protection: measurement and control engineering, DK series

Narrow overvoltage protection terminals with screw connection

The overvoltage protection terminals with the tried and tested screw connection of the DK series stand out because of their high protection capability concentrated in a minimum of space. They are predestined for smallest mounting spaces in the process, industrial and building services automation sectors. The three-stage overvoltage protection terminals work with gas charge eliminators, varistors, suppressor diodes (TAZ) or decoupling inductors. The gas charge eliminator reliably divert high currents. Varistors and suppressor diodes take up the residual voltage. The rated current is up to 300 mA for DK4U and DK5U, and up to 1A for D6U. The DKU series consists of DKU, DK4U, DK5U and DK6U, and measure 6.8 or 12 mm wide.

Models **DK4U** include individual components such as varistors, gas charge eliminator suppressor diodes. Two types are used as varistors (MOV): type S14 is ideal for smaller interference. It is suitable for use as an interference suppression device for solenoid valves and switching contacts. Type S20 is kept for higher power ranges.

The fine differentiation of the voltage varistors means that they can be used for all common rated voltages. This results in a great deal of variety. Preferred types are varistors used in the rated voltages of 24V, 48V, 115V and 230V.

Two types of gas charge eliminator are also available: **gas charge eliminator** (GDT) up to 10 kA are suitable for use in measurement and control engineering circuits, and those up to 20 kA for higher signal and mains voltages.

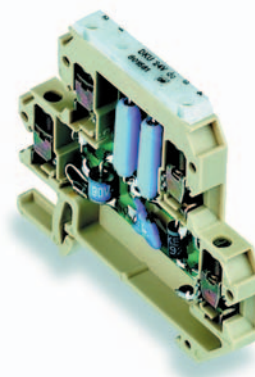
The **suppressor diodes** (transorb diodes) differ in their voltages and are suitable for small and fast transients. The tightening torque is 0.5 Nm acc. to IEC 947.

RC combinations

RC combination can be used as suppressor circuits of contactors and solenoid valves or to increase interference immunity in long lines carrying alternating currents. They have excellent properties in terms of limiting the switching overvoltage, reducing the speed in voltage changes and short switching times. Weidmüller's RC combinations can be used both in direct current and alternating current circuits.

RD combinations

RD combinations can be used in equipment operating with direct current. The advantage of the resistor/diode combination compared to a diode circuit is that the return time lag is reduced by the resistor. RD combinations have very good interference suppression properties as the flow of current is limited by the resistor, therefore the switching times are reduced. In addition, they are more cost effective than RC combinations.



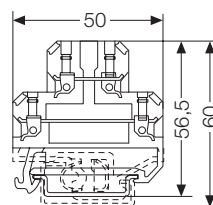
If the length of the return time of the switched equipment is not important, then diode switching is preferable. If the reaction times of the equipment to be switched are to be affected to the least possible extent, interference suppression combinations with varistors or RC combinations are preferable.

WPO 4

Weidmüller's terminal WP04 allows for retrofitting of electrical elements such as diodes, RC combinations, varistors or gas charge eliminator. The protection elements are simply plugged in to produce specific protective circuits at low cost on site. All components are just as easy to replace.

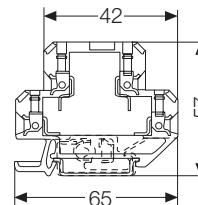
DK 4 U

Varistor gas charge eliminator

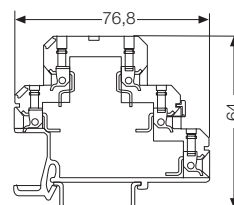


DK 4 U

with suppressor diodes

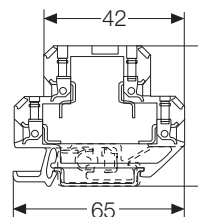


DK 5 U

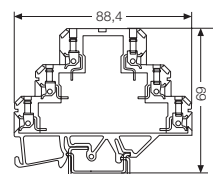


DKU

with combination circuit



DK 6 U



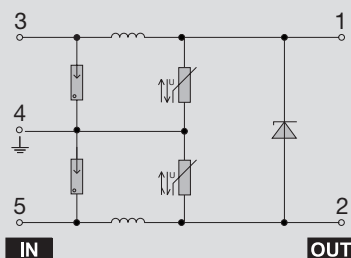
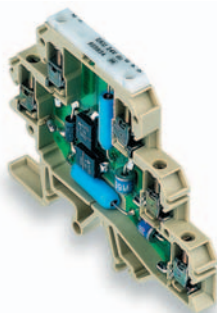
Overvoltage protection for instrumentation and control

3-step protection with screw connection

Slimline overvoltage protection terminal with screw connection

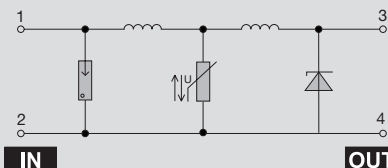
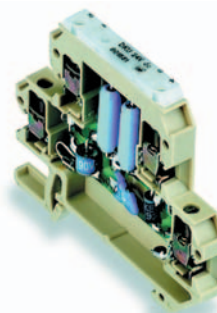
DKU DK5 24Vdc

DKU DK5 24Vdc 0.3A



DKU 24Vdc 0.3A

DKU 24Vdc 0.3A



Technical data

Technical specification

Rated voltage U_n (AC)
 Rated voltage (DC)
 Operating voltage U_c (ac), max.
 Operating current, I_{max}
 Volume resistance
 Gas discharger
 Varistor
 Suppressor diodes
 Cut-off freq. (-3dB) at load impedance
 Leakage current, max. (8/20 μ s)
 On output side, sym. 1kV/ μ s input, typical
 On output side sym. at Input 8/20 μ s, typical
 On the output side, unsymmetrical, Input 1kV/ μ s, typ.
 On output side usym., Input 8/20 μ s, typical
 Design
 Type of connection
 Stor. temp. min./Storage temp., max.
 Oper. temp. min./Oper. temp. max.

24V
 28V
 0.30A
 3 Ω
 Yes
 Yes
 Yes
 400.0kHz 240 Ω
 5kA
 30V
 45V
 35V
 45V
 terminal
 screw connection
 -25°C/85°C
 -25°C/60°C

24V
 28V
 0.30A
 3 Ω
 Yes
 Yes
 Yes
 500.0kHz 240 Ω
 5kA
 35V
 45V
 35V
 45V
 terminal
 screw connection
 -25°C/85°C
 -25°C/60°C

Type of connection

Clamping range (rating- / min. / max.) mm²
 Length x width x height mm

2.50 / 0.50 / 4
 76.80 x 6.0 x 72

2.50 / 0.50 / 4
 65 x 6.0 x 60

Information

Ordering data

Type	Qty.	Order No.
DKU DK5 24VDC 0,3A	10	8238340000

Type	Qty.	Order No.
DKU 32 24VDC 0,3A	10	8015800000
DKU 35 24VDC 0,3A	10	8015810000

Information

DKU DK5 TS35 Height 68mm

DKU 35 Height 57mm

Accessories

Information

Articles with coloured order number are kept permanently in stock at the central warehouse in Germany.
 Delivery times see page X.2

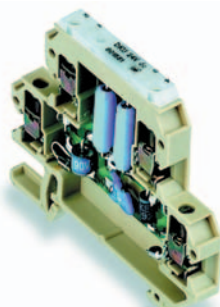
Overvoltage protection for instrumentation and control

3-step protection with screw connection

Slimline overvoltage protection terminal with screw connection

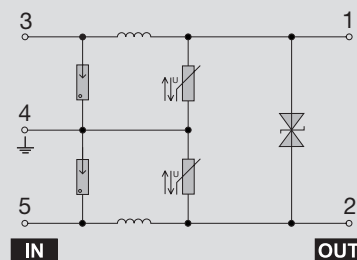
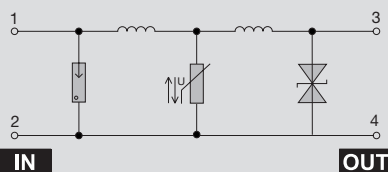
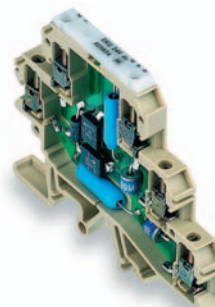
DKU 48Vuc 0.3A

DKU 32 48Vuc 0.3A



DKU DK5 48Vuc

DKU DK5 48Vuc 0.3A



Technical data

Technical specification

Rated voltage U_n (AC)
Rated voltage (DC)
Operating voltage U_c (ac), max.
Operating current, I_{max}
Volume resistance
Gas discharger
Varistor
Suppressor diodes
Cut-off freq. (-3dB) at load impedance
Leakage current, max. (8/20 μ s)
On output side, sym. 1kV/ μ s input, typical
On output side sym. at Input 8/20 μ s, typical
On the output side, unsymmetrical, Input 1kV/ μ s, typ.
On output side usym., Input 8/20 μ s, typical
Design
Type of connection
Stor. temp. min./Storage temp., max.
Oper. temp. min./Oper. temp. max.

48V
48V
54V
0.30A
3 Ω
Yes
Yes
Yes
1000.0kHz 480 Ω
7kA
82V
110V
82V
180V
terminal
screw connection
-25°C/85°C
-25°C/60°C

48V
48V
54V
0.30A
3 Ω
Yes
Yes
Yes
400.0kHz 240 Ω
7kA
82V
110V
110V
180V
terminal
screw connection
-25°C/85°C
-25°C/60°C

Type of connection

Clamping range (rating- / min. / max.) mm²
Length x width x height mm

2.50 / 0.50 / 4
65 x 6.0 x 60

2.50 / 0.50 / 4
76.80 x 6.0 x 72

Information

Ordering data

Type	Qty.	Order No.
DKU 35 48VUC 0,3A	10	8019290000
DKU 32 48VUC 0,3A	10	8019280000

Type	Qty.	Order No.
DKU DK5 48VUC 0,3A	10	8262470000

Information

DKU 35 Height 57mm

DKU DK5 TS35 Height 68mm

Accessories

Information

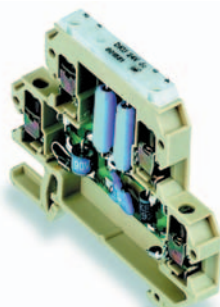
Overvoltage protection for instrumentation and control

3-step protection with screw connection

Slimline overvoltage protection terminal with screw connection

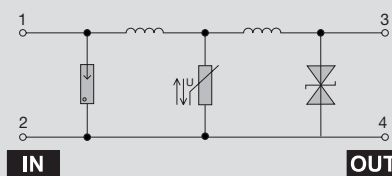
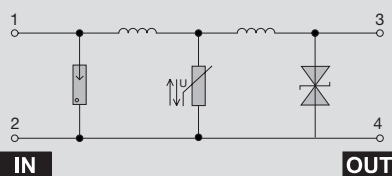
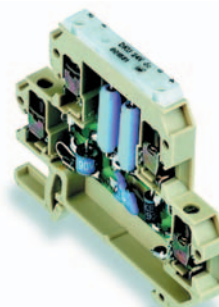
DKU 115Vuc 0.3A

DKU 115Vuc 0.3A



DKU 230Vuc 0.3A

DKU 230Vuc 0.3A



Technical data

Technical specification

Rated voltage Un (AC)
Rated voltage (DC)
Operating voltage Uc (ac), max.
Operating current, I_{max}
Volume resistance
Gas discharger
Varistor
Suppressor diodes
Cut-off freq. (-3dB) at load impedance
Leakage current, max. (8/20 μs)
On output side, sym. 1kV/μs input, typical
On output side sym. at Input 8/20μs, typical
On the output side, unsymmetrical, Input 1kV/μs, typ.
On output side usym., Input 8/20μs, typical
Design
Type of connection
Stor. temp. min./Storage temp., max.
Oper. temp. min./Oper. temp. max.

115V
115V
122V
0.30A
3Ω
Yes
Yes
Yes
1.0Mhz 50Ω
7kA
180V
220V
180V
220V
terminal
screw connection
-25°C/85°C
-25°C/60°C

230V
230V
240V
0.30A
3Ω
Yes
Yes
Yes
1.0Mhz 2200Ω
7kA
400V
520V
400V
520V
terminal
screw connection
-25°C/85°C
-25°C/60°C

Type of connection

Clamping range (rating- / min. / max.) mm²
Length x width x height mm

2.50 / 0.50 / 4
65 x 6.0 x 60

2.50 / 0.50 / 4
65 x 12.0 x 60

Information

Ordering data

Type	Qty.	Order No.
DKU 32 115VUC 0,3A	10	8019300000
DKU 35 115VUC 0,3A	10	8019310000

Type	Qty.	Order No.
DKU 32 230VUC 0,3A	10	8019320000
DKU 35 230VUC 0,3A	10	8019330000

Information

DKU 35 Height 57mm

DKU 35 Height 57mm

Accessories

Information

Articles with coloured order number are kept permanently in stock at the central warehouse in Germany.
Delivery times see page X.2

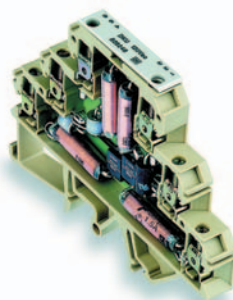
Overvoltage protection for instrumentation and control

3-step protection with screw connection

Slimline overvoltage protection terminal with screw clamp

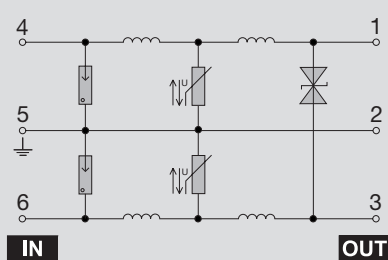
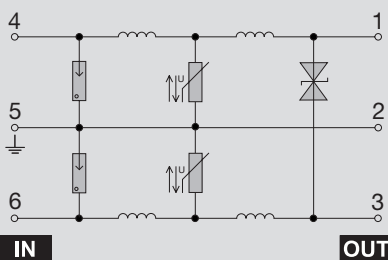
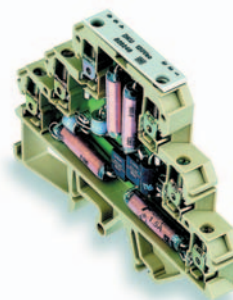
DKU DK6 120Vuc

DKU DK6 120Vuc 0.3A



DKU DK6 230Vuc

DKU DK6 230Vuc 0.3A



Technical data

Technical specification

Rated voltage U_n (AC)
 Rated voltage (DC)
 Operating voltage U_c (ac), max.
 Operating current, I_{max}
 Volume resistance
 Gas discharger
 Varistor
 Suppressor diodes
 Cut-off freq. (-3dB) at load impedance
 Leakage current, max. (8/20 μ s)
 On output side, sym. 1kV/ μ s input, typical
 On output side sym. at Input 8/20 μ s, typical
 On the output side, unsymmetrical, Input 1kV/ μ s, typ.
 On output side usym., Input 8/20 μ s, typical
 Design
 Type of connection
 Stor. temp. min./Storage temp., max.
 Oper. temp. min./Oper. temp. max.

120V
 120V
 130V
 0.30A
 0.30 Ω
 Yes
 Yes
 Yes
 Yes
 22.0kHz 120 Ω
 7kA
 220V
 290V
 290V
 350V
 terminal
 screw connection
 -25°C/85°C
 -25°C/60°C

230V
 230V
 240V
 0.30A
 0.30 Ω
 Yes
 Yes
 Yes
 Yes
 22.0kHz 120 Ω
 7kA
 600V
 800V
 820V
 950V
 terminal
 screw connection
 -25°C/85°C
 -25°C/60°C

Type of connection

Clamping range (rating- / min. / max.) mm²
 Length x width x height mm

2.50 / 0.50 / 4
 88.40 x 8.0 x 73

2.50 / 0.50 / 4
 88.40 x 8.0 x 73

Information

Ordering data

Type	Qty.	Order No.
DKU DK6 120VAC 1,0A	10	8262480000

Type	Qty.	Order No.
DKU DK6 230VAC 1,0A	10	8263760000

Information

DK6U TS35 Height 69mm

DK6U TS35 Height 69mm

Accessories

Information

Overvoltage protection for measurement and control engineering

EGU 1 50 mA

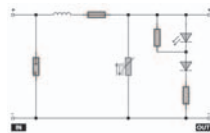
e.g. for binary signals

Dimensions

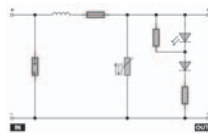
I x w x h = 58 x 63 x 20 mm



Main line circuit diagram



Main line circuit diagram



Data	
Current per path imax	50 mA
Resistance per path max	28 Ω
Fuse 5x20	F 63 mA
Model, protection	EG 2 IP20
Screw connection	0,5 ... 6 mm ²

50 mA	
28 Ω	
F 63 mA	
EG 2 IP20	
0,5 ... 6 mm ²	

Order data	
Type	Order no.
EGU 1, 24 Vdc	0243960000
Technical data	
Voltage, Un 1.2:	24 Vdc
Voltage, Uc 1.2:	30 Vac / 38 Vdc
Rated data of components	Gas charge eliminator:
	90 V 5 kA
	Varistor:
	30 V
Cut-off frequency (-3dB/load impedance):	20 kHz / 500 Ω
Leakage current, Imax. (8/20μs) typical:	6 kA
Protection level on output side, symmetrical	
for 1 kV/μs pulse at input, typical	55 V
for 8/20μs (rated leakage current), typical	75 V
Level of protection on output side, asymmetrical	
for 1 kV/μs pulse at input, typical	55 V
for 8/20 μs (rated leakage current), typical	75 V

Type	Order no.
EGU 1, 48 Vdc	0244460000
48 Vdc	
60 Vac / 85 Vdc	
230 V 5 kA	
110 V	
40 kHz / 1000 Ω	
6 kA	
130 V	
190 V	
130 V	
190 V	

Type	Order no.
EGU 1, 115 Vdc	0240560000
115 Vdc	
130 Vac / 170 Vdc	
230 V 5 kA	
130 V	
88 kHz / 2200 Ω	
6 kA	
180 V	
250 V	
180 V	
250 V	

Type	Order no.
EGU 1, 230 Vdc	0245060000
230 Vdc	
250 Vac / 320 Vdc	
600 V 20 kA	
275 V	
150 kHz / 4500 Ω	
24 kA	
300 V	
350 V	
300 V	
350 V	

EGU 2 50 mA

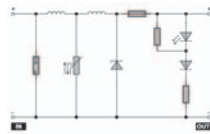
e.g. for binary signals

Dimensions

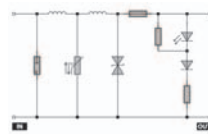
I x w x h = 58 x 63 x 20 mm



Main line circuit diagram



Main line circuit diagram



Data	
Current per path imax	50 mA
Resistance per path max	28 Ω
Fuse 5x20	F 63 mA
Model, protection	EG 2 IP20
Screw connection	0,5 ... 6 mm ²

50 mA	
28 Ω	
F 63 mA	
EG 2 IP20	
0,5 ... 6 mm ²	

Order data	
Type	Order no.
EGU 2, 24 Vdc	0223060000
Technical data	
Voltage, Un 1.2:	24 Vdc
Voltage, Uc 1.2:	28 Vdc
Rated data of components	Gas charge eliminator:
	90 V 5 kA
	Varistor:
	30 V
	Suppression diode:
	33 V
Cut-off frequency (-3dB/load impedance):	10 kHz / 500 Ω
Leakage current, Imax. (8/20μs) typical:	6 kA
Protection level on output side, symmetrical	
for 1 kV/μs pulse at input, typical	35 V
for 8/20μs (rated leakage current), typical	75 V
Level of protection on output side, asymmetrical	
for 1 kV/μs pulse at input, typical	55 V
for 8/20 μs (rated leakage current), typical	75 V

Type	Order no.
EGU 2, 48 Vdc	0226560000
48 Vdc	
55 Vac / 88 Vdc	
230 V 5 kA	
150 V	
86 V	
20 kHz / 500 Ω	
6 kA	
82 V	
120 V	
82 V	
120 V	

Type	Order no.
EGU 2, 115 Vdc	0226660000
115 Vdc	
130 Vac / 170 Vdc	
230 V 5 kA	
150 V	
170 V	
88 kHz / 2200 Ω	
6 kA	
230 V	
350 V	
230 V	
350 V	

Type	Order no.
EGU 2, 230 Vdc	0223260000
230 Vdc	
250 Vac / 320 Vdc	
600 V 20 kA	
275 V	
150 kHz / 4500 Ω	
24 kA	
600 V	
820 V	
600 V	
820 V	

EGU 2 1.5 A

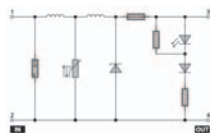
e.g. for power supply

Dimensions

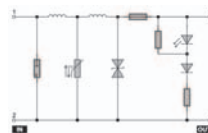
I x w x h = 58 x 63 x 20 mm



Main line circuit diagram



Main line circuit diagram



Data	
Current per path imax	1,5 A
Resistance per path max	0,2 Ω
Fuse 5x20	F 1,6 A
Model, protection	EG 2 IP20
Screw connection	0,5 ... 6 mm ²

1,5 A	
0,2 Ω	
F 1,6 A	
EG 2 IP20	
0,5 ... 6 mm ²	

Order data	
Type	Order no.
EGU 2, 24 Vdc	9310830000
Technical data	
Voltage, Un 1.2:	24 Vdc
Voltage, Uc 1.2:	28 Vdc
Rated data of components	Gas charge eliminator:
	90 V 5 kA
	Varistor:
	30 V
	Suppression diode:
	33 V
Cut-off frequency (-3dB/load impedance):	500 kHz / 16 Ω
Leakage current, Imax. (8/20μs) typical:	6 kA
Protection level on output side, symmetrical	
for 1 kV/μs pulse at input, typical	35 V
for 8/20μs (rated leakage current), typical	45 V
Level of protection on output side, asymmetrical	
for 1 kV/μs pulse at input, typical	55 V
for 8/20 μs (rated leakage current), typical	75 V

Type	Order no.
EGU 2, 48 Vdc	1170160000
48 Vdc	
55 Vac / 88 Vdc	
230 V 5 kA	
150 V	
86 V	
1 MHz / 32 Ω	
6 kA	
82 V	
120 V	
82 V	
120 V	

Type	Order no.
EGU 2, 115 Vdc	9311520000
115 Vdc	
130 Vac / 170 Vdc	
230 V 5 kA	
150 V	
170 V	
1,5 MHz / 70 Ω	
6 kA	
230 V	
350 V	
230 V	
350 V	

Type	Order no.
EGU 2, 230 Vdc	9311530000
230 Vdc	
250 Vac / 320 Vdc	
600 V 20 kA	
275 V	
264 V	
2 MHz / 150 Ω	
24 kA	
600 V	
820 V	
600 V	
820 V	

Overvoltage protection for measurement and control engineering

EGU 3 50 mA

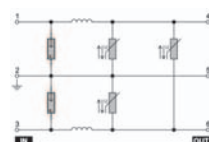
e.g. for circuit loops

Dimensions:

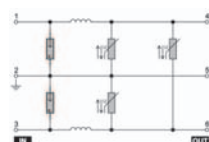
l x w x h = 58 x 95 x 22.5 mm



Main line circuit diagram



Main line circuit diagram



Data

Current per path max
Resistance per path max
Model, protection
Screw connection

50 mA
18 Ω
EG 3 IP20
0,5 ... 4 mm²

Order data

Technical data

Voltage, Un 1.3:
Voltage, Uc 1.3:
Rated data of components Gas charge eliminator:
Varistor:
Cut-off frequency (-3dB/load impedance):
Leakage current, I_{max}. (8/20μs) typical:
Protection level on output side, symmetrical
for 1 kV/μs pulse at input, typical
for 8/20μs (rated leakage current), typical
Level of protection on output side, asymmetrical
for 1 kV/μs pulse at input, typical
for 8/20 μs (rated leakage current), typical

Type	Order no.
EGU 3, 24 Vuc	0250560000
24 Vuc	
30 Vac / 38 Vdc	
90 V 5 kA	
30 V	
10 kHz / 500 Ω	
6 kA	
55 V	
75 V	
85 V	
105 V	

Type	Order no.
EGU 3, 48 Vuc	0250660000
48 Vuc	
60 Vac / 85 Vdc	
230 V 5 kA	
65 V	
20 kHz / 1000 Ω	
6 kA	
130 V	
150 V	
150 V	
190 V	

Type	Order no.
EGU 3, 115 Vuc	9311530000
115 Vuc	
130 Vac / 170 Vdc	
230 V 5 kA	
180 V	
44 kHz / 2200 Ω	
6 kA	
180 V	
220 V	
230 V	
290 V	

Type	Order no.
EGU 3, 230 Vuc	0250860000
230 Vuc	
250 Vac / 320 Vdc	
600 V 20 kA	
275V	
75 kHz / 4500 Ω	
24 kA	
300 V	
350 V	
400 V	
430 V	

EGU 3 1.5 A

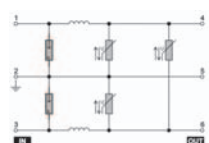
e.g. for power supply

Dimensions:

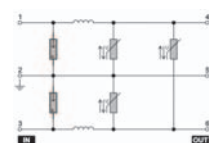
l x w x h = 58 x 95 x 22.5 mm



Main line circuit diagram



Main line circuit diagram



Data

Current per path max
Resistance per path max
Model, protection
Screw connection

1,5 A
0,1 Ω
EG 3 IP20
0,5 ... 4 mm²

Order data

Technical data

Voltage, Un 1.3:
Voltage, Uc 1.3:
Rated data of components Gas charge eliminator:
Varistor:
Cut-off frequency (-3dB/load impedance):
Leakage current, I_{max}. (8/20μs) typical:
Protection level on output side, symmetrical
for 1 kV/μs pulse at input, typical
for 8/20μs (rated leakage current), typical
Level of protection on output side, asymmetrical
for 1 kV/μs pulse at input, typical
for 8/20 μs (rated leakage current), typical

Type	Order no.
EGU 3, 24 Vuc	1186760000
24 Vuc	
30 Vac / 38 Vdc	
90 V 5 kA	
30 V	
300 kHz / 16 Ω	
6 kA	
55 V	
75 V	
85 V	
105 V	

Type	Order no.
EGU 3, 48 Vuc	1186960000
48 Vuc	
60 Vac / 85 Vdc	
230 V 5 kA	
65 V	
400 kHz / 32 Ω	
6 kA	
130 V	
150 V	
150 V	
190 V	

Type	Order no.
EGU 3, 115 Vuc	1186860000
115 Vuc	
130 Vac / 170 Vdc	
230 V 5 kA	
180 V	
550 kHz / 70 Ω	
6 kA	
180 V	
220 V	
230 V	
290 V	

Type	Order no.
EGU 3, 230 Vuc	1187060000
230 Vuc	
240 Vac / 315 Vdc	
600 V 20 kA	
275 V	
800 kHz / 150 Ω	
24 kA	
300 V	
350 V	
400 V	
430 V	

EGU 4 0.1 A

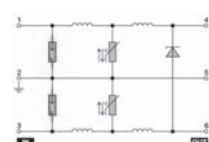
e.g. for circuit loops

Dimensions:

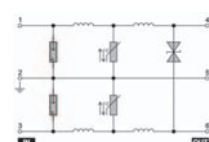
l x w x h = 58 x 95 x 22.5 mm



Main line circuit diagram



Main line circuit diagram



Data

Current per path max
Resistance per path max
Model, protection
Screw connection

100 mA
22 Ω
EG 3 IP20
0,5 ... 4 mm²

Order data

Technical data

Voltage, Un 1.3:
Voltage, Uc 1.3:
Rated data of components Gas charge eliminator:
Varistor:
Suppressor diode:
Cut-off frequency (-3dB/load impedance):
Leakage current, I_{max}. (8/20μs) typical:
Protection level on output side, symmetrical
for 1 kV/μs pulse at input, typical
for 8/20μs (rated leakage current), typical
Level of protection on output side, asymmetrical
for 1 kV/μs pulse at input, typical
for 8/20 μs (rated leakage current), typical

Type	Order no.
EGU 4, 24 Vdc	0459460000
24 Vdc	
28 Vdc	
90 V 5 kA	
30 V	
33 V	
5 kHz / 240 Ω	
6 kA	
33 V	
45 V	
48 V	
90 V	

Type	Order no.
EGU 4, 48 Vuc	0461860000
48 V uc	
55 Vac / 34 Vdc	
90 V 5 kA	
55 V	
48 V	
10 kHz / 240 Ω	
6 kA	
82 V	
130 V	
110 V	
150 V	

Type	Order no.
EGU 4, 115 Vuc	0461960000
115 Vuc	
130 Vac / 170 Vdc	
150 V 5kA	
75 V	
120 V	
20 kHz / 1200 Ω	
6 kA	
200 V	
250 V	
310 V	
350 V	

Type	Order no.
EGU 4, 230 Vuc	0462060000
230 Vuc	
250 Vac / 320 Vdc	
600 V 20 kA	
275 V	
240 V	
1 Mhz / 150 kΩ	
24 kA	
350 V	
420 V	
390 V	
480 V	

Overvoltage protection for measurement and control engineering

EGU 4 1.5 A

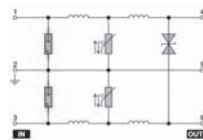
e.g. for power supply

Dimensions:

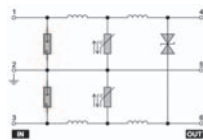
l x w x h = 58 x 95 x 22.5 mm



Main line circuit diagram



Main line circuit diagram



Data

Current per path max
Resistance per path max
Model, protection
Screw connection

1,5 A
0,1 Ω
EG 3 IP20
0,5 ... 4 mm ²

Order data

Technical data

Voltage, Un 1.3:	24 Vuc
Voltage, Uc 1.3:	34 Vac / 26,5 Vdc
Rated data of components	Gas charge eliminator:
	90 V 5 kA
	Varistor:
	30 V
	Suppressor diode:
	33 V
Cut-off frequency (-3dB/load impedance):	250 kHz / 16 Ω
Leakage current, Imax. (8/20 μ s) typical:	6 kA
Protection level on output side, symmetrical	
for 1 kV/ μ s pulse at input, typical	33 V
for 8/20 μ s (rated leakage current), typical	45 V
Level of protection on output side, asymmetrical	
for 1 kV/ μ s pulse at input, typical	48 V
for 8/20 μ s (rated leakage current), typical	90 V

Type	Order no.
EGU 4, 24 Vuc	1170960000

Type	Order no.
EGU 4, 48 Vuc	1171060000

Type	Order no.
EGU 4, 115 Vuc	1171160000

Type	Order no.
EGU 4, 230 Vuc	1171260000

EGU 4 0.1 A

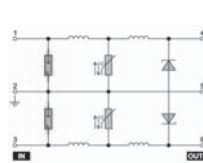
Z.B. für symmetrical loads

Abmessungen:

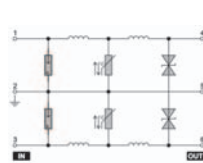
LxBxH = 58x95x22,5 mm



Main line circuit diagram



Main line circuit diagram



Data

Current per path max
Resistance per path max
Model, protection
Screw connection

100 mA
12 Ω
EG 3 IP20
0,5 ... 4 mm ²

Order data

Technical data

Voltage, Un 1.3:	24 Vdc
Voltage, Uc 1.3:	31 Vdc
Rated data of components	Gas charge eliminator:
	90 V 5 kA
	Varistor:
	30 V
	Suppressor diode:
	33 V
Cut-off frequency (-3dB/load impedance):	5 kHz / 240 Ω
Leakage current, Imax. (8/20 μ s) typical:	6 kA
Protection level on output side, symmetrical	
for 1 kV/ μ s pulse at input, typical	33 V
for 8/20 μ s (rated leakage current), typical	45 V
Level of protection on output side, asymmetrical	
for 1 kV/ μ s pulse at input, typical	66 V
for 8/20 μ s (rated leakage current), typical	110 V

Type	Order no.
EGU 4, 24 Vdc	1170560000

Type	Order no.
EGU 4, 48 Vuc	1170660000

Type	Order no.
EGU 4, 115 Vuc	1170760000

Type	Order no.
EGU 4, 230 Vuc	1170860000

Overvoltage protection for instrumentation and control

3-step protection with screw connection

Overvoltage protection RSU for power supplies

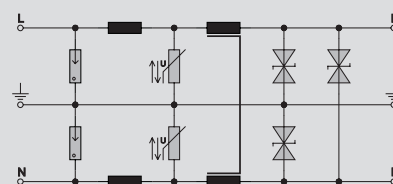
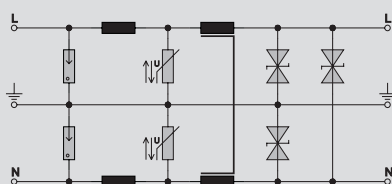
RSU 24Vuc 6A

RSU 24Vuc 6A



RSU 48Vuc 6A

RSU 48Vuc 6A



Technical data

Technical specification

Rated voltage U_n (AC)
 Rated voltage (DC)
 Operating voltage U_c (ac), max.
 Operating current, I_{max}
 Volume resistance
 Gas discharger
 Varistor
 Suppressor diodes
 Cut-off freq. (-3dB) at load impedance
 Leakage current, max. (8/20 μ s)
 On output side, sym. 1kV/ μ s input, typical
 On output side sym. at Input 8/20 μ s, typical
 On the output side, unsymmetrical, Input 1kV/ μ s, typ.
 On output side usym., Input 8/20 μ s, typical
 Design
 Type of connection
 Stor. temp. min./Storage temp., max.
 Oper. temp. min./Oper. temp. max.

24V
 24V
 27V
 6A
 0.08 Ω
 Yes
 Yes
 Yes
 8.0kHz 4 Ω
 24kA
 40V
 45V
 40V
 45V
 RS section
 screw connection
 -25°C/85°C
 -25°C/40°C

48V
 48V
 54V
 6A
 0.08 Ω
 Yes
 Yes
 Yes
 10.0kHz 8 Ω
 24kA
 82V
 130V
 82V
 130V
 RS section
 screw connection
 -25°C/85°C
 -25°C/40°C

Type of connection

Clamping range (rating- / min. / max.) mm²
 Length x width x height mm

2.50 / 0.50 / 4
 87 x 81.0 x 89

2.50 / 0.50 / 4
 87 x 81.0 x 89

Information

Ordering data

Type	Qty.	Order No.
RSU 24VUC 6A LP	1	1171361001

Type	Qty.	Order No.
RSU 48VUC 6A	1	1171461001

Information

Accessories

Information

Overvoltage protection for instrumentation and control

3-step protection with screw connection

Overvoltage protection RSU for power supplies

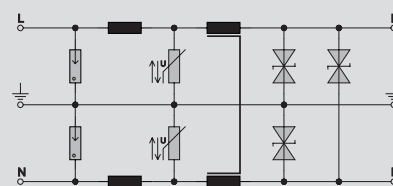
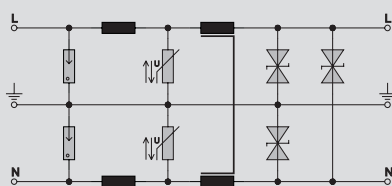
RSU 115Vuc 6A

RSU 115Vuc 6A



RSU 230Vuc 6A

RSU 230Vuc 6A



Technical data

Technical specification

Rated voltage Un (AC)
Rated voltage (DC)
Operating voltage Uc (ac), max.
Operating current, I_{max}
Volume resistance
Gas discharger
Varistor
Suppressor diodes
Cut-off freq. (-3dB) at load impedance
Leakage current, max. (8/20 μs)
On output side, sym. 1kV/μs input, typical
On output side sym. at Input 8/20μs, typical
On the output side, unsymmetrical, Input 1kV/μs, typ.
On output side usym., Input 8/20μs, typical
Design
Type of connection
Stor. temp. min./Storage temp., max.
Oper. temp. min./Oper. temp. max.

115V
115V
130V
6A
0.08Ω
Yes
Yes
Yes
30.0kHz 20Ω
24kA
200V
250V
200V
250V
RS section
screw connection
-25°C/70°C
-25°C/40°C

230V
230V
250V
6A
0.08Ω
Yes
Yes
Yes
90.0kHz 40kΩ
24kA
400V
420V
400V
420V
RS section
screw connection
-25°C/70°C
-25°C/40°C

Type of connection

Clamping range (rating- / min. / max.) mm²
Length x width x height mm

2.50 / 0.50 / 4
87 x 81.0 x 89

2.50 / 0.50 / 4
87 x 81.0 x 89

Information

Ordering data

Type	Qty.	Order No.
RSU 115VUC 6A	1	1171561001

Type	Qty.	Order No.
RSU 230VUC 6A	1	1171661001

Information

Accessories

Information

Articles with coloured order number are kept permanently in stock at the central warehouse in Germany.
Delivery times see page X.2

Overvoltage protection for instrumentation and control

3-step protection with screw connection

Overvoltage protection RSU for power supplies

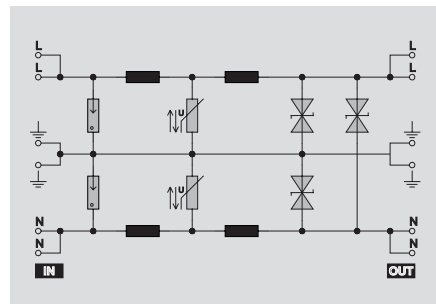
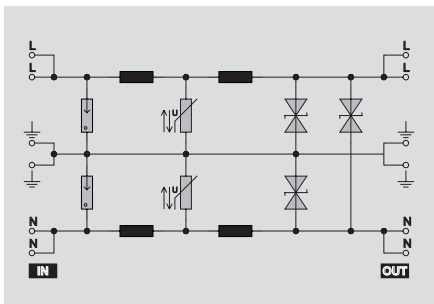
RSU 24Vuc 10A

RSU 24Vuc 10A



RSU 48Vuc 10A

RSU 48Vuc 10A



Technical data

Technical specification

Rated voltage U_n (AC)
 Rated voltage (DC)
 Operating voltage U_c (ac), max.
 Operating current, I_{max}
 Volume resistance
 Gas discharger
 Varistor
 Suppressor diodes
 Cut-off freq. (-3dB) at load impedance
 Leakage current, max. (8/20 μ s)
 On output side, sym. 1kV/ μ s input, typical
 On output side sym. at Input 8/20 μ s, typical
 On the output side, unsymmetrical, Input 1kV/ μ s, typ.
 On output side usym., Input 8/20 μ s, typical
 Design
 Type of connection
 Stor. temp. min./Storage temp., max.
 Oper. temp. min./Oper. temp. max.

24V
 24V
 27V
 10A
 0.04 Ω
 Yes
 Yes
 Yes
 8.0kHz 4 Ω
 24kA
 40V
 45V
 40V
 45V
 RS section
 screw connection
 -25°C/85°C
 -25°C/40°C

48V
 48V
 54V
 10A
 0.04 Ω
 Yes
 Yes
 Yes
 10.0kHz 8 Ω
 24kA
 82V
 130V
 82V
 130V
 RS section
 screw connection
 -25°C/85°C
 -25°C/40°C

Type of connection

Clamping range (rating- / min. / max.) mm²
 Length x width x height mm

2.50 / 0.50 / 4
 105 x 105.0 x 89

2.50 / 0.50 / 4
 105 x 105.0 x 89

Information

Ordering data

Type	Qty.	Order No.
RSU 24VUC 10A	1	8104201001

Type	Qty.	Order No.
RSU 48VUC 10A	1	8025371001

Information

Accessories

Information

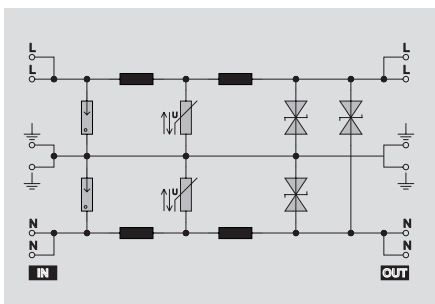
Overvoltage protection for instrumentation and control

3-step protection with screw connection

Overvoltage protection RSU for power supplies

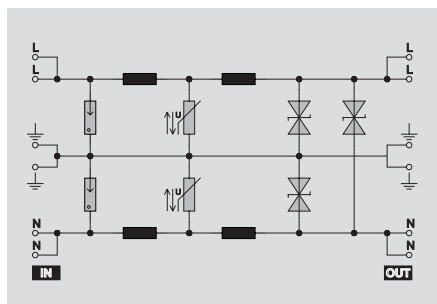
RSU 115Vuc 10A

RSU 115Vuc 10A



RSU 230Vuc 10A

RSU 230Vuc 10A



Technical data

Technical specification

Rated voltage Un (AC)
Rated voltage (DC)
Operating voltage Uc (ac), max.
Operating current, I_{max}
Volume resistance
Gas discharger
Varistor
Suppressor diodes
Cut-off freq. (-3dB) at load impedance
Leakage current, max. (8/20 μs)
On output side, sym. 1kV/μs input, typical
On output side sym. at Input 8/20μs, typical
On the output side, unsymmetrical, Input 1kV/μs, typ.
On output side usym., Input 8/20μs, typical
Design
Type of connection
Stor. temp. min./Storage temp., max.
Oper. temp. min./Oper. temp. max.

115V
115V
130V
10A
0.04Ω
Yes
Yes
Yes
30.0kHz 20Ω
24kA
200V
250V
200V
250V
RS section
screw connection
-25°C/70°C
-25°C/40°C

230V
230V
250V
10A
0.04Ω
Yes
Yes
Yes
90.0kHz 40kΩ
24kA
400V
420V
400V
420V
RS section
screw connection
-25°C/70°C
-25°C/40°C

Type of connection

Clamping range (rating- / min. / max.) mm²
Length x width x height mm

2.50 / 0.50 / 4
105 x 105.0 x 89

2.50 / 0.50 / 4
105 x 105.0 x 89

Information

Ordering data

Type	Qty.	Order No.
RSU 115VUC 10A	1	8104221001

Type	Qty.	Order No.
RSU 230VUC 10A LP	1	8093281001

Information

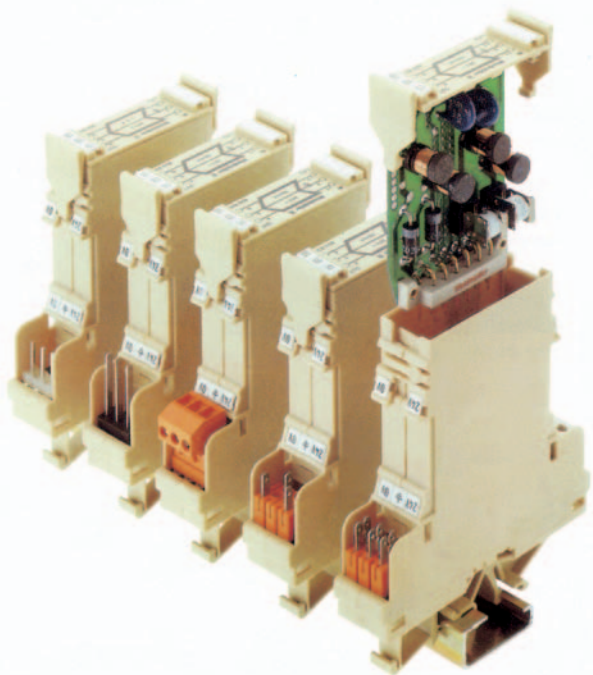
Accessories

Information

Articles with coloured order number are kept permanently in stock at the central warehouse in Germany.
Delivery times see page X.2

Overvoltage protection for measurement and control engineering

Overvoltage protection for measurement and control engineering, pluggable protection



Pluggable overvoltage protection

Weidmüller's LPU series consists of a module and an SEG-U integral housing, which must be ordered separately. These tried-and-tested protective components can be used in process, industrial and building services automation. The SEG-U housing can be connected in different ways to satisfy the user's requirements. The screw connection is standard, but screw/plug, thermipoint, core-wrap and spade connections are also possible. The plug-in module offers test functions if required: a visual check and electrical testing of the individual components is possible. The three-stage LPU boards work with gas charge eliminators, varistors, suppressor diodes (TAZ) and decoupling indicators. The LPU modules are characterised by a high protective function for currents up to 1.5 A. They are available in rated voltages of 24 V, 48 V, 115 V and 230 V.

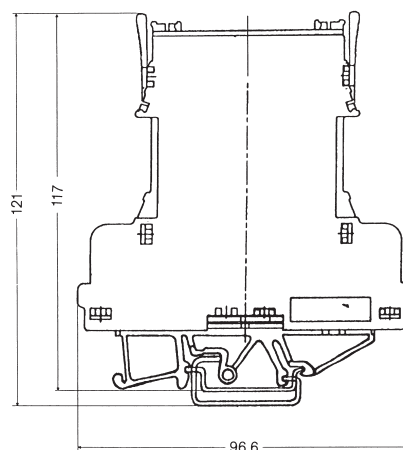
Three different LPU modules are available.

- Two signal lines are isolated from against earth (suitable for binary signals).
- One analogue signal is protected against each other and against earth (0 ... 20 mA circuits)
- One potential free signal is given high-ohm protection against earth and each other (suitable for thermocouple signals).

A test case is available for the electrical tests. The protective elements integrated in the PLU module, such as overvoltage protection terminal filled with gas, varistors and suppressor diodes, can be tested to check rated data and permissible tolerances. The integral inductors are also checked for continuity.

Test results are displayed as red/green LEDs or printed ou on the integral printer. A self-test is performed after switching on the test case. The LPU module automatically undergoes electric testing when the LPU overvoltage protection is plugged in.

SEG-U



Width 20 mm
Screw connection
flexible 0.5...2.5 mm²
flexible 0.5...4 mm²

Test case



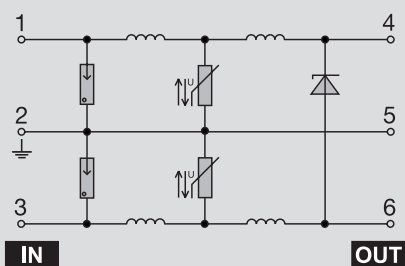
Overvoltage protection for instrumentation and control

3-step protection on circuit card

Pluggable overvoltage protection LPU

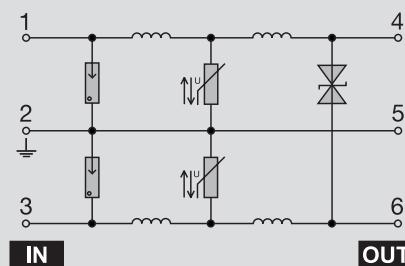
LPU 24Vdc 100mA

LPU 24Vdc/0.1A



LPU 48Vuc 100mA

LPU 48Vuc/0.1A



Technical data

Technical specification

Rated voltage U_n (AC)
 Rated voltage (DC)
 Operating voltage U_c (ac), max.
 Operating current, I_{max}
 Volume resistance
 Gas discharger
 Varistor
 Suppressor diodes
 Cut-off freq. (-3dB) at load impedance
 Leakage current, max. (8/20 μ s)
 On output side, sym. 1kV/ μ s input, typical
 On output side sym, at Input 8/20 μ s, typical
 On the output side, unsymmetrical, Input 1kV/ μ s, typ.
 On output side usym., Input 8/20 μ s, typical
 Design
 Type of connection
 Stor. temp. min./Storage temp., max.
 Oper. temp. min./Oper. temp. max.

24V
 29V
 0.10A
 12.50 Ω
 Yes
 Yes
 Yes
 7.5kHz 240 Ω
 6kA
 34V
 45V
 34V
 45V
 plug card
 push-on connection
 -25°C/85°C
 -25°C/60°C

48V
 48V
 53V
 0.10A
 12.50 Ω
 Yes
 Yes
 Yes
 9.0kHz 480 Ω
 6kA
 82V
 130V
 82V
 130V
 plug card
 push-on connection
 -25°C/85°C
 -25°C/60°C

Dimensions

Clamping range (rating- / min. / max.) mm²
 Length x width x height mm

Information

push-on connection

96.60 x 20.0 x 117

Height incl. housing SEG-U

push-on connection

96.60 x 20.0 x 117

Height incl. housing SEG-U

Ordering data

Version

Type	Qty.	Order No.
LPU 24VDC/100MA	1	8008300000

Type	Qty.	Order No.
LPU 48VUC/100MA	1	8008330000

Information

Testable with the test case

Testable with the test case

Accessories

Information

SEG-U 8007871001

SEG-U 8007871001

Articles with coloured order number are kept permanently in stock at the central warehouse in Germany.
 Delivery times see page X.2

Overvoltage protection for instrumentation and control

3-step protection on circuit card

Pluggable overvoltage protection LPU

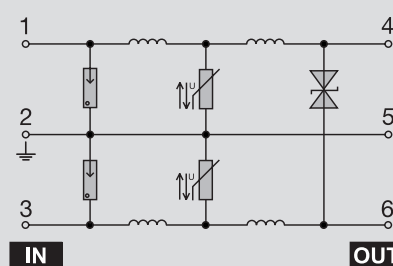
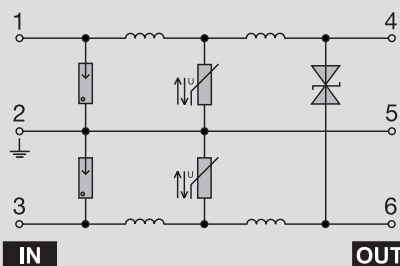
LPU 115Vuc 100mA

LPU 115Vuc/0.1A



LPU 230Vuc 100mA

LPU 230Vuc/0.1A



Technical data

Technical specification

Rated voltage U_n (AC)
 Rated voltage (DC)
 Operating voltage U_c (ac), max.
 Operating current, I_{max}
 Volume resistance
 Gas discharger
 Varistor
 Suppressor diodes
 Cut-off freq. (-3dB) at load impedance
 Leakage current, max. (8/20 μ s)
 On output side, sym. 1kV/ μ s input, typical
 On output side sym. at Input 8/20 μ s, typical
 On the output side, unsymmetrical, Input 1kV/ μ s, typ.
 On output side usym., Input 8/20 μ s, typical
 Design
 Type of connection
 Stor. temp. min./Storage temp., max.
 Oper. temp. min./Oper. temp. max.

115V
 115V
 130V
 0.10A
 12.50 Ω
 Yes
 Yes
 Yes
 9.0kHz 1100 Ω
 6kA
 200V
 250V
 200V
 250V
 plug card
 push-on connection
 -25°C/85°C
 -25°C/60°C

230V
 230V
 240V
 0.10A
 12.50 Ω
 Yes
 Yes
 Yes
 40.0kHz 2200 Ω
 6kA
 400V
 420V
 400V
 420V
 plug card
 push-on connection
 -25°C/85°C
 -25°C/60°C

Dimensions

Clamping range (rating- / min. / max.) mm²
 Length x width x height mm

Information

push-on connection

96.60 x 20.0 x 117
 Height incl. housing SEG-U

push-on connection

96.60 x 20.0 x 117
 Height incl. housing SEG-U

Ordering data

Version

Type	Qty.	Order No.
LPU 115VUC/100MA	1	8008350000

Type	Qty.	Order No.
LPU 230VUC/100MA	1	8008380000

Information

Testable with the test case

Testable with the test case

Accessories

Information

SEG-U 8007871001

SEG-U 8007871001

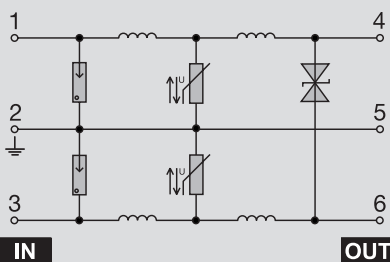
Overvoltage protection for instrumentation and control

3-step protection on circuit card

Pluggable overvoltage protection LPU

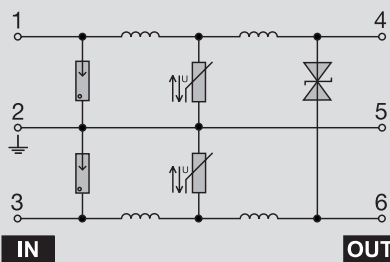
LPU 24Vuc 1.5A

LPU 24Vuc/1.5A



LPU 48Vuc 1.5A

LPU 48Vuc/1.5A



Technical data

Technical specification

Rated voltage U_n (AC)
 Rated voltage (DC)
 Operating voltage U_c (ac), max.
 Operating current, I_{max}
 Volume resistance
 Gas discharger
 Varistor
 Suppressor diodes
 Cut-off freq. (-3dB) at load impedance
 Leakage current, max. (8/20 μ s)
 On output side, sym. 1kV/ μ s input, typical
 On output side sym. at Input 8/20 μ s, typical
 On the output side, unsymmetrical, Input 1kV/ μ s, typ.
 On output side usym., Input 8/20 μ s, typical
 Design
 Type of connection
 Stor. temp. min./Storage temp., max.
 Oper. temp. min./Oper. temp. max.

24V
 24V
 27V
 1.50A
 0.20 Ω
 Yes
 Yes
 Yes
 150.0kHz 16 Ω
 6kA
 34V
 45V
 34V
 45V
 plug card
 push-on connection
 -25°C/85°C
 -25°C/50°C

48V
 48V
 53V
 1.50A
 0.20 Ω
 Yes
 Yes
 Yes
 300.0kHz 32 Ω
 6kA
 82V
 130V
 82V
 130V
 plug card
 push-on connection
 -25°C/85°C
 -25°C/50°C

Dimensions

Clamping range (rating- / min. / max.) mm²
 Length x width x height mm

Information

push-on connection

96.60 x 20.0 x 117

Height incl. housing SEG-U

push-on connection

96.60 x 20.0 x 117

Height incl. housing SEG-U

Ordering data

Version

Type	Qty.	Order No.
LPU 24VUC/1,5A	1	8008430000

Testable with the test case

Type	Qty.	Order No.
LPU 48VUC/1,5A	1	8008440000

Testable with the test case

Accessories

Information

SEG-U 8007871001

SEG-U 8007871001

Articles with coloured order number are kept permanently in stock at the central warehouse in Germany.
 Delivery times see page X.2

Overvoltage protection for instrumentation and control

3-step protection on circuit card

Pluggable overvoltage protection LPU

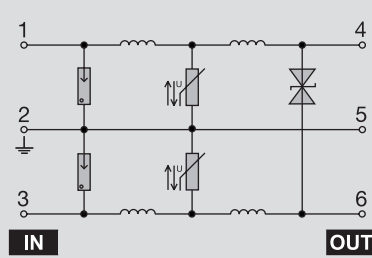
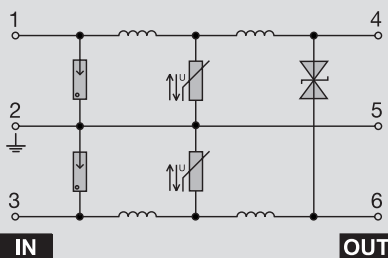
LPU 115Vuc 1.5A

LPU 115Vuc/1.5A



LPU 230Vuc 1.5A

LPU 230Vuc/1.5A



Technical data

Technical specification

Rated voltage U_n (AC)
Rated voltage (DC)
Operating voltage U_c (ac), max.
Operating current, I_{max}
Volume resistance
Gas discharger
Varistor
Suppressor diodes
Cut-off freq. (-3dB) at load impedance
Leakage current, max. (8/20 μ s)
On output side, sym. 1kV/ μ s input, typical
On output side sym. at Input 8/20 μ s, typical
On the output side, unsymmetrical, Input 1kV/ μ s, typ.
On output side usym., Input 8/20 μ s, typical
Design
Type of connection
Stor. temp. min./Storage temp., max.
Oper. temp. min./Oper. temp. max.

115V
115V
130V
1.50A
0.20 Ω
Yes
Yes
Yes
600.0kHz 70k Ω
6kA
200V
250V
200V
250V
plug card
push-on connection
-25°C/85°C
-25°C/50°C

230V
230V
250V
1.50A
0.20 Ω
Yes
Yes
Yes
1.0MHz 150k Ω
6kA
400V
420V
400V
420V
plug card
push-on connection
-25°C/85°C
-25°C/50°C

Dimensions

Clamping range (rating- / min. / max.) mm²
Length x width x height mm

Information

push-on connection

96.60 x 20.0 x 117

Height incl. housing SEG-U

push-on connection

96.60 x 20.0 x 117

Height incl. housing SEG-U

Ordering data

Version

Type	Qty.	Order No.
LPU 115VUC/1,5A	1	8008450000

Type	Qty.	Order No.
LPU 230VUC/1,5A	1	8008460000

Information

Testable with the test case

Testable with the test case

Accessories

Information

SEG-U 8007871001

SEG-U 8007871001

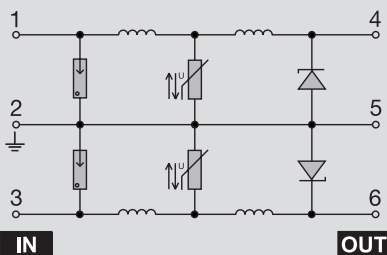
Overvoltage protection for instrumentation and control

3-step protection on circuit card

Pluggable overvoltage protection LPU

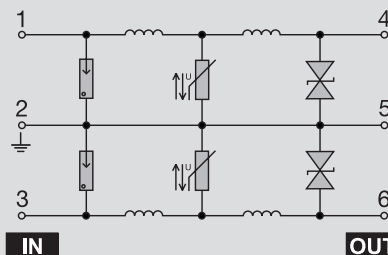
LPU 24Vdc 100mA SL

LPU 24Vdc/0.1A



LPU 48 Vuc 100mA SL

LPU 48Vuc/0.1A



Technical data

Technical specification

Rated voltage U_n (AC)
 Rated voltage (DC)
 Operating voltage U_c (ac), max.
 Operating current, I_{max}
 Volume resistance
 Gas discharger
 Varistor
 Suppressor diodes
 Cut-off freq. (-3dB) at load impedance
 Leakage current, max. (8/20 μ s)
 On output side, sym. 1kV/ μ s input, typical
 On output side sym. at Input 8/20 μ s, typical
 On the output side, unsymmetrical, Input 1kV/ μ s, typ.
 On output side usym., Input 8/20 μ s, typical
 Design
 Type of connection
 Stor. temp. min./Storage temp., max.
 Oper. temp. min./Oper. temp. max.

24V
 29V
 0.10A
 12.50 Ω
 Yes
 Yes
 Yes
 7.5kHz 240 Ω
 6kA
 34V
 45V
 60V
 90V
 plug card
 push-on connection
 -25°C/85°C
 -25°C/60°C

48V
 48V
 53V
 0.10A
 12.50 Ω
 Yes
 Yes
 Yes
 17.0kHz 480 Ω
 6kA
 82V
 130V
 160V
 260V
 plug card
 push-on connection
 -25°C/85°C
 -25°C/60°C

Dimensions

Clamping range (rating- / min. / max.) mm²
 Length x width x height mm

Information

push-on connection

96.60 x 20.0 x 117
 Height incl. housing SEG-U

push-on connection

96.60 x 20.0 x 117
 Height incl. housing SEG-U

Ordering data

Version

Type	Qty.	Order No.
LPU 24VDC/100MA	1	8008230000

Type	Qty.	Order No.
LPU 48VUC/100MA	1	8008250000

Information

Testable with the test case

Testable with the test case

Accessories

Information

SEG-U 8007871001

SEG-U 8007871001

Articles with coloured order number are kept permanently in stock at the central warehouse in Germany.
 Delivery times see page X.2

Overvoltage protection for instrumentation and control

3-step protection on circuit card

Pluggable overvoltage protection LPU

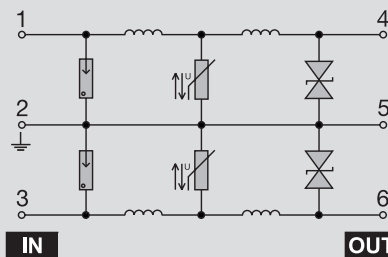
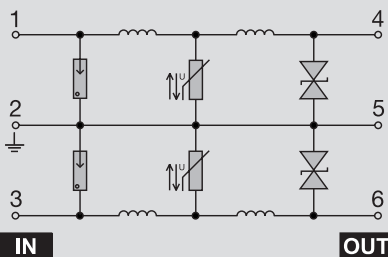
LPU 230Vuc 100mA SL

LPU 230V/uc/0.1A



LPU 115Vuc 100mA SL

LPU 115Vuc/0.1A



Technical data

Technical specification

Rated voltage U_n (AC)
 Rated voltage (DC)
 Operating voltage U_c (ac), max.
 Operating current, I_{max}
 Volume resistance
 Gas discharger
 Varistor
 Suppressor diodes
 Cut-off freq. (-3dB) at load impedance
 Leakage current, max. (8/20 μ s)
 On output side, sym. 1kV/ μ s input, typical
 On output side sym, at Input 8/20 μ s, typical
 On the output side, unsymmetrical, Input 1kV/ μ s, typ.
 On output side usym., Input 8/20 μ s, typical
 Design
 Type of connection
 Stor. temp. min./Storage temp., max.
 Oper. temp. min./Oper. temp. max.

230V
 230V
 250V
 0.10A
 12.50 Ω
 Yes
 Yes
 Yes
 80.0kHz 2200 Ω
 6kA
 400V
 420V
 800V
 820V
 plug card
 push-on connection
 -25°C/85°C
 -25°C/60°C

115V
 115V
 130V
 0.10A
 12.50 Ω
 Yes
 Yes
 Yes
 40.0kHz 1100 Ω
 6kA
 200V
 250V
 400V
 500V
 plug card
 push-on connection
 -25°C/85°C
 -25°C/60°C

Dimensions

Clamping range (rating- / min. / max.) mm²
 Length x width x height mm

Information

push-on connection

96.60 x 20.0 x 117

Height incl. housing SEG-U

push-on connection

96.60 x 20.0 x 117

Height incl. housing SEG-U

Ordering data

Version

Type	Qty.	Order No.
LPU 230VUC/100MA	1	8008280000

Type	Qty.	Order No.
LPU 115VUC/100MA	1	8008260000

Information

Testable with the test case

Testable with the test case

Accessories

Information

SEG-U 8007871001

SEG-U 8007871001

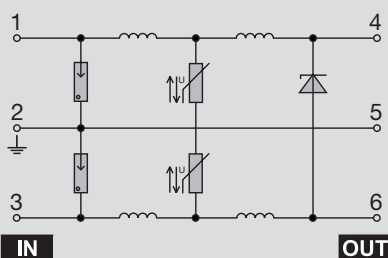
Overvoltage protection for instrumentation and control

3-step protection on circuit card

Pluggable overvoltage protection LPU

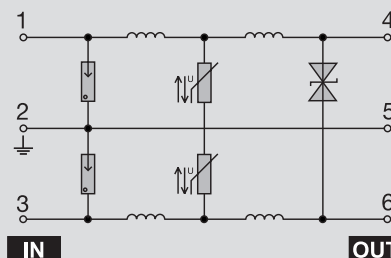
LPU 24Vdc/0,1A

LPU 24Vdc 100mA floating



LPU 48Vuc/0,1A

LPU 48Vuc 100mA floating



Technical data

Technical specification

Rated voltage U_n (AC)
 Rated voltage (DC)
 Operating voltage U_c (ac), max.
 Operating current, I_{max}
 Volume resistance
 Gas discharger
 Varistor
 Suppressor diodes
 Cut-off freq. (-3dB) at load impedance
 Leakage current, max. (8/20 μ s)
 On output side, sym. 1kV/ μ s input, typical
 On output side sym. at Input 8/20 μ s, typical
 On the output side, unsymmetrical, Input 1kV/ μ s, typ.
 On output side usym., Input 8/20 μ s, typical
 Design
 Type of connection
 Stor. temp. min./Storage temp., max.
 Oper. temp. min./Oper. temp. max.

24V
 29V
 0.10A
 12.50 Ω
 Yes
 Yes
 Yes
 7.5kHz 240 Ω
 6kA
 34V
 45V
 600V
 700V
 plug card
 push-on connection
 -25°C/85°C
 -25°C/60°C

48V
 48V
 53V
 0.10A
 12.50 Ω
 Yes
 Yes
 Yes
 17.0kHz 480 Ω
 6kA
 82V
 130V
 600V
 700V
 plug card
 push-on connection
 -25°C/85°C
 -25°C/60°C

Dimensions

Clamping range (rating- / min. / max.) mm²
 Length x width x height mm

Information

push-on connection

96.60 x 20.0 x 117
 Height incl. housing SEG-U

push-on connection

96.60 x 20.0 x 117
 Height incl. housing SEG-U

Ordering data

Version

Type	Qty.	Order No.
LPU 24VDC/100MA	1	8008390000

Type	Qty.	Order No.
LPU 48VUC/100MA	1	8008400000

Information

Testable with the test case

Testable with the test case

Accessories

Information

SEG-U 8007871001

SEG-U 8007871001

Articles with coloured order number are kept permanently in stock at the central warehouse in Germany.
 Delivery times see page X.2

Overvoltage protection for instrumentation and control

3-step protection on circuit card

Pluggable overvoltage protection LPU

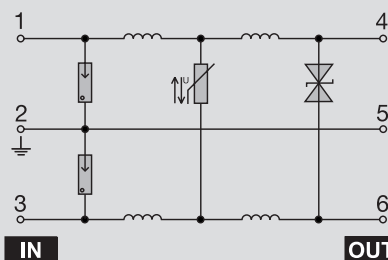
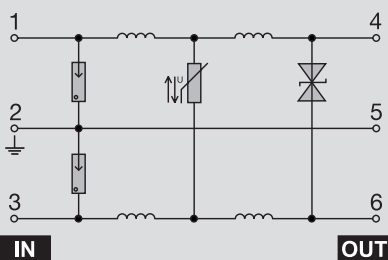
LPU 115Vuc/0,1A

LPU 115Vuc 100mA floating



LPU 230Vuc/0,1A

LPU 230Vuc 100mA floating



Technical data

Technical specification

Rated voltage U_n (AC)
 Rated voltage (DC)
 Operating voltage U_c (ac), max.
 Operating current, I_{max}
 Volume resistance
 Gas discharger
 Varistor
 Suppressor diodes
 Cut-off freq. (-3dB) at load impedance
 Leakage current, max. (8/20 μ s)
 On output side, sym. 1kV/ μ s input, typical
 On output side sym, at Input 8/20 μ s, typical
 On the output side, unsymmetrical, Input 1kV/ μ s, typ.
 On output side usym., Input 8/20 μ s, typical
 Design
 Type of connection
 Stor. temp. min./Storage temp., max.
 Oper. temp. min./Oper. temp. max.

115V
 115V
 130V
 0.10A
 12.50 Ω
 Yes
 Yes
 Yes
 40.0kHz 1100 Ω
 6kA
 200V
 220V
 600V
 700V
 plug card
 push-on connection
 -25°C/85°C
 -25°C/60°C

230V
 230V
 250V
 0.10A
 12.50 Ω
 Yes
 Yes
 Yes
 80.0kHz 2200 Ω
 6kA
 400V
 420V
 600V
 700V
 plug card
 push-on connection
 -25°C/85°C
 -25°C/60°C

Dimensions

Clamping range (rating- / min. / max.) mm²
 Length x width x height mm

Information

push-on connection

96.60 x 20.0 x 117
 Height incl. housing SEG-U

push-on connection

96.60 x 20.0 x 117
 Height incl. housing SEG-U

Ordering data

Version

Type	Qty.	Order No.
LPU 115VUC/100MA	1	8008410000

Type	Qty.	Order No.
LPU 230VUC/100MA	1	8008420000

Information

Testable with the test case

Testable with the test case

Accessories

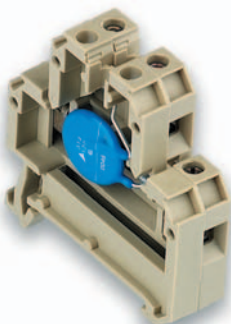
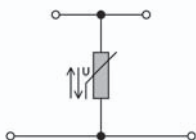
Information

SEG-U 8007871001

SEG-U 8007871001

Overvoltage protection for measurement and control engineering

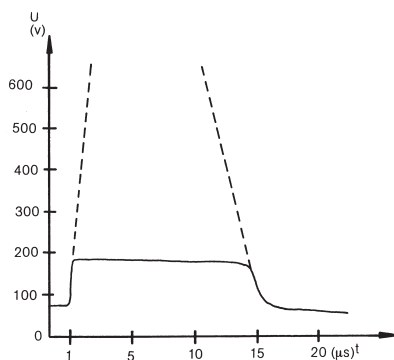
With varistor in terminal design



Varistors

Metal oxide varistors are used in the terminal design. They are approved for the maximum sinusoidal operating ac voltage indicated on the component. Any voltage exceeding the stated voltage is discharged safely. Varistors can be used for medium to large ratings.

DK 4 U S 20 K 130



Rated data DK 4 U

Type	U _{eff} V	U ₋ V	Energy J	Surge current A	Energy J	Surge current A	Leak current V	V	Capacity pF	Order no. TS 32	
TS 35											
S 14	11	14	1.6	1000	0.07	75	36	18	18000	on request	9401400000
	14	18	2.0	1000	0.08	75	42	22	15000	9401010000	on request
	17	22	2.7	1000	0.11	75	52	27	10000	9401020000	on request
	20	26	3.3	1000	0.13	75	65	33	7500	9401030000	9401430000
	25	31	3.7	1000	0.15	75	75	39	6500	9401040000	9401440000
Preferred types 24 V	30	38	4.4	1000	0.17	75	90	47	5500	9401050000	9401450000
	35	45	5.2	1000	0.23	75	110	56	4500	on request	on request
	40	56	6.8	1000	0.27	75	125	68	3300	9401070000	9401470000
Preferred types 48 V	50	65	27.0	4500	0.6	150	135	82	2900	9401080000	9401480000
	60	85	30.0	4500	0.7	150	155	100	2400	9401090000	9401490000
	75	100	38.0	4500	0.8	150	185	120	1900	9401100000	9401500000
Preferred types 115 V	95	125	45.0	4500	1.0	150	230	150	1500	on request	on request
	130	170	55.0	4500	1.3	150	315	205	1000	9401120000	9401520000
	140	180	60.0	4500	1.5	150	330	220	1000	on request	on request
	150	200	65.0	4500	1.5	150	350	240	900	on request	9401540000
	175	225	68.0	4500	1.6	150	420	270	750	on request	on request
	230	300	85.0	4500	2.1	150	560	360	550	on request	9401560000
Preferred types 230 V	250	320	92.0	4500	2.4	150	610	390	500	on request	9401570000
	275	350	100.0	6500	2.5	190	660	430	450	9401180000	9401580000
	300	385	110.0	6500	2.6	190	740	470	400	9401190000	9401590000
S 20	11	14	3.0	2000	0.12	125	32	18	37000	on request	on request
	14	18	4.0	2000	0.15	125	38	22	30000	on request	on request
	17	22	5.6	2000	0.19	125	48	27	22000	on request	9401620000
	20	26	6.6	2000	0.24	125	60	33	17000	on request	9401630000
Preferred types 24 V	25	31	7.8	2000	0.28	125	70	39	15000	9401240000	9401640000
	30	38	9.0	2000	0.35	125	85	47	13000	9401250000	9401650000
	35	45	10.8	2000	0.40	125	100	56	11000	on request	on request
	40	56	14.0	2000	0.48	125	120	68	7000	9401270000	on request
Preferred types 48 V	50	65	36.0	6500	0.5	190	120	82	5500	on request	9401680000
	60	85	45.0	6500	0.7	190	150	100	4800	on request	9401690000
	75	100	55.0	6500	0.8	190	180	120	3800	on request	on request
Preferred types 115 V	95	125	65.0	6500	1.0	190	220	150	3000	on request	on request
	130	170	80.0	6500	1.4	190	300	205	2000	9401320000	9401720000
	140	180	90.0	6500	1.5	190	320	220	2000	9401330000	9401730000
	150	200	95.0	6500	1.6	190	340	240	1800	on request	9401740000
	175	225	110.0	6500	1.8	190	390	270	1600	on request	on request
	230	300	130.0	6500	2.4	190	550	360	1200	9401360000	9401760000
Preferred types 230 V	250	320	140.0	6500	2.7	190	600	390	1000	9401370000	9401770000
	275	350	150.0	8000	2.9	300	640	430	900	9401380000	9401780000
	300	385	160.0	8000	3.0	300	700	470	900	on request	9401790000

12 mm wide

Overvoltage protection for measurement and control engineering

DK 4 U with gas charge eliminator or suppression diode



Gas charge eliminator

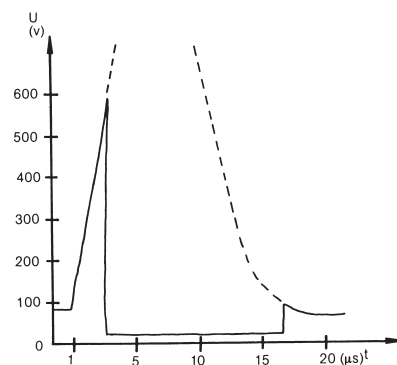
The gas charge eliminator consists of two electrodes spaced a defined distance apart, enclosed in a small glass or ceramic tube. Between the electrodes is an inert gas at a defined pressure. An interference voltage which has a rise time of 1 kV/μs and reaches a peak of 10 kV can be limited to approx. 600 ... 700 V. The gas filled space changes from high ohm to low ohm. This process depends on the surge of the overvoltage and on the rated DC trigger voltage.

The rated DC trigger voltage is printed on the side of the gas charge eliminator. Once the gas is ignited, a typical arcing voltage of 10 to 30 V is produced across the component. Ionisation of the gas causes the overvoltage protection terminal to become low resistive, allowing a high follow current to flow. Suitable measures must be taken to limit the follow current (e.g. fuses).

Suppressor diodes

Suppressor diodes work on a similar principle to conventional zener diodes. If the indicated breakdown voltage is exceeded, the diode conducts. Compared to zener diodes, suppressor diodes have a higher current carrying ability and faster response times in the ps-range.

DK 4 U gas charge eliminator 5 kA, 90 V

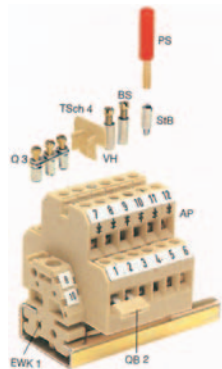


Rated data DK 4 U

Type		Rated DC trigger voltage		Impulse sparkover voltage at 1 kV/μs	Max. rated voltage		Capacity	Order no.	
		V	Tolerance %	V	U _{eff} V	U- V		TS 32	TS 35
10 kA (8/20 μs)	Preferred types 24 V	90 -	±25	< 600	35	50	≈2	9400200000	9400300000
	Preferred types 48 V	150 -	±15	< 600	60	90	≈2	on request	on request
		230 -	±20	< 600	95	135	≈2	9400200000	9400200000
20 kA (8/20 μs)									
	Preferred types 24 V	90 -	±25	< 600	35	50	≈2	9400400000	9400500000
		150 -	±15	< 600	60	90	≈2	9400410000	9400510000
	Preferred types 48 V	230 -	±15	< 650	95	135	≈2	9400420000	on request
	Preferred types 115 V	470 -	±15	<1000	200	280	≈2	9400440000	9400540000
	Preferred types 230 V	600 -	±15	<1000	255	360	≈2	9400450000	9400550000
DK 4 U with suppressor diode									
		20 -	±10	< 60	-	28	≈3000	8016950000	8016960000
		48 ac	±10	< 146	53	74	≈1400	8016970000	8016980000
		115 ac	±10	< 300	135	178	≈700	8016990000	8017000000
WDK 2.5 V with suppressor diode									
		230 ac	±10	< 700	320	240	≈400	8017010000	8017020000
WDK 2.5 V with suppressor diode									
		24 ac	±10	< 60	33 V	28 V	≈3000		8132760000

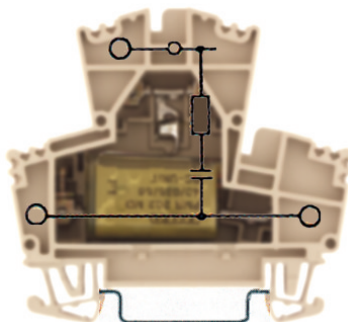
Overvoltage protection for measurement and control engineering

With electronic components (other versions on request)



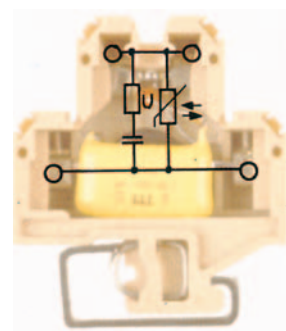
DK 4 RC

Arc suppression circuit for contactors and solenoids (AC),
suppressor module for optocoupler inputs



DK 4 RC-VRS

Arc suppression circuit for contactors and solenoids (AV)



Dimension data DK4 / WDK 2.5

Terminal width (+ fitting tolerance 0.2)

Stripping length

18 mm

9 mm

18 mm

9 mm

Connection data

Screw connection, flexible DK 4

Screw connection, flexible WDK 2.5

Conductor cross-section DK 4

Conductor cross-section WDK 2.5

0.5...4 mm²

–

AWG 22...12

–

0.5...4 mm²

–

AWG 22...12

–

Rated data to VDE

Voltage

250 V~/300 V–

Diode current

–

Diode reverse voltage

–

Current of through busbar

10 A

24 V~

–

–

–

10 A

10 A

Approvals

Operating temperature range

Diode

Resistance

220 Ω

Capacitor

0.22 µF

Varistor (max. operating voltage)

–

Gas charge eliminator (rated DC sparkover voltage)

–

Max. leakage current (standard wage 8/20 µs)

–

47 Ω

47 Ω

0.22 µF

0.22 µF

S 14

S 14

50 V

250 V

–

–

Order data

Type

Order no. for TS 32

Type

Order no. for TS 35

Type

Order no. for TS 35

DK 4 RC

0692160000

DK 4 RC/35

0053160000

WDK 2.5 RC

8065910000

DK 4 RC-VRS

9401860000

DK 4 RC-VRS/35

9402260000

DK 4 RC-VRS

9401960000

DK 4 RC-VRS/35

9402360000

Accessories

Mounting rail (2 m long)

End bracket (thickness in mm)

End plate (thickness in mm)

Small partition

Socket for test plug

Test plug (pole diameter)

Cross connector (pre-assembled)

3-pole

4-pole

10-pole

Cover plate

Fixing screws (plastic)

Cross connection bridge

2-pole

3-pole

4-pole

75 pole

Insulation profile

Type

TS 32

TS 35

EWK 1 (8.5)

EW 35 (8.5)

AP PA (1.5)

TSch 4

StB 8.5

PS (ø 2.3)

order no.

0122800000

0383400000

0206160000

0383560000

0359260000

0363360000

0215700000

0180400000

Qty

–

–

50

50

20

100

50

20

Q 4

Q 10

0336600000

0368600000

50

20

BSK M 2.5 x 18

QB 2¹⁾

QB 3¹⁾

QB 4¹⁾

QB 75 blank

IP

StB 8.5

0303300000

0482700000

0482800000

0482900000

0526400000

0526700000

0215700000

100

100

50

50

10

–

50

¹⁾ when using QB conductor connection max. 2.5 mm²

Type

TS 32

TS 35

EWK 1 (8.5)

EW 35 (8.5)

AP PA (1.5)

TSch 4

StB 8.5

PS (ø 2.3)

Order no.

0122800000

0383400000

0206160000

0383560000

0359260000

0363360000

0215700000

0180400000

Qty

–

–

50

50

20

100

50

20

Q 4

Q 10

0336600000

0368600000

50

20

BSK M 2.5 x 18

QB 2¹⁾

QB 3¹⁾

QB 4¹⁾

QB 75 blank

IP

0303300000

0482700000

0482800000

0482900000

0526400000

0526700000

100

100

50

50

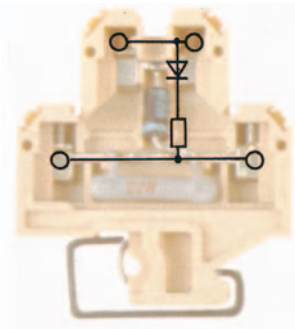
10

–

Overvoltage protection for measurement and control engineering

DK 4 RD

Arc suppression circuit for contactors and solenoids (DC)



12 mm

9 mm

0.5...4 mm²

AWG 22...12

3 A

1300 V

10 A

BY 255

22 Ohm (4 W)

DK 4 RD

0150260000

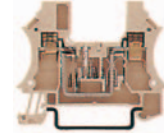
DK 4 RD/35

0059160000

Type	Order no.	Qty
TS 32	0122800000	-
TS 35	0383400000	-
EWK 1 (8.5)	0206160000	50
EW 35 (8.5)	0383560000	50
AP PA (1.5)	0359260000	20
TSch 4	0363360000	100
StB 8.5	0215700000	50
PS (ø 2.3)	0180400000	20
Q 3	0336500000	50
Q 4	0336600000	50
Q 10	0368600000	20
AD 4 (4 terminals)	0303400000	50
BSK M 2.5 x 18	0303300000	100
QB 2)	0482700000	100
QB 3)	0482800000	50
QB 4)	0482900000	50
QB 75 blank	0526400000	10
IP	0526700000	-

for retrofitting electrical components

WPO 4



Dimensions	
Width/length/height (mm)	with TS 32 -
Width/length/height (mm)	with TS 35x7,5 6/60/47
Stripping length/clamping screw	9 mm/M 3
Rated data	
Rated voltage/current/cross-section	250 V/32 A/4 mm ²
Rated impulse voltage VDE 0110/1.89/Pollution severity	4 kV/3

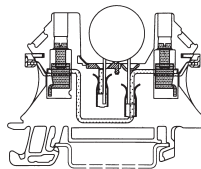
Further technical data	
Tightening torque range	Nm 0.5...1.0
Torque setting with DMS2 electric screwdriver	2
Clampable conductors	
"e" solid HO7V-U	mm ² 0.5...4
"m" stranded HO7V-R	mm ² 1.5...4
"f" flexible HO7V-K	mm ² 0.5...4
"f" flexible HO7V-K and AEH DIN 46228/1	mm ² 0.5...4
"f" flexible HO7V-K and AEH with plastic collar	mm ² 0.5...4
Plug gauge acc. to 947-1	size A 3
Continuous output current of terminal for conductor size	32 A/4 mm ²

Core diameter of electrical components	mm	0,8...1,0 mm	
UL/CSA rated data			
Voltage/current/conductor size	UL		
	CSA		
Order data			
Type		Order no.	Qty
Wemid		1036000000	50

Intermediate frame		Type	Order no.	Qty
thickness 1.5 mm		ZR	1071100000	20

Busbar		SSch 7.3x1.2	1071200000	1m
--------	--	--------------	------------	----

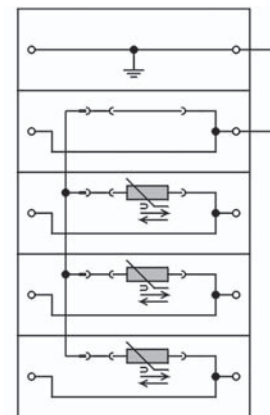
Varistors		S14k30	4127830000
for 24 V		S14k275	4011070000
Gas charge eliminators		90 V 20 kA	4233030000
for 90 V		600 V 20 kA	4140810000
for 600 V			



Weidmüller varistor terminals allow for electronic components to be retrofitted, e.g. varistors, diodes, gas charge eliminators, etc. These "electronic terminals" no longer have to be designed prior to installation and subsequently delivered with soldered components which can no longer be distinguished.

The great advantages of this new design include:

- Cost savings
- Components can be changed quickly on site
- Service limited to visual inspection
- Clarity
- Components are easy to distinguish
- Flexibility
- Components can be modified immediately to changed conditions.

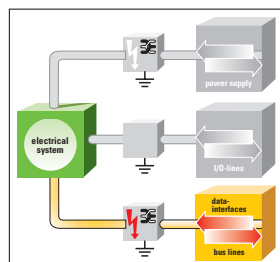


Overvoltages in a three-phase supply discharged to earth via WPE with the aid of varistors and a gas discharge tube.

Marking tabs		Printing
consecutive horizontal	FW 6	046866....
consecutive vertical	FS 6	047356....

Overvoltage protection for data interface

Principles of data transmission



Data transmission refers to the sending of characters, numbers, statuses, measurements etc. between various remote units. Remote units include controllers, computers, measurement transducers, actuators etc. One unit transmits while the other receives. This is the simplest form of data transmission.

However, it is frequently necessary for one unit to receive something and then send an “answer” back to the other unit. To do this, we need two data lines that run back-to-back, or we combine the data lines by providing a transceiver at each end of the data line.

Structure and properties of networks

There are various options for networking data terminal equipment. We distinguish between star type, ring, point-to-point and bus networks.

Star-type networks

The main unit is located in the centre. The individual data lines then radiate out from this centre to the individual terminal units. In other words, in star-type networks all data terminals are connected to the central terminal via their own cable.

Ring networks

The computers or data terminals are all connected to each other like a chain by means of a coaxial cable, for example. In this case the data are passed on from one data terminal to the next. The entire ring is therefore always under load. Advantage of the ring network: it can cover a larger area than a star-type network, because the transmission distance between 2 adjacent terminals is defined as the transmission path.

Point-to-point networks

These are basically networks between two data terminals that are connected directly with each other, e.g. an RS 232 or RS 422 link.

Bus systems

These are networks based on the parallel connection of modules. All components operate on one and the same line. Therefore only two/four cores are required for the data bus. If bus cabling includes branches, then we call this a tree structure. Every bus system includes a bus controller that issues transmission permission to the individual terminals.

Transmission media

Data lines are necessary to transmit data:

Two/three core systems

Two-core systems are used for data transmission requiring relatively low transmission rates. For example, an ISDN system acting as an exchange line in a building only needs two cores. Other types of bus system also only use two or three cores.

Four core systems

This is the current standard for the majority of corporate data networks. Two cores are used for transmitting data and two for receiving. The cables are well shielded and can transmit data with frequencies of up to 500 MHz over distances of up to 100 m.

Coaxial cable

The technique of sending data via coaxial cables is relatively old and rarely used, given the slow speed and lack of flexibility of the networks. Transmission rates of 12 Mbit/s today are no longer adequate. Over longer distances, fibre-optic cables are replacing coaxial cables; these can transmit several hundred Mbit/s.



Serial interface

A serial interface operates with 8 data bits (1 byte). A start bit (low bit) is always sent before the output of a byte, and one or two stop bits (high bit) are added to the end of the byte. This encryption is important for the data receiver as it can then detect where each data byte begins and ends. Serial interfaces frequently operate with +5V (logic 1) and 0V (logic 0). Advantage: less cabling (only 3 cores). Disadvantage: slow data transmission.

RS232

Serial interface for point-to-point connections of up to 20 kbit/s.
Voltage signals to earth:
logic 1 (mark) $-15V$ to $-3V$
logic 0 (space) $+3V$ to $+15V$
max. signal level $\pm 15V$
Lines up to 20 m long depending on transmission rate

RS422

Serial unidirectional high-speed interface for up to 10 parallel receivers.
Differential voltage signal:
logic 1 (mark) $A-B < -0.3V$
logic 0 (space) $A-B > +0.3V$
max. signal level $\pm 12V$
Lines up to 1200 m long
max. data rate 10 Mbit/s

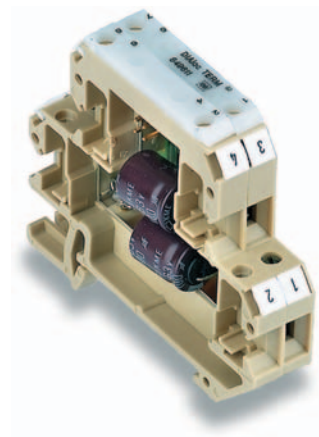
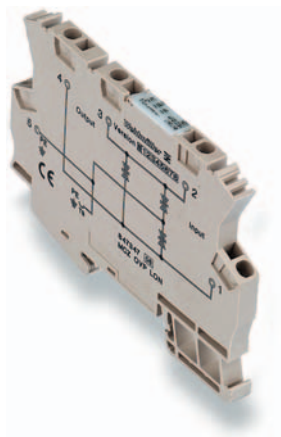
RS485

Serial bidirectional high-speed interface for up to 32 subscribers
2 or 4 core system
Differential voltage signal:
logic 1 (mark) $A-B -0.3V$
logic 0 (space) $A-B +0.3V$
max. signal level $-7V$ to $+12V$
Lines up to 1200 m long
max. data rate 10 Mbit/s

LON™ (twisted pair)
Series bus with TP/XF –78 (old)
Series bus with TP7XF-1250
Series bus or free topology with TP/FT 10
Series bus or free topology with LPT-10

EIB (European Installation Bus)
Twisted pair or power line
Series, star-type or tree bus (also combinations thereof) 9600 Bit/s
Building services automation

Overvoltage protection for data interface



Protective module in
adapter plug housing
RS232-8 B/S25 **8570500000**
RS232-8 S/B25 **8570510000**

Protective module in
housing for fitting on mounting rail
EGU4 EG3 RS232 **1170460000**

Protective module in
housing for fitting on mounting rail
LPU RS422 / RS485 **9454930000**

Protective module in
aluminium housing
RS 485 K21 **8008501001**

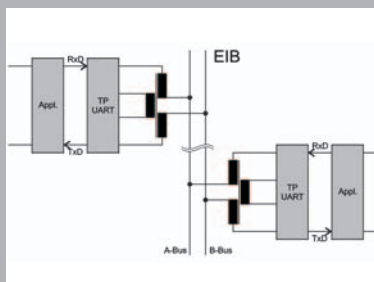
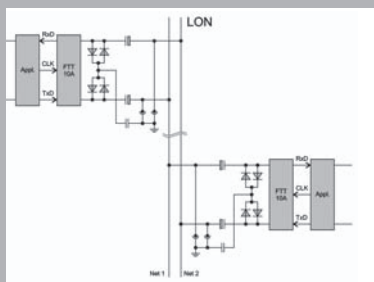
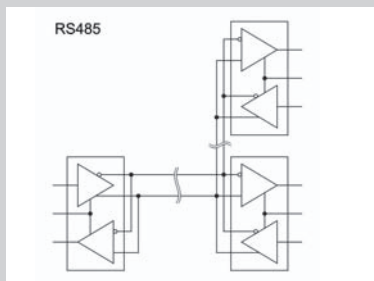
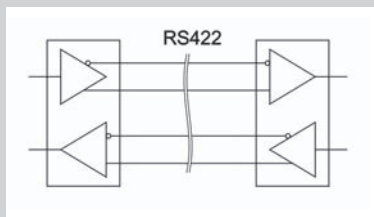
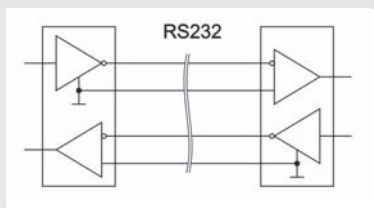
Protective module in
housing for fitting on mounting rail
LPU RS422 / RS485 **9454930000**

Protective module in
aluminium housing
RS 485 K21 **8008501001**

Protective module in
housing for fitting on mounting rail
MCZ ovp LON-Bus **8473470000**
DIALOG EG8 OVP **8283060000**

LON™ termination
DIALOG BUS TERMINATION **8496110000**

Protective module in
housing for fitting on mounting rail
MCZ ovp Gasabl. 90 V **8449130000**



Overvoltage protection for data interface

For telecommunication interface

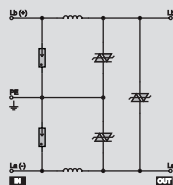
Overvoltage protection for telecommunication interfaces

TAE ovp analog

TAE ovp analog



n

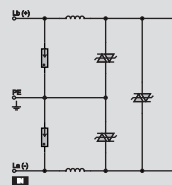


TAE ovp analog LED

TAE ovp analog LED



n

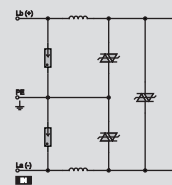


TAE ovp analog FM

TAE ovp analog FM



n



Technical data

Technical specification

Rated voltage U_n (AC)
Operating voltage U_c (ac), max.
Operating current, I_{max}
Leakage current, max. (8/20 μ s)
Response time
On output side sym., at Input 8/20 μ s, typical
On output side usym., Input 8/20 μ s, typical
Optical function indicator
Pollution severity
Overvoltage category
Oper. temp. min./Oper. temp. max.
Stor. temp. min./Storage temp., max.

General data

Input voltage max.
Norm Signal
Rated leakage current (8/20 μ s)
Total current
Response time, type
Resistance per path
Cut-off frequency fg, 600 M-System
Transistor output, positive-switching
Residual voltage at output at input pulse of 1 kV/ μ s
Residual voltage at output at 8/20 μ s and input pulse of 5kA

190V
190V
0.45A
10kA
<= 5 ns
100V @5kA
100V @5kA
2
III
0°C/60°C
-25°C/85°C

190V
analog telephone signal Uko
4 kA
10kA 8/20 μ s
< 5ns
1.1 Ω
2.0Mhz

a/b < 270V
a-b/PE < 270V
a-b/PE < 100V
a-b/PE < 100V

190V
190V
0.45A
10kA
<= 5 ns
100V @5kA
100V @5kA
LED
2
III
0°C/60°C
-25°C/85°C

190V
analog telephone signal Uko
4 kA
10kA 8/20 μ s
< 5ns
1.1 Ω
2.0Mhz

a/b < 270V
a-b/PE < 270V
a-b/PE < 100V
a-b/PE < 100V

190V
190V
0.45A
10kA
<= 5 ns
100V @5kA
100V @5kA
2
III
0°C/60°C
-25°C/85°C

190V
analog telephone signal Uko
4 kA
10kA 8/20 μ s
< 5ns
1.1 Ω
2.0Mhz

5...48V/0.1A
a/b < 270V
a-b/PE < 270V
a-b/PE < 100V
a-b/PE < 100V

Dimensions

Clamping range (rating- / min. / max.) mm²
Length x width x height mm

Information

Clamp. yoke connection

0.80 / 0.50 / 1.50
30 x 65.0 x 80

AP Housing NFN

Clamp. yoke connection

0.80 / 0.50 / 1.50
30 x 65.0 x 80

AP Housing NFN

Clamp. yoke connection

0.80 / 0.50 / 1.50
30 x 65.0 x 80

AP Housing NFN

Ordering data

Version

Type	(Qty.=1)	Order No.
TAE OVP analog		8673980000

Type	(Qty.=1)	Order No.
TAE OVP analog LED		8674020000

Type	(Qty.=1)	Order No.
TAE OVP analog FM		8649910000

Information

Accessories

Information

Overvoltage protection for data interface

For telecommunication interface

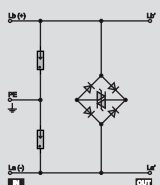
Overvoltage protection for telecommunication interfaces

TAE ovp ISDN

TAE ovp ISDN



n

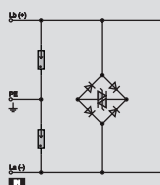


TAE ovp ISDN LED

TAE ovp ISDN LED



n

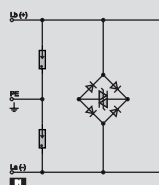


TAE ovp ISDN FM

TAE ovp ISDN FM



n



Technical data

Technical specification

Rated voltage U_n (AC)
Operating voltage U_c (ac), max.
Operating current, I_{max}
Leakage current, max. (8/20 μ s)
Response time
On output side sym., at Input 8/20 μ s, typical
On output side usym., Input 8/20 μ s, typical
Optical function indicator
Pollution severity
Overvoltage category
Oper. temp. min./Oper. temp. max.
Stor. temp. min./Storage temp., max.

General data

Input voltage max.
Norm Signal
Rated leakage current (8/20 μ s)
Total current
Response time, type
Resistance per path
Cut-off frequency f_g , 600 M-System
Transistor output, positive-switching
Residual voltage at output at input pulse of 1 kV/ μ s
Residual voltage at output at 8/20 μ s and input pulse of 5kA

190V
190V
0.45A
10kA
<= 5 ns
100V @5kA
100V @5kA
2
III
0°C/60°C
-25°C/85°C

190V
ISDN telephone signal Uko interface
4 kA
10kA 8/20 μ s
< 5ns
1.1 Ω
80.0Mhz
a/b < 270V
a-b/PE < 270V
a-b/PE < 100V
a-b/PE < 100V

0.45A
10kA
<= 5 ns
100V @5kA
100V @5kA
LED green
2
III
0°C/60°C
-25°C/85°C

190V
ISDN telephone signals Uko interface
4 kA
10kA 8/20 μ s
< 5ns
1.1 Ω
2.0Mhz
a/b < 270V
a-b/PE < 270V
a-b/PE < 100V
a-b/PE < 100V

0.45A
10kA
<= 5 ns
100V @5kA
100V @5kA
2
III
0°C/60°C
-25°C/85°C

190V
ISDN telephone signals Uko interface
4 kA
10kA 8/20 μ s
< 5ns
1.1 Ω
2.0Mhz
5...48Vdc/ 0.1A
a/b < 270V
a-b/PE < 270V
a-b/PE < 100V
a-b/PE < 100V

Dimensions

Clamping range (rating- / min. / max.) mm²
Length x width x height mm

Information

Clamp. yoke connection

0.80 / 0.50 / 1.50
30 x 65.0 x 80
AP Housing NFN

Clamp. yoke connection

0.80 / 0.50 / 1.50
30 x 65.0 x 80
AP Housing NFN

Clamp. yoke connection

0.80 / 0.50 / 1.50
30 x 65.0 x 80
AP Housing NFN

Ordering data

Version

Type	(Qty.=1)	Order No.
TAE OVP ISDN		8674000000

Type	(Qty.=1)	Order No.
TAE OVP ISDN LED		8674010000

Type	(Qty.=1)	Order No.
TAE OVP ISDN FM		8673970000

Information

Accessories

Information

Articles with coloured order number are kept permanently in stock at the central warehouse in Germany.
Delivery times see page X.2

Overvoltage protection for data interface

RS232

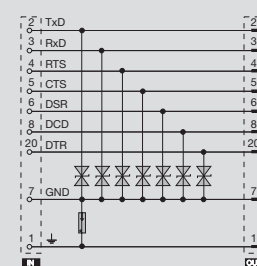
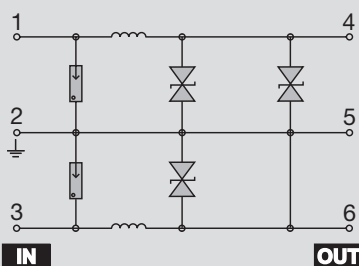
RS232

EGU 4 RS232



RS232

RS232 adapter plug



Technical data

Technical specification

Rated voltage U_n (AC)	12V
Operating voltage U_c (ac), max.	15V
Operating current, I_{max}	0.05A
Volume resistance	1.30 Ω
Baud rate	≤ 9600 Bd
Response time	≤ 5 ns
Gas discharger	Yes
Varistor	No
Suppressor diodes	Yes
Cut-off freq. (-3dB) at load impedance	30.0kHz 600 Ω
Leakage current, max. (8/20 μ s)	5kA
On output side, sym. 1kV/ μ s input, typical	20V
On output side sym., at Input 8/20 μ s, typical	32V
On the output side, unsymmetrical, Input 1kV/ μ s, typ.	20V
On output side usym., Input 8/20 μ s, typical	32V
Design	integral housing
Type of connection	screw connection
Stor. temp. min./Storage temp., max.	-25°C/85°C
Oper. temp. min./Oper. temp. max.	-25°C/60°C

12V
15V
0.05A
1.30 Ω
≤ 9600 Bd
≤ 5 ns
Yes
No
Yes
30.0kHz 600 Ω
5kA
20V
32V
20V
32V
integral housing
screw connection
-25°C/85°C
-25°C/60°C

12V
15V
0.10A
1 Ω
≤ 19200 Bd
≤ 5 ns
Yes
No
Yes
30.0kHz 1200 Ω
0.50kA
20V
28V
20V
28V
adapter plug
-40°C/60°C
-20°C/55°C

Dimensions

Clamping range (rating- / min. / max.)	mm ²
Length x width x height	mm

screw connection

2.50 / 0.50 / 4
58 x 22.5 x 95

64 x 56.0 x 16.50

Information

Protection for data lines Rx/D Tx/D and Gnd

Ordering data

Version

Type	Qty.	Order No.
EGU4 EGU3 RS232 DATENLTG	1	1170460000

Type	Qty.	Order No.
RS232-8 B/S25	1	8570500000
RS232-8 S/B25	1	8570510000

Information

ZS-RS 232/B-S cable-sided 25pol SUB D socket unprotected
ZS-RS 232/S-B cable-sided 25pol SUB D plug unprotected

Accessories

Information

Overvoltage protection for data interface

RS485/422

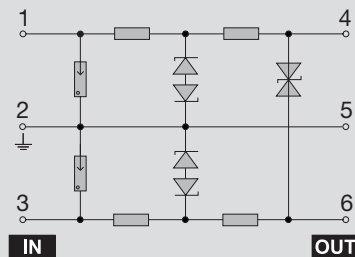
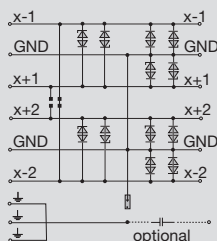
RS485

RS485/RS422 Overvoltage protection



RS485

RS485/RS422 plug. Overvoltage Protection



Technical data

Technical specification

Rated voltage U_n (AC)
Operating voltage U_c (ac), max.
Operating current, I_{max}
Volume resistance
Baud rate
Response time
Gas discharger
Varistor
Suppressor diodes
Cut-off freq. (-3dB) at load impedance
Leakage current, max. (8/20 μ s)
On output side, sym. 1kV/ μ s input, typical
On output side sym., at Input 8/20 μ s, typical
On the output side, unsymmetrical, Input 1kV/ μ s, typ.
On output side usym., Input 8/20 μ s, typical
Design
Type of connection
Stor. temp. min./Storage temp., max.
Oper. temp. min./Oper. temp. max.

12V
12V
1.50A
0.50 Ω
 ≤ 6 MB
 ≤ 5 ns
Yes
No
Yes
0.50kA
18V
28V
18V
28V
miscellaneous
screw connection
-25°C/85°C
-25°C/60°C

6V
12V
1.50A
0.10 Ω
 ≤ 9600 Bd
 ≤ 5 ns
Yes
No
Yes
0.50kA
18V
36V
18V
36V
plug card
push-on connection
-25°C/85°C
-25°C/60°C

Dimensions

Clamping range (rating- / min. / max.) mm²
Length x width x height mm

Information

screw connection

12 / 0.50 / 4
125 x 80.0 x 57

push-on connection

96.60 x 20.0 x 117

Ordering data

Version

Type	Qty.	Order No.
RS 485 K21 UE-SCHUTZ SE	1	8008501001

Type	Qty.	Order No.
LPU RS 485	1	9454930000

Information

Accessories

Information

Housing SEG-U 8007871001

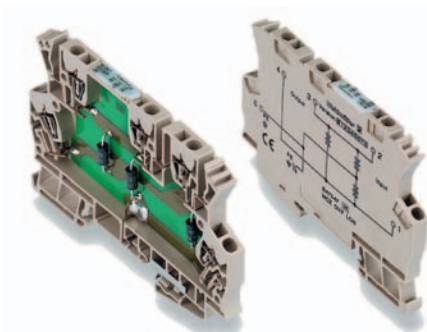
Articles with coloured order number are kept permanently in stock at the central warehouse in Germany.
Delivery times see page X.2

Overvoltage protection for data interface

LON™

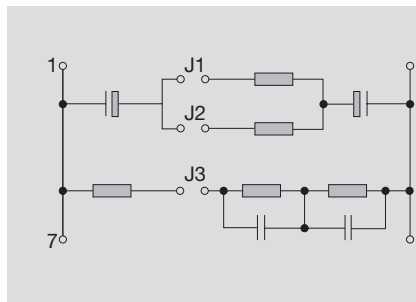
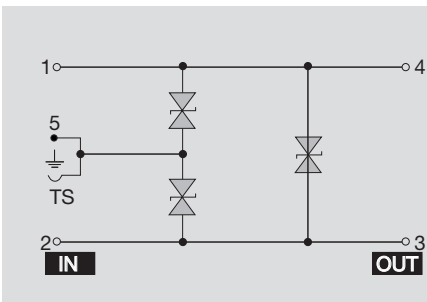
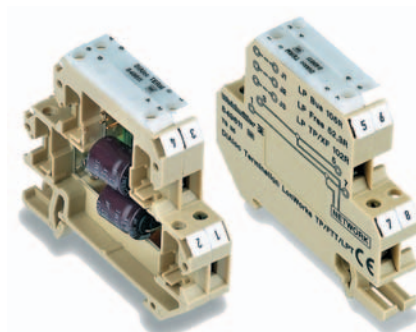
LON FTT / TP78

Overvoltage protection - LonWorks



Dialoc Termination

Overvoltage protection - LonWorks



Technical data

Technical specification

Rated voltage U_n (AC)
 Operating voltage U_c (ac), max.
 Operating current, I_{max}
 Volume resistance
 Baud rate
 Response time
 Gas discharger
 Varistor
 Suppressor diodes
 Cut-off freq. (-3dB) at load impedance
 Leakage current, max. (8/20 μ s)
 On output side, sym. 1kV/ μ s input, typical
 On output side sym., at Input 8/20 μ s, typical
 On the output side, unsymmetrical, Input 1kV/ μ s, typ.
 On output side usym., Input 8/20 μ s, typical
 Design
 Type of connection
 Stor. temp. min./Storage temp., max.
 Oper. temp. min./Oper. temp. max.

12V
 14V
 16A
 0.50 Ω

 < 100 ps
 No
 No
 Yes

 100A
 20V
 32V
 20V
 32V
 terminal
 tension clamp connection
 -25°C/60°C
 -25°C/55°C

48V
 60V
 16A
 0.50 Ω

 No
 No
 No

 terminal
 screw connection
 -25°C/60°C
 -25°C/55°C

Dimensions

Clamping range (rating- / min. / max.) mm²
 Length x width x height mm

Information

tension clamp connection

1.50 / 0.50 / 1.50
 91 x 6.0 x 63.20

screw connection

2.50 / 0.50 / 4
 65 x 12.0 x 57

Ordering data

Version

Type	Qty.	Order No.
MCZ OVP LON-Bus	10	8473470000

Type	Qty.	Order No.
DIALOC BUS TERMINATION Abschluss	5	8496110000

Information

LON is a TM of Echolon

Select LPT/FTT/TP78 via jumper

Accessories

Information

Line Filter

Overvoltage protection WAVEFILTER

WAVEFILTERS for simple radio interference suppression in the switch cabinet

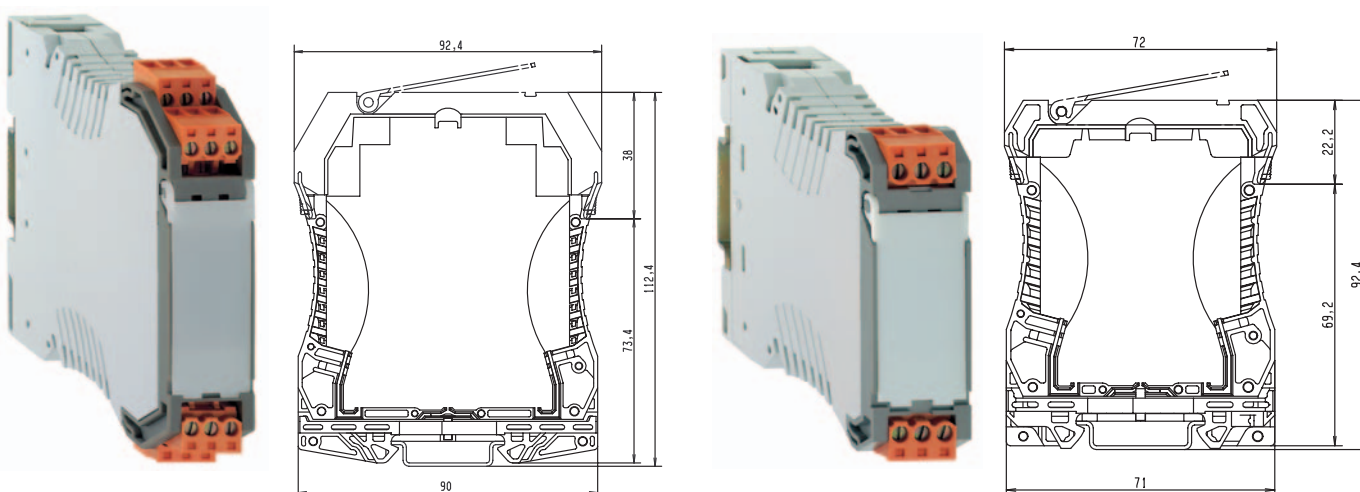
The WAVEFILTER series eliminates the time-consuming need to screw in a rectifier. The filters are simply clipped on to TS35 and connected to the device needing suppression. The two-stage WAVEFILTER with an overall width of 22.5 mm rated for 1 A, 3 A, 6 A and 10 A offers high attenuation.

WAVEFILTER with current compensating choke is ideal for applications in controller and automation technology, e.g. for suppressing continuous interference types such as "noise" or "ripple" from interfering radiation from other systems, or interference from frequency converters and switchmode power supplies. A short low resistive mass connection is required for the WAVEFILTER to function properly. It is advisable for all devices to be earthed directly with the largest possible cross-section to a central earthing point in the switch cabinet.

Interference signals

We differentiate between two types of induced transient and continuous interference signals: symmetrical (differential mode) and asymmetrical (common mode). The symmetrical interference signals generate voltage between the signal lines of the system. Asymmetrical interference voltages occur between the signal lines and earth.

WAVEFILTER is ideal for attenuating both kinds of interference signal. In addition, WAVEFILTER 10A also has an earthing conductor choke. This earthing conductor choke supports both attenuation on the earthing conductor for the filter and additional attenuation of asymmetrical interference voltages.

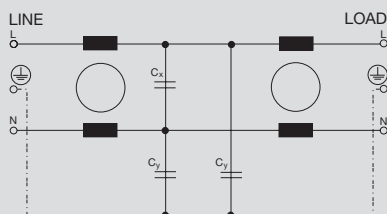


Line Filter

Line filter with screw clamp connectors

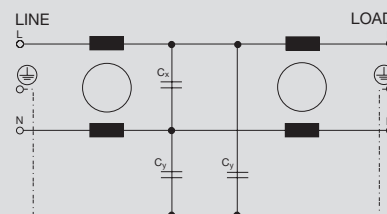
WAVEFILTER 1A

Wavefilter 1 A 250V



WAVEFILTER 6A

Wavefilter 6A 250V



Technical data

Technical specification

Rated voltage (AC/DC)
Rated current
Capacity
Inductance L and L1
Leakage current at Un
Test voltage P/N-PE
Test voltage P-N
Oper. temp. min./Oper. temp. max.

250V
1A
33nF
10mH
190μA
2000Vac
1700Vdc
-20°C/40°C

250V
6A
33nF Cx 22nF Cy
0.80mH
190μA
2000Vac
1700Vdc
-20°C/40°C

Dimensions

Clamping range (rating- / min. / max.) mm²
Length x width x height mm

2.50 / 0.50 / 2.50
90 x 22.5 x 73.40

2.50 / 0.50 / 2.50
90 x 22.5 x 73.40

Information

See damping-chart

See damping-chart

Ordering data

Version

Type	Qty.	Order No.
WAVEFILTER 1A	1	8614790000

Type	Qty.	Order No.
WAVEFILTER 6A	1	8614800000

Information

Accessories

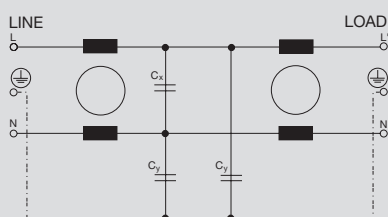
Information

Articles with coloured order number are kept permanently in stock at the central warehouse in Germany.
Delivery times see page X.2

Line filter with screw clamp connection

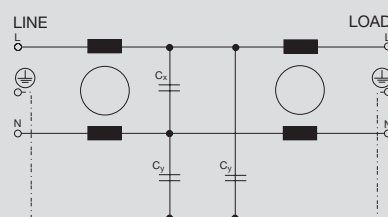
WAVEFILTER 3A

Wavefilter 3A 250V



WAVEFILTER 10A

Wavefilter 10A 250V



Technical data

Technical specification

Rated voltage (AC/DC)
Rated current
Capacity
Inductance L and L1
Leakage current at Un
Test voltage P/N-PE
Test voltage P-N
Oper. temp. min./Oper. temp. max.

[illegible][illegible]

Dimensions

Clamping range (rating- / min. / max.)	mm ²
Length x width x height	mm

$$\frac{2.50 / 0.50 / 2.50}{90 \times 22.5 \times 73.40}$$
$$\frac{2.50 / 0.50 / 2.50}{90 \times 22.5 \times 73.40}$$

Information

See damping-chart

See damping-chart

Ordering data

Version

Type	Qty.	Order No.
WAVEFILTER 3A	1	8614780000

Type	Qty.	Order No.
WAVEFILTER 10A	1	8614770000

Information

Accessories

Information