

# Slim Surge protection terminals for instrumentation and control engineering

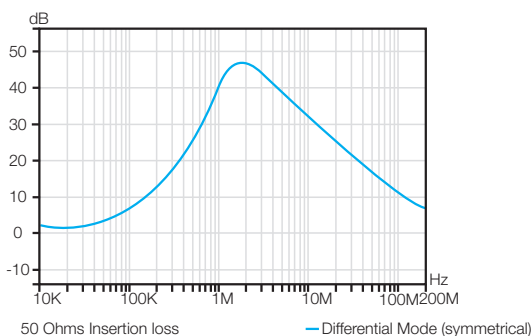
Weidmüller MCZ surge protection terminals are characterized by their maximum protective function concentrated in a compact design of 6 mm. The tension spring connection and direct earthing via the terminal rail contact results in time-savings during installation. The MCZ OVP terminals are suitable for installing in the narrowest of places in automated process, industrial and building services systems.



The three-stage surge protection terminals are fitted with gas discharge tubes, varistors, suppression diodes (TAZ) and decoupling inductors. Individual protective components such as varistors and suppression diodes complement the range. The MCZ OVP surge protection terminals are available with rated voltages of 24, 48, 115 and 230 V. The response time for the 3-stage MCZ OVP is typically 100 ps. The earth contact is produced by clipping the terminal to an earthed terminal rail. To guarantee a safe energy discharge of up to 10 kA (8/20 μs) via these terminals, the TS 35 rail must therefore be earthed.

EMC regulations require the terminal rail to be securely screwed to an earthed mounting plate. Optimum protection is achieved when the PE contact is made via a tension spring terminal every 600 mm.

Attenuation chart MCZ OVP Filter



## The different models

**MCZ OVP HF** is a two-stage protective combination with a bridge circuit consisting of suppressor diodes. With this circuitry, high transmission rates of up to 100 Mhz can be reached in 100-Ohm systems.

The protective circuitry is particularly suitable for protecting high-speed data transmission system and high-speed analogue systems.

**MCZ OVP CL** is a three-stage protective combination with a suppression diode between the current paths. It limits the surge in analogue signal circuits, e.g. current loops.

**MCZ OVP SL** is a three-stage protective combination with two suppression diodes, each from the signal line to earth. It limits the surge in binary circuits, e.g. for actuators.

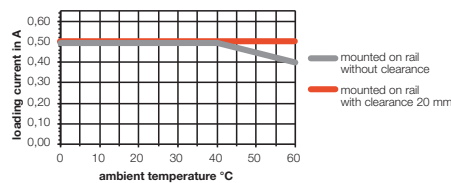
**MCZ OVP CL FG** is a three-stage protective combination with a suppression diode between the current paths. It limits the surge in analogue signal circuits. A high-resistance earth connection is achieved with a gas discharge tube.

**MCZ OVP SL FG** is a three-stage protective combination with two suppression diodes, each from the signal line to earth. It limits the surge in binary circuits, e.g. for actuators.

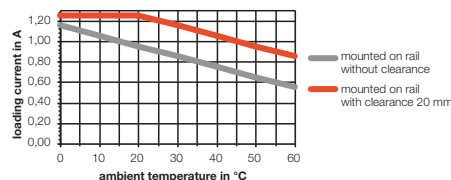
A high-resistance earth connection is achieved with three gas discharge tubes.

**MCZ OVP filter terminals** contain selected varistors, capacitors and series inductances. 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 against interference voltages and RF interference.

Derating curve MCZ OVP



Derating curve MCZ OVP





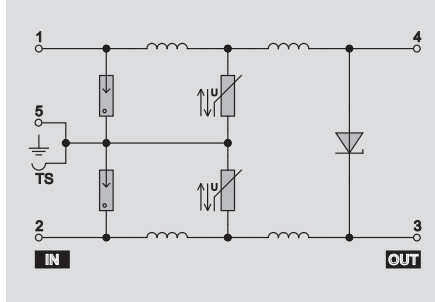


### 3- or 1-stage protection with tension clamp connection

- Slimline surge protection terminal with tension clamp connection
- 6 mm slimline fine surge protection
- fast wiring thanks to TS contact and tension clamp connections
- can be cross-connected using ZQV

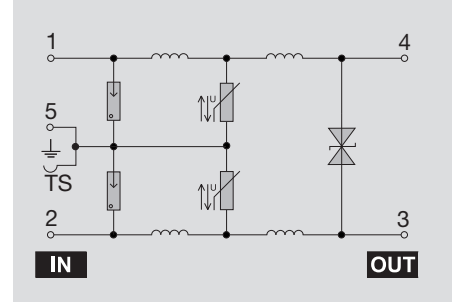
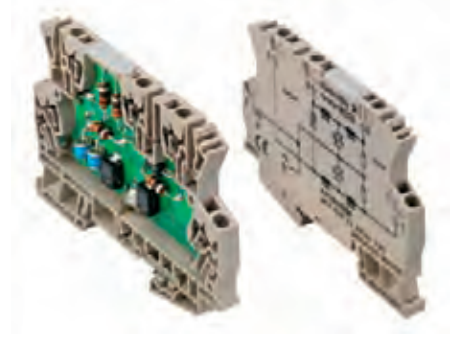
### MCZ OVP CL 24 V DC 0.5 A

Protection for current loops



### MCZ OVP CL 24 V AC 0.5 A

Protection for current loops



#### Technical data

Technical data	
Rated voltage (AC)	
Rated voltage (DC)	
max. continuous voltage, U <sub>c</sub> (AC)	
Operating current, I <sub>max</sub>	
Volume resistivity	
Gas discharge tube	
Varistor	
Suppression diodes	
Cut-off frequency (-3 dB) at load impedance	
Discharge current, max. (8/20 μs)	
Protection level on output side sym., input 1 kV/μs, typ.	
Protection level on output side sym., input 8/20 μs, typ.	
Protection level on output side unsym., input 1kV/μs, typ.	
Protection level on output side unsym., input 8/20 μs, typ.	
Protection level on output side sym., input 10/350 μs, typ.	
Protection level on output side unsym., input 10/350 μs, typ.	
Lightning test voltage I <sub>imp</sub> (10/350 μs)	
Specification class to IEC 61643-21	
Design	
Ambient temperature (operational)	
Storage temperature	
Approvals	

24 V
28 V
0.5 A
2.50 Ω
yes
yes
yes
500.0 kHz 240 Ω
5 kA
40 V
65 V
40 V
65 V
1 kA
D1
terminal
-40 ... 60°C
-40 ... 85°C
CE;UL listed

24 V
28 V
38 V
0.5 A
1.00 Ω
yes
yes
yes
500.0 kHz 240 Ω
5 kA
45 V
70 V
45 V
70 V
48 V
88 V
1 kA
D1
terminal
-40 ... 60°C
-40 ... 85°C
CE;UL listed

#### Dimensions

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

#### tension clamp connection

1.5 / 0.5 / 1.5
91 x 6 x 63.5

#### tension clamp connection

1.5 / 0.5 / 1.5
91 x 6 x 63.5

#### Note

Refer to derating curve

Refer to derating curve

#### Ordering data

Version

Type	Qty.	Order No.
MCZ OVP CL 24VDC 0,5A	10	8448920000

Type	Qty.	Order No.
MCZ OVP CL 24VAC 0,5A	10	8472880000

#### Note

#### Accessories

Note

End plate AP MCZ 1.5: 8389030000
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End plate AP MCZ 1.5: 8389030000
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## MC series

### 3- or 1-stage protection with tension clamp connection

- Slimline surge protection terminal with tension clamp connection
- 6 mm slimline fine surge protection
- fast wiring thanks to TS contact and tension clamp connections
- can be cross-connected using ZQV

### MCZ OVP CL 24 V UC 1.25 A

Protection for current loops

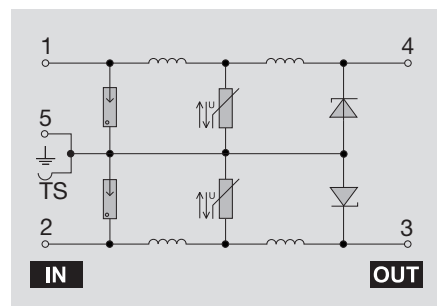
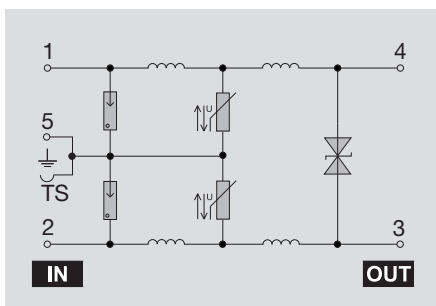
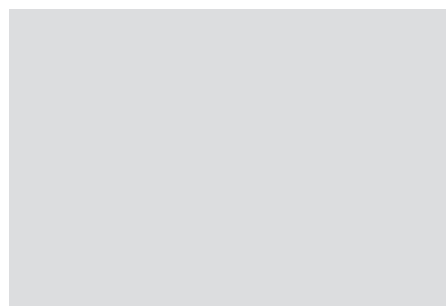


### MCZ OVP SL 24 V DC 0.5 A

Protection for binary signals



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### Technical data

Technical data	
Rated voltage (AC)	24 V
Rated voltage (DC)	24 V
max. continuous voltage, U <sub>c</sub> (AC)	27 V
Operating current, I <sub>max</sub>	1.3 A
Volume resistivity	1.00 Ω
Gas discharge tube	yes
Varistor	yes
Suppression diodes	yes
Cut-off frequency (-3 dB) at load impedance	500.0 kHz 240 Ω
Discharge current, max. (8/20 μs)	5 kA
Protection level on output side sym., input 1 kV/μs, typ.	80 V
Protection level on output side sym., input 8/20 μs, typ.	130 V
Protection level on output side unsym., input 1kV/μs, typ.	40 V
Protection level on output side unsym., input 8/20 μs, typ.	65 V
Protection level on output side sym., input 10/350 μs, typ.	58 V
Protection level on output side unsym., input 10/350 μs, typ.	76 V
Lightning test voltage I <sub>imp</sub> (10/350 μs)	1 kA
Specification class to IEC 61643-21	D1
Design	terminal
Ambient temperature (operational)	-40 ... 60°C
Storage temperature	-40 ... 85°C
Approvals	CE;UL listed

Rated voltage (AC)	24 V
Rated voltage (DC)	24 V
max. continuous voltage, U <sub>c</sub> (AC)	27 V
Operating current, I <sub>max</sub>	1.3 A
Volume resistivity	1.00 Ω
Gas discharge tube	yes
Varistor	yes
Suppression diodes	yes
Cut-off frequency (-3 dB) at load impedance	500.0 kHz 240 Ω
Discharge current, max. (8/20 μs)	5 kA
Protection level on output side sym., input 1 kV/μs, typ.	80 V
Protection level on output side sym., input 8/20 μs, typ.	130 V
Protection level on output side unsym., input 1kV/μs, typ.	40 V
Protection level on output side unsym., input 8/20 μs, typ.	65 V
Protection level on output side sym., input 10/350 μs, typ.	58 V
Protection level on output side unsym., input 10/350 μs, typ.	76 V
Lightning test voltage I <sub>imp</sub> (10/350 μs)	1 kA
Specification class to IEC 61643-21	D1
Design	terminal
Ambient temperature (operational)	-40 ... 60°C
Storage temperature	-40 ... 85°C
Approvals	CE;UL listed

Rated voltage (AC)	24 V
Rated voltage (DC)	28 V
max. continuous voltage, U <sub>c</sub> (AC)	27 V
Operating current, I <sub>max</sub>	0.5 A
Volume resistivity	2.50 Ω
Gas discharge tube	yes
Varistor	yes
Suppression diodes	yes
Cut-off frequency (-3 dB) at load impedance	500.0 kHz 240 Ω
Discharge current, max. (8/20 μs)	5 kA
Protection level on output side sym., input 1 kV/μs, typ.	80 V
Protection level on output side sym., input 8/20 μs, typ.	130 V
Protection level on output side unsym., input 1kV/μs, typ.	40 V
Protection level on output side unsym., input 8/20 μs, typ.	65 V
Protection level on output side sym., input 10/350 μs, typ.	40 V
Protection level on output side unsym., input 10/350 μs, typ.	42 V
Lightning test voltage I <sub>imp</sub> (10/350 μs)	1 kA
Specification class to IEC 61643-21	D1
Design	terminal
Ambient temperature (operational)	-40 ... 60°C
Storage temperature	-40 ... 85°C
Approvals	CE;UL listed

### Dimensions

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

### tension clamp connection

Clamping range (rating- / min. / max.)	1.5 / 0.5 / 1.5
Length x width x height	91 x 6 x 63.5

### tension clamp connection

Clamping range (rating- / min. / max.)	1.5 / 0.5 / 1.5
Length x width x height	91 x 6 x 63.5

### Note

Refer to derating curve

Refer to derating curve

### Ordering data

Version
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Type	Qty.	Order No.
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MCZ OVP CL 24VUC 1,25A	10	8448960000
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Type	Qty.	Order No.
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MCZ OVP SL 24VDC 0,5A	10	8448940000
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### Note

### Accessories

Note
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End plate AP MCZ 1.5: 8389030000
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End plate AP MCZ 1.5: 8389030000
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### 3- or 1-stage protection with tension clamp connection

- Slimline surge protection terminal with tension clamp connection
- 6 mm slimline fine surge protection
- fast wiring thanks to TS contact and tension clamp connections
- can be cross-connected using ZQV

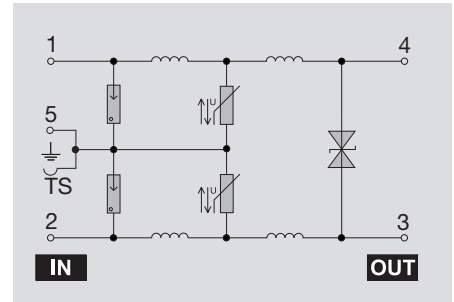
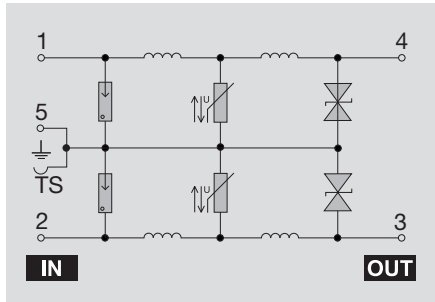
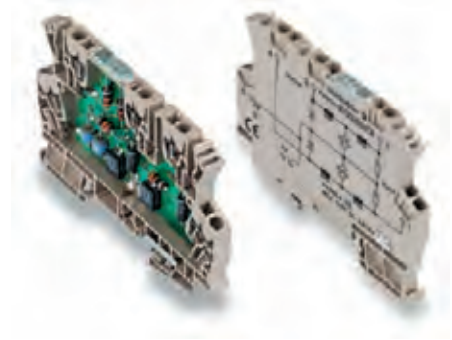
### MCZ OVP SL 24 V UC 1.25 A

Protection for binary signals



### MCZ OVP CL 48 V UC 0.5 A

Protection for current loops



### Technical data

Technical data	
Rated voltage (AC)	24 V
Rated voltage (DC)	24 V
max. continuous voltage, U <sub>c</sub> (AC)	28 V
Operating current, I <sub>max</sub>	1.3 A
Volume resistivity	1.00 Ω
Gas discharge tube	yes
Varistor	yes
Suppression diodes	yes
Cut-off frequency (-3 dB) at load impedance	500.0 kHz 240 Ω
Discharge current, max. (8/20 μs)	5 kA
Protection level on output side sym., input 1 kV/μs, typ.	80 V
Protection level on output side sym., input 8/20 μs, typ.	130 V
Protection level on output side unsym., input 1kV/μs, typ.	40 V
Protection level on output side unsym., input 8/20 μs, typ.	65 V
Protection level on output side sym., input 10/350 μs, typ.	108 V
Protection level on output side unsym., input 10/350 μs, typ.	56 V
Lightning test voltage I <sub>imp</sub> (10/350 μs)	1 kA
Specification class to IEC 61643-21	D1
Design	terminal
Ambient temperature (operational)	-40 ... 60°C
Storage temperature	-40 ... 85°C
Approvals	CE;UL listed

Rated voltage (AC)	24 V
Rated voltage (DC)	24 V
max. continuous voltage, U <sub>c</sub> (AC)	28 V
Operating current, I <sub>max</sub>	1.3 A
Volume resistivity	1.00 Ω
Gas discharge tube	yes
Varistor	yes
Suppression diodes	yes
Cut-off frequency (-3 dB) at load impedance	500.0 kHz 240 Ω
Discharge current, max. (8/20 μs)	5 kA
Protection level on output side sym., input 1 kV/μs, typ.	80 V
Protection level on output side sym., input 8/20 μs, typ.	130 V
Protection level on output side unsym., input 1kV/μs, typ.	40 V
Protection level on output side unsym., input 8/20 μs, typ.	65 V
Protection level on output side sym., input 10/350 μs, typ.	108 V
Protection level on output side unsym., input 10/350 μs, typ.	56 V
Lightning test voltage I <sub>imp</sub> (10/350 μs)	1 kA
Specification class to IEC 61643-21	D1
Design	terminal
Ambient temperature (operational)	-40 ... 60°C
Storage temperature	-40 ... 85°C
Approvals	CE;UL listed

Rated voltage (AC)	48 V
Rated voltage (DC)	48 V
max. continuous voltage, U <sub>c</sub> (AC)	53 V
Operating current, I <sub>max</sub>	0.5 A
Volume resistivity	2.50 Ω
Gas discharge tube	yes
Varistor	yes
Suppression diodes	yes
Cut-off frequency (-3 dB) at load impedance	500.0 kHz 240 Ω
Discharge current, max. (8/20 μs)	5 kA
Protection level on output side sym., input 1 kV/μs, typ.	82 V
Protection level on output side sym., input 8/20 μs, typ.	150 V
Protection level on output side unsym., input 1kV/μs, typ.	80 V
Protection level on output side unsym., input 8/20 μs, typ.	150 V
Protection level on output side sym., input 10/350 μs, typ.	149 V
Protection level on output side unsym., input 10/350 μs, typ.	223 V
Lightning test voltage I <sub>imp</sub> (10/350 μs)	2.5 kA
Specification class to IEC 61643-21	D1
Design	terminal
Ambient temperature (operational)	-40 ... 60°C
Storage temperature	-40 ... 85°C
Approvals	CE;UL listed

### Dimensions

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

### tension clamp connection

1.5 / 0.5 / 1.5
91 x 6 x 63.5

### tension clamp connection

1.5 / 0.5 / 1.5
91 x 6 x 63.5

### Note

Refer to derating curve

Refer to derating curve

### Ordering data

Version
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Type	Qty.	Order No.
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MCZ OVP SL 24VUC 1,25A	10	8448970000
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Type	Qty.	Order No.
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MCZ OVP CL 48VUC 0,5A	10	8449000000
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### Note

### Accessories

Note
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End plate AP MCZ 1.5: 8389030000
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End plate AP MCZ 1.5: 8389030000
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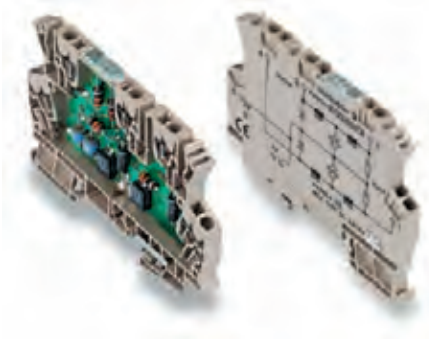
**MC series**

**3- or 1-stage protection with tension clamp connection**

- Slimline surge protection terminal with tension clamp connection
- 6 mm slimline fine surge protection
- fast wiring thanks to TS contact and tension clamp connections
- can be cross-connected using ZQV

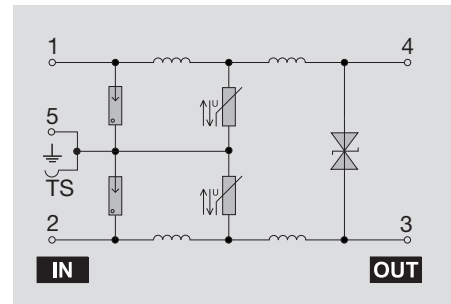
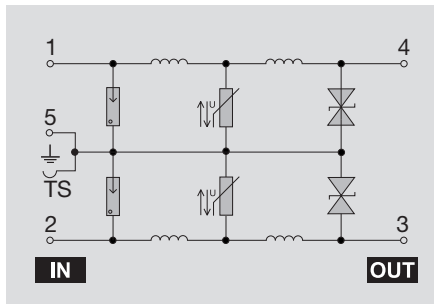
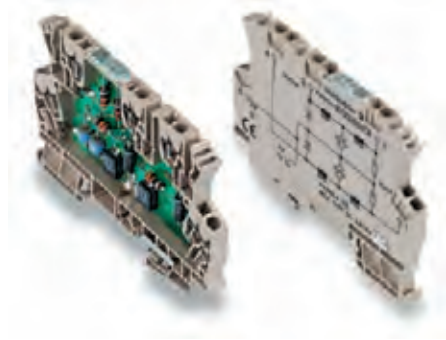
**MCZ OVP SL 48 V UC 0.5 A**

Protection for binary signals



**MCZ OVP CL 48 V UC 1.25 A**

Protection for current loops



**Technical data**

Technical data	
Rated voltage (AC)	48 V
Rated voltage (DC)	48 V
max. continuous voltage, U <sub>c</sub> (AC)	53 V
Operating current, I <sub>max</sub>	0.5 A
Volume resistivity	2.50 Ω
Gas discharge tube	yes
Varistor	yes
Suppression diodes	yes
Cut-off frequency (-3 dB) at load impedance	500.0 kHz 240 Ω
Discharge current, max. (8/20 μs)	5 kA
Protection level on output side sym., input 1 kV/μs, typ.	160 V
Protection level on output side sym., input 8/20 μs, typ.	300 V
Protection level on output side unsym., input 1kV/μs, typ.	82 V
Protection level on output side unsym., input 8/20 μs, typ.	150 V
Protection level on output side sym., input 10/350 μs, typ.	145 V
Protection level on output side unsym., input 10/350 μs, typ.	81 V
Lightning test voltage I <sub>imp</sub> (10/350 μs)	1 kA
Specification class to IEC 61643-21	D1
Design	terminal
Ambient temperature (operational)	-40 ... 60°C
Storage temperature	-40 ... 85°C
Approvals	CE;UL listed

Rated voltage (AC)	48 V
Rated voltage (DC)	48 V
max. continuous voltage, U <sub>c</sub> (AC)	53 V
Operating current, I <sub>max</sub>	1.3 A
Volume resistivity	1.00 Ω
Gas discharge tube	yes
Varistor	yes
Suppression diodes	yes
Cut-off frequency (-3 dB) at load impedance	500.0 kHz 240 Ω
Discharge current, max. (8/20 μs)	5 kA
Protection level on output side sym., input 1 kV/μs, typ.	82 V
Protection level on output side sym., input 8/20 μs, typ.	150 V
Protection level on output side unsym., input 1kV/μs, typ.	82 V
Protection level on output side unsym., input 8/20 μs, typ.	150 V
Protection level on output side sym., input 10/350 μs, typ.	94 V
Protection level on output side unsym., input 10/350 μs, typ.	193 V
Lightning test voltage I <sub>imp</sub> (10/350 μs)	1 kA
Specification class to IEC 61643-21	D1
Design	terminal
Ambient temperature (operational)	-40 ... 60°C
Storage temperature	-40 ... 85°C
Approvals	CE;UL listed

Technical data	
Rated voltage (AC)	48 V
Rated voltage (DC)	48 V
max. continuous voltage, U <sub>c</sub> (AC)	53 V
Operating current, I <sub>max</sub>	1.3 A
Volume resistivity	1.00 Ω
Gas discharge tube	yes
Varistor	yes
Suppression diodes	yes
Cut-off frequency (-3 dB) at load impedance	500.0 kHz 240 Ω
Discharge current, max. (8/20 μs)	5 kA
Protection level on output side sym., input 1 kV/μs, typ.	82 V
Protection level on output side sym., input 8/20 μs, typ.	150 V
Protection level on output side unsym., input 1kV/μs, typ.	82 V
Protection level on output side unsym., input 8/20 μs, typ.	150 V
Protection level on output side sym., input 10/350 μs, typ.	94 V
Protection level on output side unsym., input 10/350 μs, typ.	193 V
Lightning test voltage I <sub>imp</sub> (10/350 μs)	1 kA
Specification class to IEC 61643-21	D1
Design	terminal
Ambient temperature (operational)	-40 ... 60°C
Storage temperature	-40 ... 85°C
Approvals	CE;UL listed

**Dimensions**

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

**tension clamp connection**

1.5 / 0.5 / 1.5
91 x 6 x 63.5

**tension clamp connection**

1.5 / 0.5 / 1.5
91 x 6 x 63.5

**Note**

Refer to derating curve

Refer to derating curve

**Ordering data**

**Version**

**Type**

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

**Type**

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

**Note**

**Accessories**

**Note**

End plate
AP MCZ 1.5: 8389030000

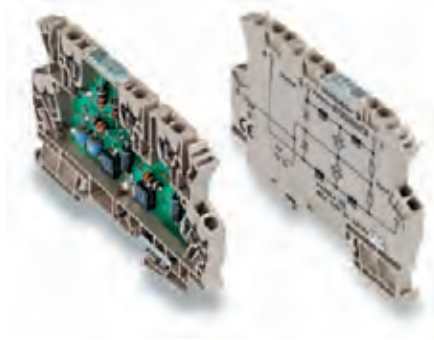
End plate
AP MCZ 1.5: 8389030000

### 3- or 1-stage protection with tension clamp connection

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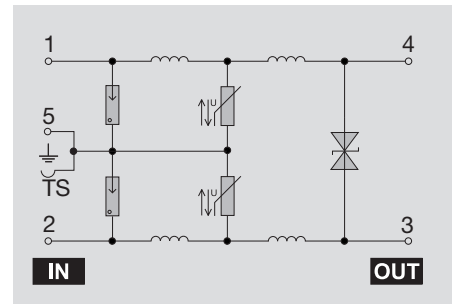
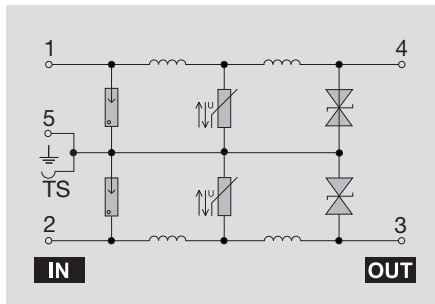
### MCZ OVP SL 48 V UC 1.25 A

Protection for binary signals



### MCZ OVP CL 115 V UC 1.25 A

Protection for current loops



### Technical data

Technical data	
Rated voltage (AC)	48 V
Rated voltage (DC)	48 V
max. continuous voltage, U <sub>c</sub> (AC)	53 V
Operating current, I <sub>max</sub>	1.3 A
Volume resistivity	1.00 Ω
Gas discharge tube	yes
Varistor	yes
Suppression diodes	yes
Cut-off frequency (-3 dB) at load impedance	500.0 kHz 240 Ω
Discharge current, max. (8/20 μs)	5 kA
Protection level on output side sym., input 1 kV/μs, typ.	160 V
Protection level on output side sym., input 8/20 μs, typ.	300 V
Protection level on output side unsym., input 1kV/μs, typ.	80 V
Protection level on output side unsym., input 8/20 μs, typ.	150 V
Protection level on output side sym., input 10/350 μs, typ.	197 V
Protection level on output side unsym., input 10/350 μs, typ.	119 V
Lightning test voltage I <sub>imp</sub> (10/350 μs)	2.5 kA
Specification class to IEC 61643-21	D1
Design	terminal
Ambient temperature (operational)	-40 ... 60°C
Storage temperature	-40 ... 85°C
Approvals	CE;UL listed

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

Note	
Refer to derating curve	

### Ordering data

Version

Note

### Accessories

Note
End plate AP MCZ 1.5: 8389030000

tension clamp connection		
1.5 / 0.5 / 1.5		
91 x 6 x 63.5		
Refer to derating curve		

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

Note

tension clamp connection		
1.5 / 0.5 / 1.5		
91 x 6 x 63.5		
Refer to derating curve		

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

Note

Note
End plate AP MCZ 1.5: 8389030000

## MC series

### 3- or 1-stage protection with tension clamp connection

- Slimline surge protection terminal with tension clamp connection
- 6 mm slimline fine surge protection
- fast wiring thanks to TS contact and tension clamp connections
- can be cross-connected using ZQV

### MCZ OVP SL 115 V UC 1.25 A

Protection for binary signals

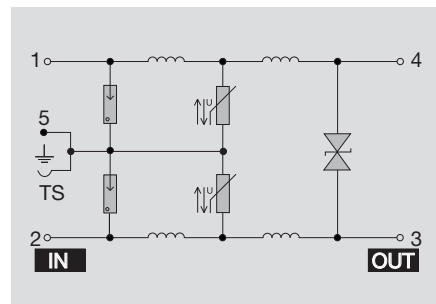
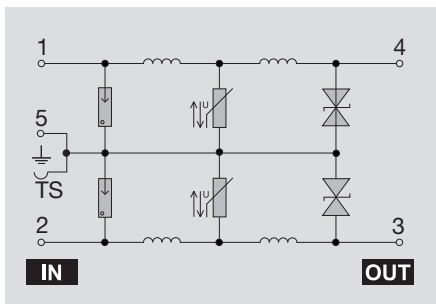


### MCZ OVP CL 230 V UC 1.25 A

Protection for current loops



D



### Technical data

Technical data	
Rated voltage (AC)	115 V
Rated voltage (DC)	115 V
max. continuous voltage, U <sub>c</sub> (AC)	127 V
Operating current, I <sub>max</sub>	1.3 A
Volume resistivity	1.00 Ω
Gas discharge tube	yes
Varistor	yes
Suppression diodes	yes
Cut-off frequency (-3 dB) at load impedance	500.0 kHz 240 Ω
Discharge current, max. (8/20 μs)	5 kA
Protection level on output side sym., input 1 kV/μs, typ.	440 V
Protection level on output side sym., input 8/20 μs, typ.	720 V
Protection level on output side unsym., input 1kV/μs, typ.	220 V
Protection level on output side unsym., input 8/20 μs, typ.	360 V
Protection level on output side sym., input 10/350 μs, typ.	249 V
Protection level on output side unsym., input 10/350 μs, typ.	322 V
Lightning test voltage I <sub>imp</sub> (10/350 μs)	2.5 kA
Specification class to IEC 61643-21	D1
Design	terminal
Ambient temperature (operational)	-40 ... 60°C
Storage temperature	-40 ... 85°C
Approvals	CE;

Rated voltage (AC)	115 V
Rated voltage (DC)	115 V
max. continuous voltage, U <sub>c</sub> (AC)	127 V
Operating current, I <sub>max</sub>	1.3 A
Volume resistivity	1.00 Ω
Gas discharge tube	yes
Varistor	yes
Suppression diodes	yes
Cut-off frequency (-3 dB) at load impedance	500.0 kHz 240 Ω
Discharge current, max. (8/20 μs)	5 kA
Protection level on output side sym., input 1 kV/μs, typ.	440 V
Protection level on output side sym., input 8/20 μs, typ.	720 V
Protection level on output side unsym., input 1kV/μs, typ.	220 V
Protection level on output side unsym., input 8/20 μs, typ.	360 V
Protection level on output side sym., input 10/350 μs, typ.	249 V
Protection level on output side unsym., input 10/350 μs, typ.	322 V
Lightning test voltage I <sub>imp</sub> (10/350 μs)	2.5 kA
Specification class to IEC 61643-21	D1
Design	terminal
Ambient temperature (operational)	-40 ... 60°C
Storage temperature	-40 ... 85°C
Approvals	CE;

Rated voltage (AC)	230 V
Rated voltage (DC)	230 V
max. continuous voltage, U <sub>c</sub> (AC)	250 V
Operating current, I <sub>max</sub>	1.3 A
Volume resistivity	1.00 Ω
Gas discharge tube	yes
Varistor	yes
Suppression diodes	yes
Cut-off frequency (-3 dB) at load impedance	500.0 kHz 240 Ω
Discharge current, max. (8/20 μs)	5 kA
Protection level on output side sym., input 1 kV/μs, typ.	420 V
Protection level on output side sym., input 8/20 μs, typ.	710 V
Protection level on output side unsym., input 1kV/μs, typ.	420 V
Protection level on output side unsym., input 8/20 μs, typ.	710 V
Protection level on output side sym., input 10/350 μs, typ.	497 V
Protection level on output side unsym., input 10/350 μs, typ.	945 V
Lightning test voltage I <sub>imp</sub> (10/350 μs)	0.5 kA
Specification class to IEC 61643-21	D1
Design	terminal
Ambient temperature (operational)	-40 ... 60°C
Storage temperature	-40 ... 85°C
Approvals	CE;

### Dimensions

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

### tension clamp connection

1.5 / 0.5 / 1.5
91 x 6 x 63.5

### tension clamp connection

1.5 / 0.5 / 1.5
91 x 6 x 63.5

### Note

Refer to derating curve

Refer to derating curve

### Ordering data

Version
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Type	Qty.	Order No.
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MCZ OVP SL 115VUC 1,25A	10	8449070000
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Type	Qty.	Order No.
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MCZ OVP CL 230VUC 1,25A	10	8449080000
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### Note

### Accessories

Note
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End plate AP MCZ 1.5: 8389030000
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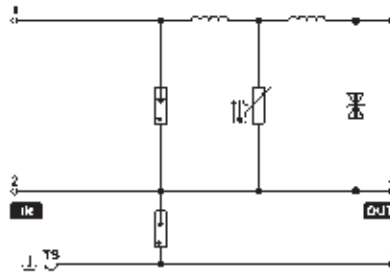
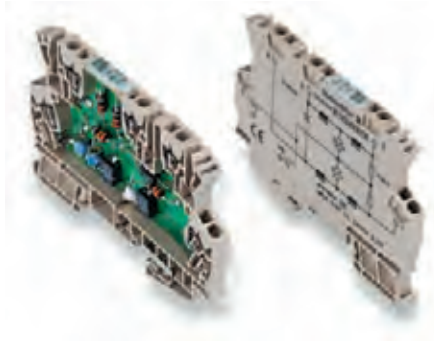
End plate AP MCZ 1.5: 8389030000
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### 3- or 1-stage protection with tension clamp connection

- Slimline surge protection terminal with tension clamp connection
- 6 mm slimline fine surge protection
- fast wiring thanks to TS contact and tension clamp connections
- can be cross-connected using ZQV

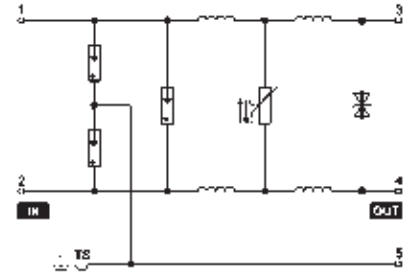
### MCZ SL FG 24 V AC 0.5 A

not earthed



### MCZ CL FG 24 V AC 0.5 A

not earthed



### Technical data

Technical data	
Rated voltage (AC)	24 V
Rated voltage (DC)	24 V
max. continuous voltage, U <sub>c</sub> (AC)	28 V
Operating current, I <sub>max</sub>	0.5 A
Volume resistivity	1.00 Ω
Gas discharge tube	90 V / 10 kA
Varistor	30 V
Suppression diodes	
Cut-off frequency (-3 dB) at load impedance	500.0 kHz / 240 Ω
Discharge current, max. (8/20 μs)	5 kA
Protection level on output side sym., input 1 kV/μs, typ.	40 V
Protection level on output side sym., input 8/20 μs, typ.	65 V
Protection level on output side unsym., input 1kV/μs, typ.	40 V
Protection level on output side unsym., input 8/20 μs, typ.	65 V
Protection level on output side sym., input 10/350 μs, typ.	56 V
Protection level on output side unsym., input 10/350 μs, typ.	812 V
Lightning test voltage I <sub>imp</sub> (10/350 μs)	1 kA
Specification class to IEC 61643-21	D1
Design	terminal
Ambient temperature (operational)	-40 ... 60°C
Storage temperature	-40 ... 85°C
Approvals	CE;UL listed

### Dimensions

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

### Note

### Ordering data

Version

### Note

### Accessories

Note

Rated voltage (AC)	24 V
Rated voltage (DC)	24 V
max. continuous voltage, U <sub>c</sub> (AC)	28 V
Operating current, I <sub>max</sub>	0.5 A
Volume resistivity	1.00 Ω
Gas discharge tube	90 V / 10 kA
Varistor	30 V
Suppression diodes	
Cut-off frequency (-3 dB) at load impedance	500.0 kHz / 240 Ω
Discharge current, max. (8/20 μs)	5 kA
Protection level on output side sym., input 1 kV/μs, typ.	40 V
Protection level on output side sym., input 8/20 μs, typ.	65 V
Protection level on output side unsym., input 1kV/μs, typ.	40 V
Protection level on output side unsym., input 8/20 μs, typ.	65 V
Protection level on output side sym., input 10/350 μs, typ.	56 V
Protection level on output side unsym., input 10/350 μs, typ.	812 V
Lightning test voltage I <sub>imp</sub> (10/350 μs)	1 kA
Specification class to IEC 61643-21	D1
Design	terminal
Ambient temperature (operational)	-40 ... 60°C
Storage temperature	-40 ... 85°C
Approvals	CE;UL listed

### tension clamp connection

1.5 / 0.5 / 1.5
91 x 6 x 63.5

Refer to derating curve

Type	Qty.	Order No.
MCZ OVP SL FG 24VUC 0,5A	10	8823280000

Rated voltage (AC)	24 V
Rated voltage (DC)	24 V
max. continuous voltage, U <sub>c</sub> (AC)	28 V
Operating current, I <sub>max</sub>	0.5 A
Volume resistivity	2.50 Ω
Gas discharge tube	90 V / 10 kA
Varistor	30 V
Suppression diodes	
Cut-off frequency (-3 dB) at load impedance	500.0 kHz / 240 Ω
Discharge current, max. (8/20 μs)	5 kA
Protection level on output side sym., input 1 kV/μs, typ.	40 V
Protection level on output side sym., input 8/20 μs, typ.	65 V
Protection level on output side unsym., input 1kV/μs, typ.	40 V
Protection level on output side unsym., input 8/20 μs, typ.	65 V
Protection level on output side sym., input 10/350 μs, typ.	53 V
Protection level on output side unsym., input 10/350 μs, typ.	328 V
Lightning test voltage I <sub>imp</sub> (10/350 μs)	1 kA
Specification class to IEC 61643-21	D1
Design	terminal
Ambient temperature (operational)	-40 ... 60°C
Storage temperature	-40 ... 85°C
Approvals	CE;UL listed

### tension clamp connection

1.5 / 0.5 / 1.5
91 x 6 x 63.5

Refer to derating curve

Type	Qty.	Order No.
MCZ OVP CL FG 24VUC 0,5A	10	8704240000

### Note

Note

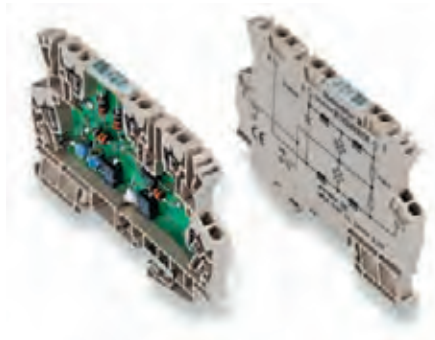
**MC series**

**3- or 1-stage protection with tension clamp connection**

- Slimline surge protection terminal with tension clamp connection
- 6 mm slimline fine surge protection
- fast wiring thanks to TS contact and tension clamp connections
- can be cross-connected using ZQV

**MCZ OVP SL 230 V UC 1.25 A**

**Protection for binary signals**

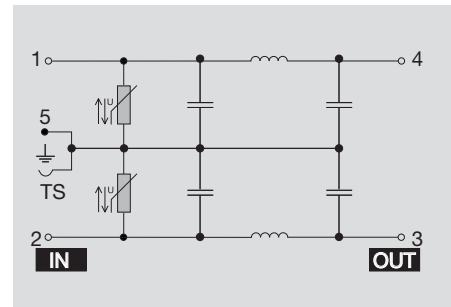
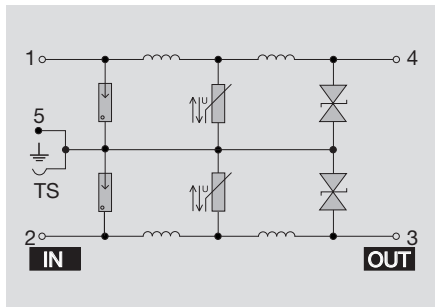


**MCZ OVP 24 V 0.5 A**

**Filter**



D



**Technical data**

Technical data	
Rated voltage (AC)	230 V
Rated voltage (DC)	230 V
max. continuous voltage, U <sub>c</sub> (AC)	250 V
Operating current, I <sub>max</sub>	1.3 A
Volume resistivity	1.00 Ω
Gas discharge tube	yes
Varistor	yes
Suppression diodes	yes
Cut-off frequency (-3 dB) at load impedance	500.0 kHz 240 Ω
Discharge current, max. (8/20 μs)	5 kA
Protection level on output side sym., input 1 kV/μs, typ.	840 V
Protection level on output side sym., input 8/20 μs, typ.	1420 V
Protection level on output side unsym., input 1kV/μs, typ.	420 V
Protection level on output side unsym., input 8/20 μs, typ.	710 V
Protection level on output side sym., input 10/350 μs, typ.	
Protection level on output side unsym., input 10/350 μs, typ.	
Lightning test voltage I <sub>imp</sub> (10/350 μs)	< 0,5 kA
Specification class to IEC 61643-21	D1
Design	terminal
Ambient temperature (operational)	-40 ... 60°C
Storage temperature	-40 ... 85°C
Approvals	CE;

Rated voltage (AC)	230 V
Rated voltage (DC)	230 V
max. continuous voltage, U <sub>c</sub> (AC)	250 V
Operating current, I <sub>max</sub>	1.3 A
Volume resistivity	1.00 Ω
Gas discharge tube	yes
Varistor	yes
Suppression diodes	yes
Cut-off frequency (-3 dB) at load impedance	500.0 kHz 240 Ω
Discharge current, max. (8/20 μs)	5 kA
Protection level on output side sym., input 1 kV/μs, typ.	840 V
Protection level on output side sym., input 8/20 μs, typ.	1420 V
Protection level on output side unsym., input 1kV/μs, typ.	420 V
Protection level on output side unsym., input 8/20 μs, typ.	710 V
Protection level on output side sym., input 10/350 μs, typ.	
Protection level on output side unsym., input 10/350 μs, typ.	
Lightning test voltage I <sub>imp</sub> (10/350 μs)	< 0,5 kA
Specification class to IEC 61643-21	D1
Design	terminal
Ambient temperature (operational)	-40 ... 60°C
Storage temperature	-40 ... 85°C
Approvals	CE;

Rated voltage (AC)	24 V
Rated voltage (DC)	24 V
max. continuous voltage, U <sub>c</sub> (AC)	26.4 V
Operating current, I <sub>max</sub>	0.5 A
Volume resistivity	1.50 Ω
Gas discharge tube	no
Varistor	yes
Suppression diodes	no
Cut-off frequency (-3 dB) at load impedance	50.0 kHz 50 Ω
Discharge current, max. (8/20 μs)	0.5 kA
Protection level on output side sym., input 1 kV/μs, typ.	140 V
Protection level on output side sym., input 8/20 μs, typ.	190 V
Protection level on output side unsym., input 1kV/μs, typ.	70 V
Protection level on output side unsym., input 8/20 μs, typ.	100 V
Protection level on output side sym., input 10/350 μs, typ.	
Protection level on output side unsym., input 10/350 μs, typ.	
Lightning test voltage I <sub>imp</sub> (10/350 μs)	
Specification class to IEC 61643-21	
Design	terminal
Ambient temperature (operational)	-40 ... 60°C
Storage temperature	-40 ... 85°C
Approvals	CE;

**Dimensions**

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

**tension clamp connection**

1.5 / 0.5 / 1.5
91 x 6 x 63.5

**tension clamp connection**

1.5 / 0.5 / 1.5
91 x 6 x 63.5

**Note**

Refer to derating curve

Refer to derating curve

**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

**Note**

**Accessories**

<b>Note</b>
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End plate AP MCZ 1.5: 8389030000
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End plate AP MCZ 1.5: 8389030000
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### 3- or 1-stage protection with tension clamp connection

- Slimline surge protection terminal with tension clamp connection
- 6 mm slimline fine surge protection
- fast wiring thanks to TS contact and tension clamp connections
- can be cross-connected using ZQV

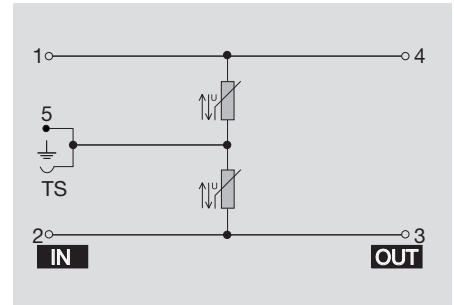
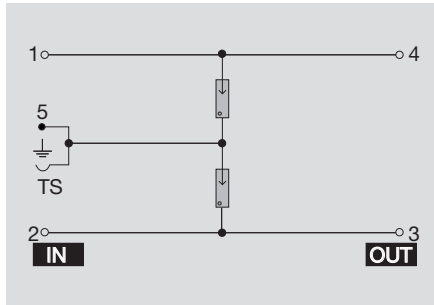
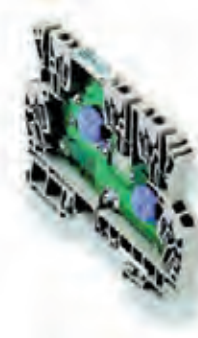
### MCZ OVP 90 V

Gas discharge tube / EIB-capable



### MCZ OVP S10K30

Varistor S10K30



#### Technical data

Technical data	
Rated voltage (AC)	50 V
Rated voltage (DC)	70 V
max. continuous voltage, U <sub>c</sub> (AC)	72 V
Operating current, I <sub>max</sub>	13 A
Volume resistivity	0.20 Ω
Gas discharge tube	90 V / 10 kA
Varistor	no
Suppression diodes	no
Cut-off frequency (-3 dB) at load impedance	
Discharge current, max. (8/20 μs)	5 kA
Protection level on output side sym., input 1 kV/μs, typ.	700 V
Protection level on output side sym., input 8/20 μs, typ.	800 V
Protection level on output side unsym., input 1kV/μs, typ.	700 V
Protection level on output side unsym., input 8/20 μs, typ.	800 V
Protection level on output side sym., input 10/350 μs, typ.	763 V
Protection level on output side unsym., input 10/350 μs, typ.	782 V
Lightning test voltage I <sub>imp</sub> (10/350 μs)	1 kA
Specification class to IEC 61643-21	D1
Design	terminal
Ambient temperature (operational)	-40 ... 60 °C
Storage temperature	-40 ... 85 °C
Approvals	CE;UL listed

Rated voltage (AC)	24 V
Rated voltage (DC)	24 V
max. continuous voltage, U <sub>c</sub> (AC)	30 V
Operating current, I <sub>max</sub>	13 A
Volume resistivity	0.20 Ω
Gas discharge tube	no
Varistor	yes
Suppression diodes	no
Cut-off frequency (-3 dB) at load impedance	
Discharge current, max. (8/20 μs)	125 A
Protection level on output side sym., input 1 kV/μs, typ.	45 V
Protection level on output side sym., input 8/20 μs, typ.	55 V
Protection level on output side unsym., input 1kV/μs, typ.	45 V
Protection level on output side unsym., input 8/20 μs, typ.	55 V
Protection level on output side sym., input 10/350 μs, typ.	263 V
Protection level on output side unsym., input 10/350 μs, typ.	136 V
Lightning test voltage I <sub>imp</sub> (10/350 μs)	0.5 kA
Specification class to IEC 61643-21	D1
Design	terminal
Ambient temperature (operational)	-40 ... 60 °C
Storage temperature	-40 ... 85 °C
Approvals	CE;UL listed

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

tension clamp connection	
Clamping range (rating- / min. / max.)	1.5 / 0.5 / 1.5
Length x width x height	91 x 6 x 63.5
Note	Refer to derating curve

tension clamp connection	
Clamping range (rating- / min. / max.)	1.5 / 0.5 / 1.5
Length x width x height	91 x 6 x 63.5
Note	Refer to derating curve

#### Ordering data

Version
Note

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

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

#### Accessories

Note

End plate AP MCZ 1.5: 8389030000
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End plate AP MCZ 1.5: 8389030000
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**MC series**

**3- or 1-stage protection with tension clamp connection**

- Slimline surge protection terminal with tension clamp connection
- 6 mm slimline fine surge protection
- fast wiring thanks to TS contact and tension clamp connections
- can be cross-connected using ZQV

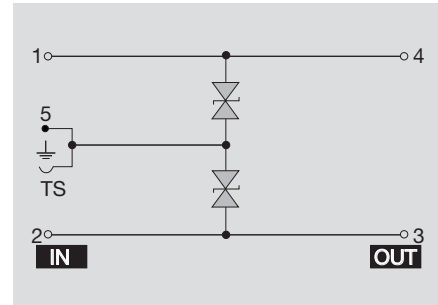
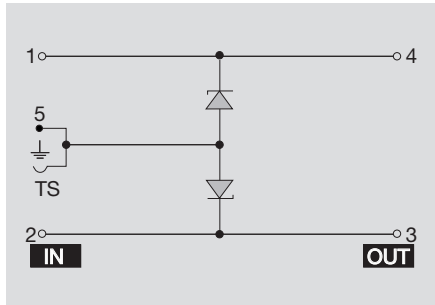
**MCZ OVP TAZ 24 V DC**

Diode unipolar



**MCZ OVP TAZ 24 V UC**

Diode bipolar



**Technical data**

Technical data	
Rated voltage (AC)	
Rated voltage (DC)	
max. continuous voltage, U <sub>c</sub> (AC)	
Operating current, I <sub>max</sub>	
Volume resistivity	
Gas discharge tube	
Varistor	
Suppression diodes	
Cut-off frequency (-3 dB) at load impedance	
Discharge current, max. (8/20 μs)	
Protection level on output side sym., input 1 kV/μs, typ.	
Protection level on output side sym., input 8/20 μs, typ.	
Protection level on output side unsym., input 1kV/μs, typ.	
Protection level on output side unsym., input 8/20 μs, typ.	
Protection level on output side sym., input 10/350 μs, typ.	
Protection level on output side unsym., input 10/350 μs, typ.	
Lightning test voltage I <sub>imp</sub> (10/350 μs)	
Specification class to IEC 61643-21	
Design	
Ambient temperature (operational)	
Storage temperature	
Approvals	

24 V
30 V
13 A
0.20 Ω
no
no
yes
112 A
55 V
65 V
55 V
65 V
terminal
-40 ... 60°C
-40 ... 85°C
CE;UL listed

24 V
27 V
27 V
13 A
0.20 Ω
no
no
yes
0.5 kA
55 V
65 V
110 V
130 V
terminal
-40 ... 60°C
-40 ... 85°C
CE;UL listed

**Dimensions**

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

**tension clamp connection**

1.5 / 0.5 / 1.5
91 x 6 x 63.5

**tension clamp connection**

1.5 / 0.5 / 1.5
91 x 6 x 63.5

**Note**

Refer to derating curve

Refer to derating curve

**Ordering data**

Version

Type	Qty.	Order No.
MCZ OVP TAZ DIODE 24VDC	10	8449150000

Type	Qty.	Order No.
MCZ OVP TAZ DIODE 24VUC	10	8449160000

**Note**

**Accessories**

<b>Note</b>
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End plate AP MCZ 1.5: 8389030000
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End plate AP MCZ 1.5: 8389030000
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