

# Slim Surge protection terminals for instrumentation and control engineering

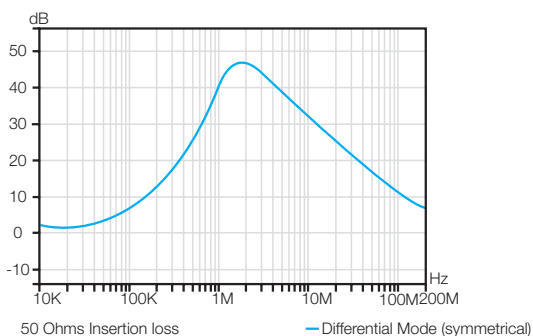
Weidmüller MCZ OVP surge protection terminals are characterised by their high level of protection concentrated in a compact space of 6 mm. The tension spring connection and direct earthing via the terminal rail contact results in time-savings during installation. The MCZ OVP terminals are suitable for 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  $\mu$ s) 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 90 Mhz can be reached in 100-Ohm systems.

This protective circuitry is particularly appropriate for protecting high-speed data transmission systems or 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.

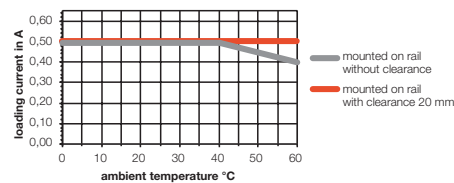
**MCZ OVP CL FG** is a three-stage protective combination with a suppression diode between the current paths. It limits the surge in analogue signal circuits. A high-resistance earth connection is achieved with a gas discharge tube.

**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.

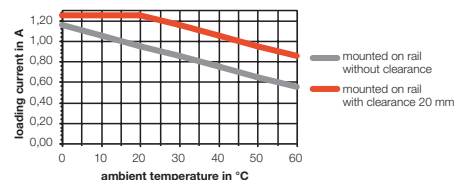
A high-resistance earth connection is achieved with three gas discharge tubes.

**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 Filter



Derating curve MCZ OVP Filter

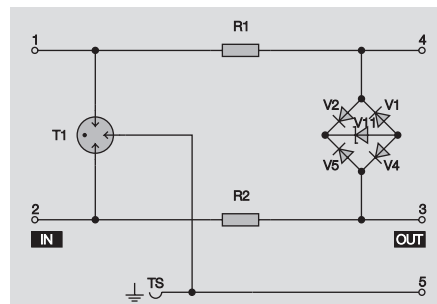
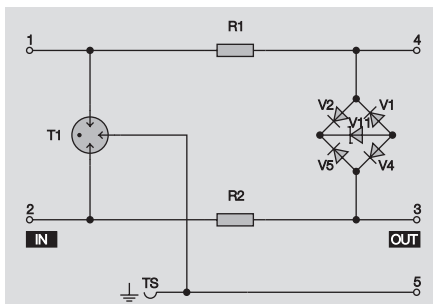
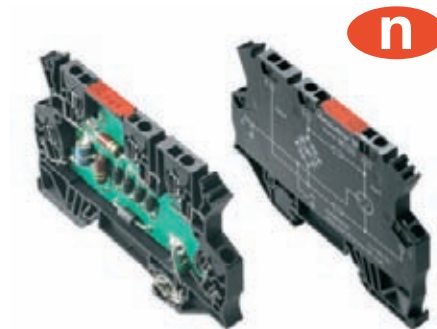
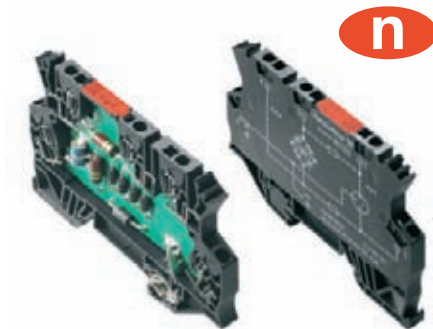


**2-stage protection with tension clamp connection**

- 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

**MCZ OVP HF 5V 0.3A**

**MCZ OVP HF 12V 0.3A**



**Technical data**

**Technical data**

|   |  |
|---|--|
| Rated voltage (AC/DC)   |  |
| max. continuous voltage, Uc (DC)                              |  |
| max. continuous voltage, Uc (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  |  |
| Storage temperature, min./max.                                |  |
| Operating temperature, min./max.                              |  |
| Approvals   |  |

**Dimensions**

|  |                 |                 |
|--|-----------------|-----------------|
| Clamping range (rating- / min. / max.) | mm <sup>2</sup> | 1.5 / 0.5 / 1.5 |
| Length x width x height                | mm              | 91 x 6 x 63.5   |

**Note**

**Ordering data**

| Version |
|---------|
|         |

**Note**

**Accessories**

|             |
|-------------|
| <b>Note</b> |
|-------------|

|                                      |
|--------------------------------------|
| 5 V                                  |
| 10 V                                 |
| 7 V                                  |
| 0.3 A                                |
| 2.50 Ω                               |
| 90 V                                 |
|                                      |
| 100.0 MHz (measured in 100 Ω system) |
| 5 kA                                 |
| 15 V                                 |
| 15 V                                 |
| 15 V                                 |
| 30 V                                 |
|                                      |
| C1 ;C2 ;C3 ;D1                       |
| terminal                             |
| -40 °C/85 °C                         |
| -40 °C/60 °C                         |
| CE                                   |

|                 |
|-----------------|
| 1.5 / 0.5 / 1.5 |
| 91 x 6 x 63.5   |

| Type               | Qty. | Order No.  |
|--------------------|------|------------|
| MCZ OVP HF 5V 0,3A | 10   | 8948620000 |
|                    |      |            |
|                    |      |            |

|                                     |
|-------------------------------------|
| End plate<br>AP MCZ 1.5: 1046410000 |
|-------------------------------------|

|                                      |
|--------------------------------------|
| 12 V                                 |
| 18.5 V                               |
| 13 V                                 |
| 0.3 A                                |
| 2.50 Ω                               |
| 90 V                                 |
|                                      |
| 100.0 MHz (measured in 100 Ω system) |
| 5 kA                                 |
| 25 V                                 |
| 25 V                                 |
| 25 V                                 |
| 40 V                                 |
|                                      |
| C1 ;C2 ;C3 ;D1                       |
| terminal                             |
| -40 °C/85 °C                         |
| -40 °C/60 °C                         |
| CE                                   |

|                 |
|-----------------|
| 1.5 / 0.5 / 1.5 |
| 91 x 6 x 63.5   |

| Type                | Qty. | Order No.  |
|---------------------|------|------------|
| MCZ OVP HF 12V 0,3A | 10   | 8948610000 |
|                     |      |            |
|                     |      |            |

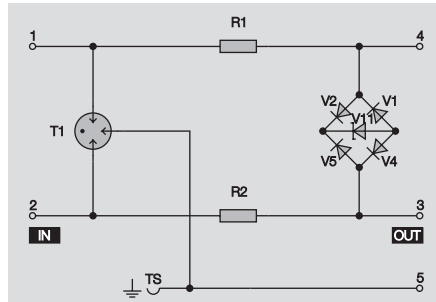
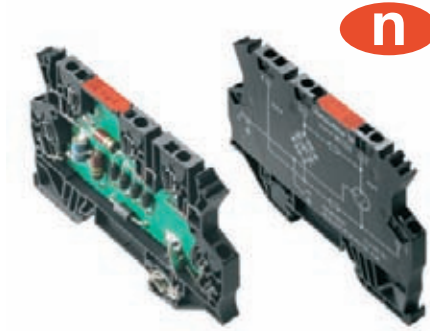
|                                     |
|-------------------------------------|
| End plate<br>AP MCZ 1.5: 1046410000 |
|-------------------------------------|

## Surge protection for instrumentation and control systems

## 2-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 HF 24V 0.3A



## Technical data

## Technical data

|  |   |
|--|---|
| Rated voltage (AC/DC)  | 24 V  |
| max. continuous voltage, $U_c$ (DC)                                | 40 V  |
| max. continuous voltage, $U_c$ (AC)                                | 28 V  |
| Operating current, $I_{max}$                                       | 0.3 A                                       |
| Volume resistivity   | 2.50 $\Omega$                               |
| Gas discharge tube   | 90 V  |
| Varistor   |   |
| Suppression diodes   |   |
| Cut-off frequency (-3 dB) at load impedance                        | 100.0 MHz (measured in 100 $\Omega$ system) |
| Discharge current, max. (8/20 $\mu$ s)                             | 5 kA  |
| Protection level on output side sym., input 1 kV/ $\mu$ s, typ.    | 80 V  |
| Protection level on output side sym., input 8/20 $\mu$ s, typ.     | 80 V  |
| Protection level on output side unsym., input 1kV/ $\mu$ s, typ.   | 80 V  |
| Protection level on output side unsym., input 8/20 $\mu$ s, typ.   | 150 V                                       |
| Protection level on output side sym., input 10/350 $\mu$ s, typ.   |   |
| Protection level on output side unsym., input 10/350 $\mu$ s, typ. |   |
| Lightning test voltage $I_{imp}$ (10/350 $\mu$ s)                  |   |
| Specification class to IEC 61643-21                                | C1 ;C2 ;C3 ;D1                              |
| Design   | terminal                                    |
| Storage temperature, min./max.                                     | -40 °C/85 °C                                |
| Operating temperature, min./max.                                   | -40 °C/60 °C                                |
| Approvals  | CE  |

## Dimensions

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

## Note

## tension clamp connection

|                 |
|-----------------|
| 1.5 / 0.5 / 1.5 |
| 91 x 6 x 63.5   |

## Ordering data

## Version

| Type                | Qty. | Order No.  |
|---------------------|------|------------|
| MCZ OVP HF 24V 0,3A | 10   | 8948600000 |

## Note

## Accessories

## Note

|                        |
|------------------------|
| End plate              |
| AP MCZ 1.5: 1046410000 |

### 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

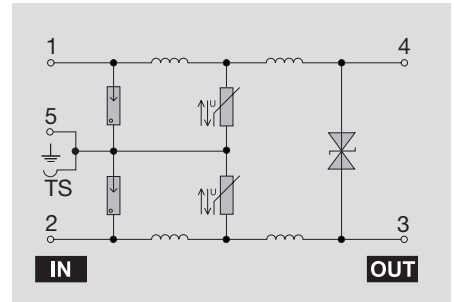
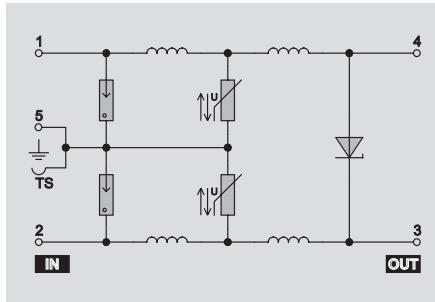
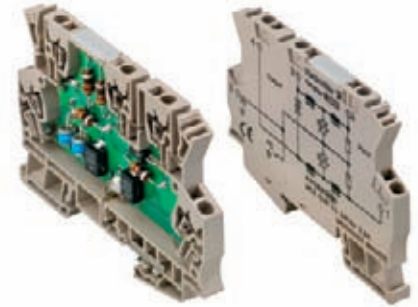
### MCZ OVP CL 24 V DC 0.5 A

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            |
| 38 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<br>AP MCZ 1.5: 8389030000 |
|-------------------------------------|

|                                     |
|-------------------------------------|
| End plate<br>AP MCZ 1.5: 8389030000 |
|-------------------------------------|

## Surge protection for instrumentation and control systems

## 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

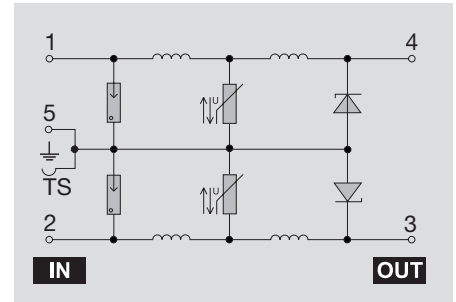
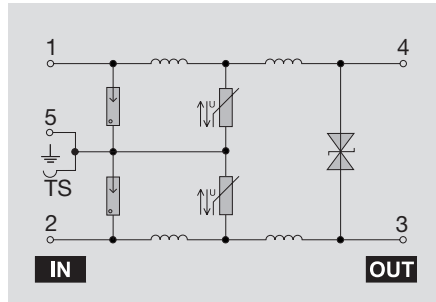
## MCZ OVP CL 24 V UC 1.25 A

Protection for current loops



## MCZ OVP SL 24 V DC 0.5 A

Protection for binary signals



## 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    |

## Dimensions

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

## Note

## tension clamp connection

|                 |
|-----------------|
| 1.5 / 0.5 / 1.5 |
| 91 x 6 x 63.5   |

Refer to derating curve

## Ordering data

## Version

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

## 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 SL 24VDC 0,5A | 10   | 8448940000 |

## 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

- Slimline surge protection terminal with tension clamp connection
- 6 mm slimline fine surge protection
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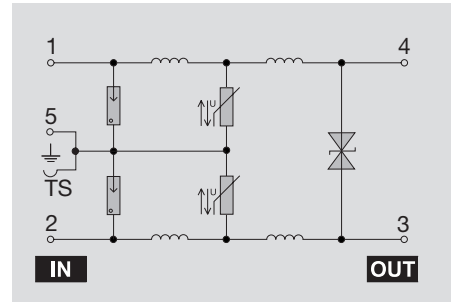
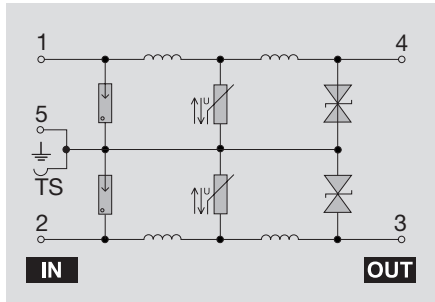
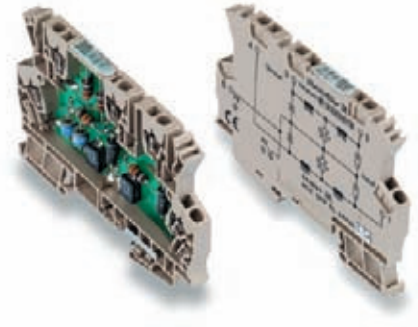
### MCZ OVP SL 24 V UC 1.25 A

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    |

| 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.     | 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    |

| 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.     | 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

##### Type

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

##### Type

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

#### Note

#### Accessories

##### Note

|                                     |
|-------------------------------------|
| End plate<br>AP MCZ 1.5: 8389030000 |
|-------------------------------------|

|                                     |
|-------------------------------------|
| End plate<br>AP MCZ 1.5: 8389030000 |
|-------------------------------------|

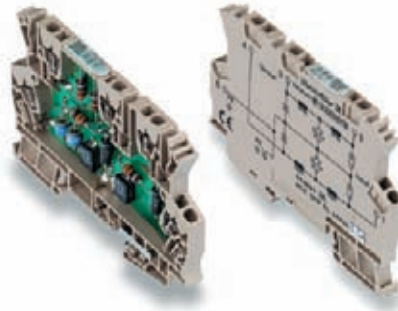
## Surge protection for instrumentation and control systems

## 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

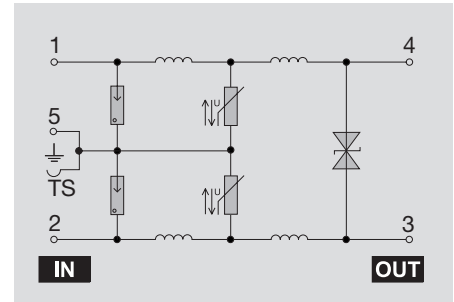
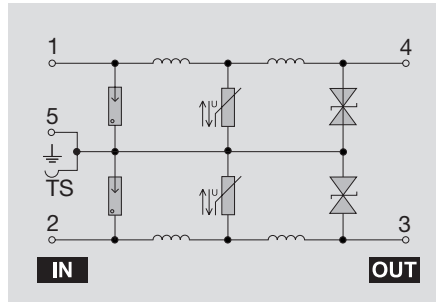
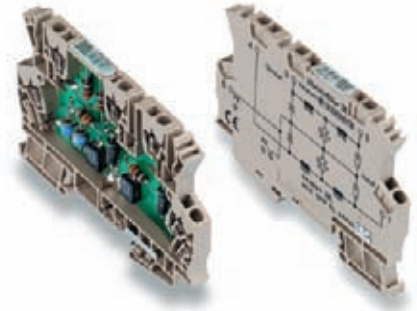
## MCZ OVP SL 48 V UC 0.5 A

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    |

## Dimensions

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

## Note

## tension clamp connection

|                 |
|-----------------|
| 1.5 / 0.5 / 1.5 |
| 91 x 6 x 63.5   |

Refer to derating curve

## Ordering data

## Version

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

## 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 48VUC 1,25A | 10   | 8449040000 |

## Accessories

## Note

End plate  
AP MCZ 1.5: 8389030000

End plate  
AP MCZ 1.5: 8389030000

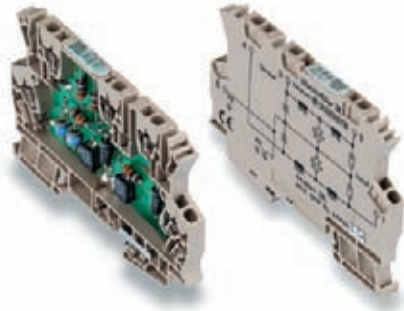


### 3- or 1-stage protection with tension clamp connection

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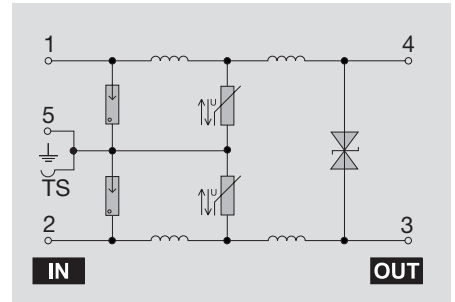
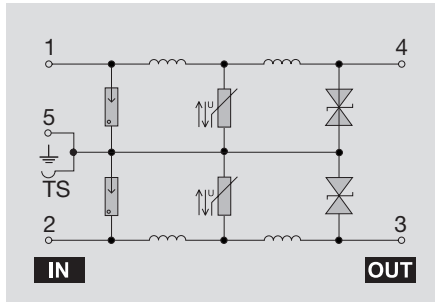
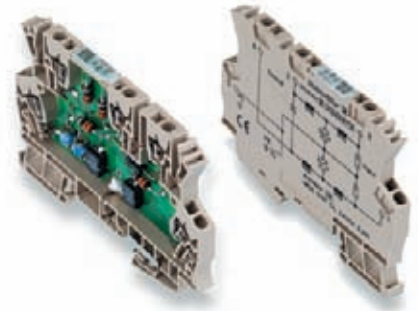
### MCZ OVP SL 48 V UC 1.25 A

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

### Ordering data

| Version |
|---------|
|         |

Note

### Accessories

Note

|                 |
|-----------------|
| 48 V            |
| 48 V            |
| 53 V            |
| 1.3 A           |
| 1.00 Ω          |
| yes             |
| yes             |
| yes             |
| 500.0 kHz 240 Ω |
| 5 kA            |
| 160 V           |
| 300 V           |
| 80 V            |
| 150 V           |
| 197 V           |
| 119 V           |
| 2.5 kA          |
| D1              |
| terminal        |
| -40 ... 60°C    |
| -40 ... 85°C    |
| 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 48VUC 1,25A | 10   | 8449050000 |

|                 |
|-----------------|
| 115 V           |
| 115 V           |
| 127 V           |
| 1.3 A           |
| 1.00 Ω          |
| yes             |
| yes             |
| yes             |
| 500.0 kHz 240 Ω |
| 5 kA            |
| 220 V           |
| 360 V           |
| 220 V           |
| 360 V           |
| 228 V           |
| 234 V           |
| 1 kA            |
| D1              |
| terminal        |
| -40 ... 60°C    |
| -40 ... 85°C    |
| CE;             |

| 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

End plate  
AP MCZ 1.5: 8389030000



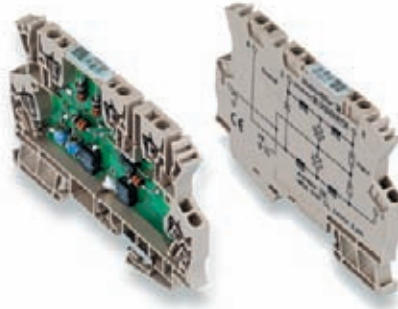
## Surge protection for instrumentation and control systems

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

- Slimline surge protection terminal with tension clamp connection
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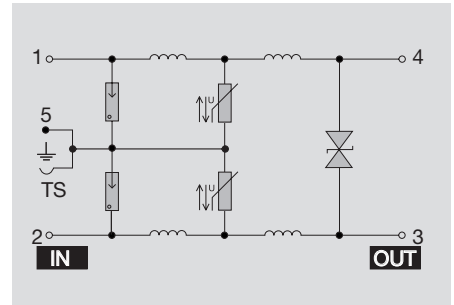
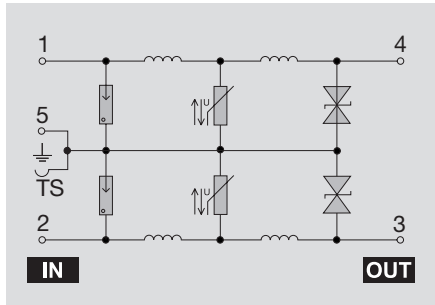
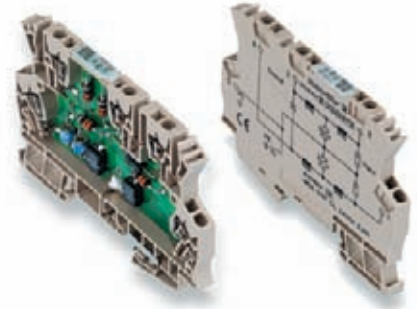
### MCZ OVP SL 115 V UC 1.25 A

Protection for binary signals



### MCZ OVP CL 230 V UC 1.25 A

Protection for current loops



### 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;             |

#### Dimensions

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

#### Note

#### tension clamp connection

|                 |
|-----------------|
| 1.5 / 0.5 / 1.5 |
| 91 x 6 x 63.5   |

Refer to derating curve

### Ordering data

#### Version

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

#### 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 230VUC 1,25A | 10   | 8449080000 |

#### Note

### Accessories

#### Note

End plate  
AP MCZ 1.5: 8389030000

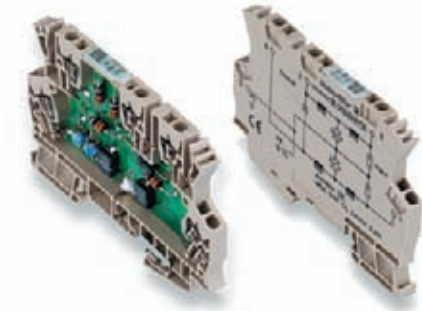
End plate  
AP MCZ 1.5: 8389030000

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

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- fast wiring thanks to TS contact and tension clamp connections
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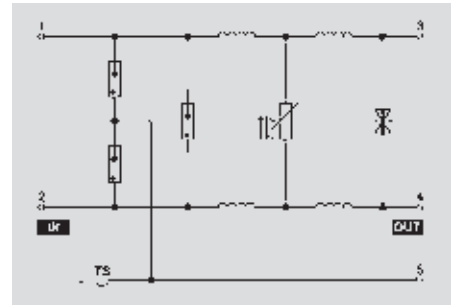
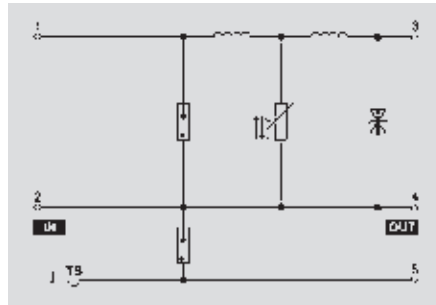
#### MCZ SL FG 24 V AC 0.5 A

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      |

|   |                   |
|---|-------------------|
| 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      |

|   |                   |
|---|-------------------|
| 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      |

### 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 FG 24VUC 0,5A | 10   | 8823280000 |
|                          |      |            |

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

### Note

### Accessories

|      |
|------|
| Note |
|------|

|                                     |
|-------------------------------------|
| End plate<br>AP MCZ 1.5: 8389030000 |
|-------------------------------------|

|                                     |
|-------------------------------------|
| End plate<br>AP MCZ 1.5: 8389030000 |
|-------------------------------------|

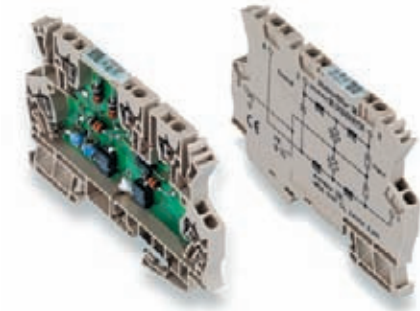
## Surge protection for instrumentation and control systems

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

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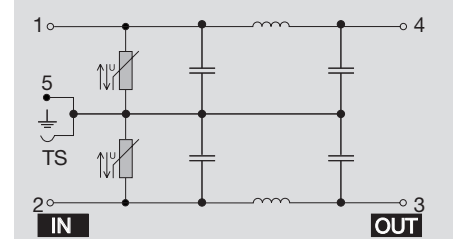
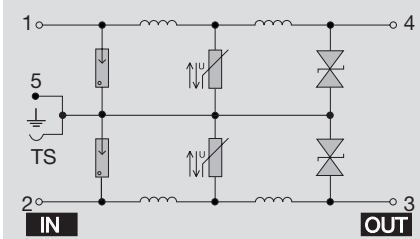
## MCZ OVP SL 230 V UC 1.25 A

## Protection for binary signals



## MCZ OVP 24 V 0.5 A

## Filter



## Technical data

## Technical data

|  |                        |
|--|------------------------|
| Rated voltage (AC)   | 230 V                  |
| Rated voltage (DC)   | 230 V                  |
| max. continuous voltage, $U_c$ (AC)                                | 250 V                  |
| Operating current, $I_{max}$                                       | 1.3 A                  |
| Volume resistivity   | 1.00 $\Omega$          |
| Gas discharge tube   | yes                    |
| Varistor   | yes                    |
| Suppression diodes   | yes                    |
| Cut-off frequency (-3 dB) at load impedance                        | 500.0 kHz 240 $\Omega$ |
| Discharge current, max. (8/20 $\mu$ s)                             | 5 kA                   |
| Protection level on output side sym., input 1 kV/ $\mu$ s, typ.    | 840 V                  |
| Protection level on output side sym., input 8/20 $\mu$ s, typ.     | 1420 V                 |
| Protection level on output side unsym., input 1kV/ $\mu$ s, typ.   | 420 V                  |
| Protection level on output side unsym., input 8/20 $\mu$ s, typ.   | 710 V                  |
| Protection level on output side sym., input 10/350 $\mu$ s, typ.   |                        |
| Protection level on output side unsym., input 10/350 $\mu$ s, typ. |                        |
| Lightning test voltage $I_{imp}$ (10/350 $\mu$ s)                  | < 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              |

## Note

## tension clamp connection

|                 |
|-----------------|
| 1.5 / 0.5 / 1.5 |
| 91 x 6 x 63.5   |

Refer to derating curve

|                      |
|----------------------|
| 24 V                 |
| 24 V                 |
| 26.4 V               |
| 0.5 A                |
| 1.50 $\Omega$        |
| no                   |
| yes                  |
| no                   |
| 50.0 kHz 50 $\Omega$ |
| 0.5 kA               |
| 140 V                |
| 190 V                |
| 70 V                 |
| 100 V                |

## terminal

|              |
|--------------|
| -40 ... 60°C |
| -40 ... 85°C |

CE;

## tension clamp connection

|                 |
|-----------------|
| 1.5 / 0.5 / 1.5 |
| 91 x 6 x 63.5   |

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

## 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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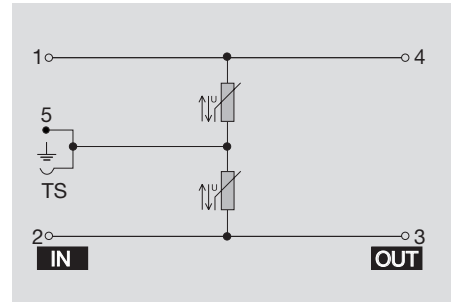
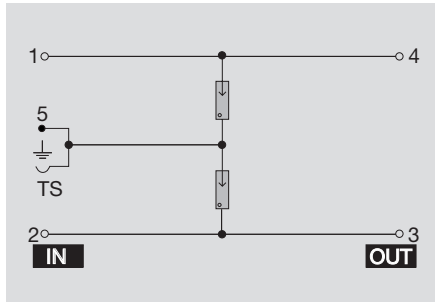
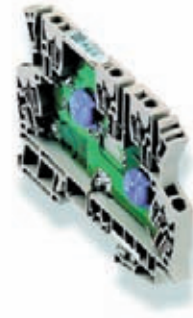
#### MCZ OVP 90 V

Gas discharge tube



#### 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>                           | 16 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>                           | 16 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

|                 |
|-----------------|
| 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 Gas charge eliminator 90V | 10 | 8449130000 |
|-----------------------------------|----|------------|

| Type | Qty. | Order No. |
|------|------|-----------|
|------|------|-----------|

|                         |    |            |
|-------------------------|----|------------|
| MCZ OVP VARISTOR S10K30 | 10 | 8449140000 |
|-------------------------|----|------------|

#### Note

#### Accessories

| Note |
|------|
|------|

|                                     |
|-------------------------------------|
| End plate<br>AP MCZ 1.5: 8389030000 |
|-------------------------------------|

|                                     |
|-------------------------------------|
| End plate<br>AP MCZ 1.5: 8389030000 |
|-------------------------------------|

## Surge protection for instrumentation and control systems

## 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

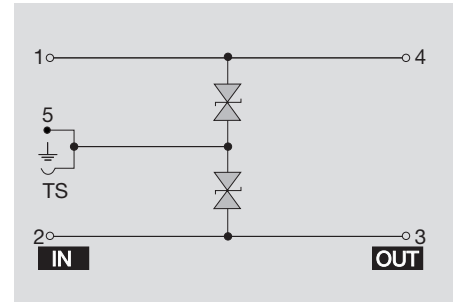
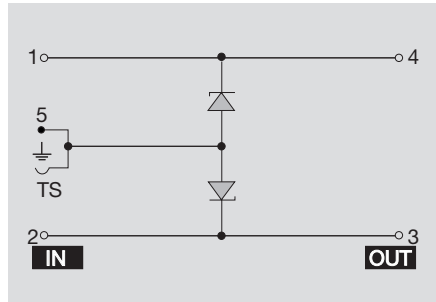
## MCZ OVP TAZ 24 V DC

Diode unipolar



## MCZ OVP TAZ 24 V UC

Diode bipolar



## Technical data

## Technical data

|  |
|--|
| Rated voltage (AC)   |
| Rated voltage (DC)   |
| max. continuous voltage, $U_c$ (AC)                                |
| Operating current, $I_{max}$                                       |
| Volume resistivity   |
| Gas discharge tube   |
| Varistor   |
| Suppression diodes   |
| Cut-off frequency (-3 dB) at load impedance                        |
| Discharge current, max. (8/20 $\mu$ s)                             |
| Protection level on output side sym., input 1 kV/ $\mu$ s, typ.    |
| Protection level on output side sym., input 8/20 $\mu$ s, typ.     |
| Protection level on output side unsym., input 1kV/ $\mu$ s, typ.   |
| Protection level on output side unsym., input 8/20 $\mu$ s, typ.   |
| Protection level on output side sym., input 10/350 $\mu$ s, typ.   |
| Protection level on output side unsym., input 10/350 $\mu$ s, typ. |
| Lightning test voltage $I_{imp}$ (10/350 $\mu$ s)                  |
| Specification class to IEC 61643-21                                |
| Design   |
| Ambient temperature (operational)                                  |
| Storage temperature  |
| Approvals  |

## Dimensions

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

## Note

## Ordering data

## Version

## Note

## Accessories

## Note

|               |
|---------------|
| 24 V          |
| 30 V          |
| 16 A          |
| 0.20 $\Omega$ |
| no            |
| no            |
| yes           |
| 112 A         |
| 55 V          |
| 65 V          |
| 55 V          |
| 65 V          |
| terminal      |
| -40 ... 60°C  |
| -40 ... 85°C  |
| 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 TAZ DIODE 24VDC | 10   | 8449150000 |

End plate  
AP MCZ 1.5: 8389030000

|               |
|---------------|
| 24 V          |
| 27 V          |
| 27 V          |
| 16 A          |
| 0.20 $\Omega$ |
| no            |
| no            |
| yes           |
| 0.5 kA        |
| 55 V          |
| 65 V          |
| 110 V         |
| 130 V         |
| terminal      |
| -40 ... 60°C  |
| -40 ... 85°C  |
| 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 TAZ DIODE 24VUC | 10   | 8449160000 |

End plate  
AP MCZ 1.5: 8389030000