



## EMP Surge Protector/Filter 48 V DC, 16 A USP-65001, USP Series

**Overvoltage protector / filter for 48V DC power applications up to 16 A**

**Excellent protection of two conductors of a power supply against HEMP / NEMP and lightning overvoltages and also against RF interferences**

**Multi-stage design with common-mode and differential mode protection and integrated filter**

**HEMP threat-level tested according to MIL-STD-188-125-1, short / intermediate pulse shapes**

**Coordinated lightning protection Type 2 and 3**

**Covered spring clamp terminal on protected side**



The Meteolabor USP-65001 surge protector / filter combines a multi-stage overvoltage protection for the two wires of a low voltage DC power supply with an integrated high quality filter for the attenuation of common and differential mode interferences.

The capability to handle high surge currents (up to 40 kA per conductor) ensures best protection against very fast transient overvoltages as they can be generated by NEMP / HEMP, lightning or switching.

A cable is integrated into the device on the unprotected side. On the protected side there is a spring clamp terminal block, which permits easy installation of interconnecting cable. A cable gland is integrated into the cover of the terminal block compartment.

### Applications

Surge protector/filter elements of the USP series are optimized to protect sensitive units and systems against the effects of overvoltages and fast transients.

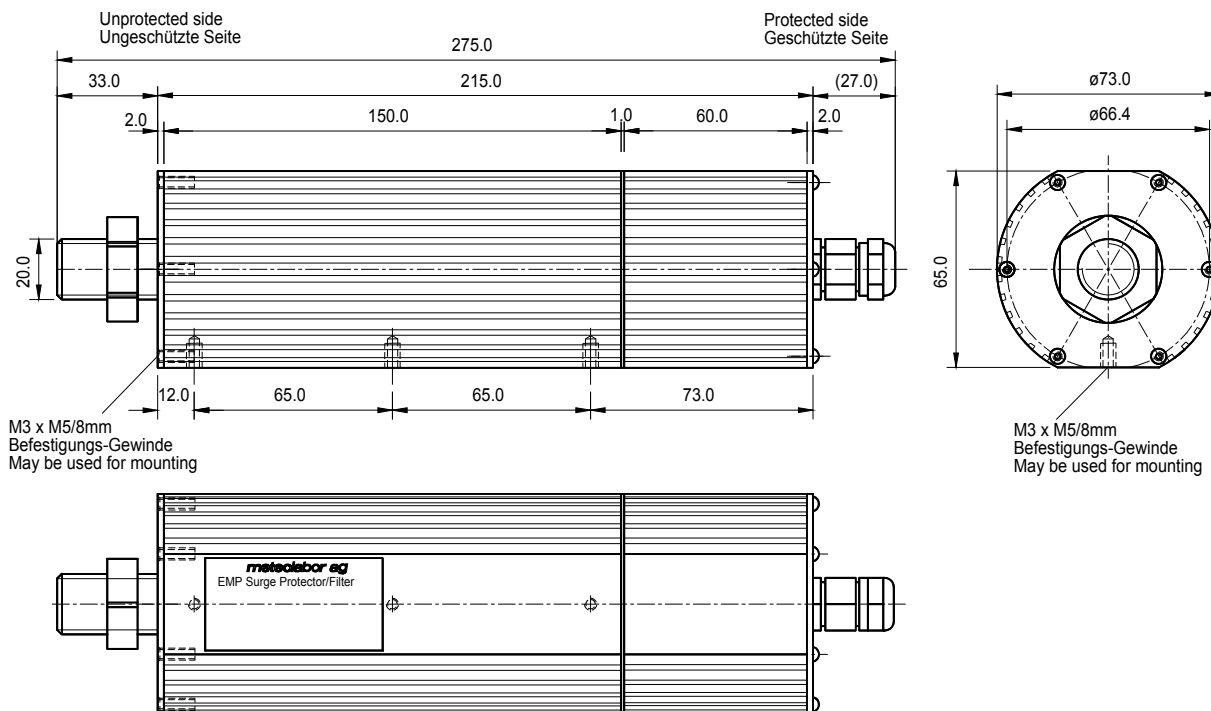
USP elements are specially suited to be used in sensitive and mission-critical defence systems (e.g. command and control systems, communication, IT installations), in security installations, telecommunication equipment etc. The USP-series has been successfully used in many projects, where EMP-tests according to RS105 or similar, were done.

The universal mechanical design of the USP series offers various ways of mounting the unit as a feed-through component in a Faraday cage. The low-leakage current design permits safe usage for both, fixed installation (building, underground shelter) and mobile containers or vehicles.

### Technical Data USP-65001

Nominal operating voltage $U_N$	48 V DC / 34 V AC	DC / 50/60 Hz
Max. operating voltage $U_c$	56 V DC / 40 V AC	DC / 50/60 Hz
Nominal current $I_N$	16 A	at $T_{amb}$ 45 °C
Surge current nominal $I_n$	25 kA	Multiple, +/- → GND, shape 8/20 $\mu$ s, $T_{amb}$ 40 °C
Max surge current $I_{max}$	40 kA	Single pulse, +/- → GND, shape 8/20 $\mu$ s, $T_{amb}$ 40 °C
Max. differential surge current	5 kA	Single pulse, + → -, shape 8/20 $\mu$ s, $T_{amb}$ 40 °C
Residual voltage	< 350 V	+,- → GND, Form 8/20 $\mu$ s, 25 kA
Residual voltage differential	< 200 V	+ → -, Form 8/20 $\mu$ s, 2 kA, IEC 61000-4-5
DC resistance	11 m $\Omega$ typically	Each line, $T_{amb}$ 25 °C
Connection unprotected side	cable, integrated	RADOX 125 grey, length 1,5 m, 2 x 2,5 mm <sup>2</sup> , shielded
Connection protected side	terminal ,spring clamp	max. 2,5 mm <sup>2</sup> , cover plate with integrated cable gland
Operating temperature range	- 40 °C / + 85 °C	
Dimensions	275 x 73 x 66 mm	major dimensions (details see drawing on rear side)
Weight	approx. 2.1 kg	

## Dimensions



## Installation Instructions

- The USP surge protector/filter has to be installed by electrically skilled personnel only.
- The electrical wiring of the unit has to be done according to the national standards and safety regulations.
- Always install Ground / Protective Earth first.
- From the USP surge protector/filter case a secure, low impedance connection to earth has to be made to ensure sufficient flow of discharge surge currents.
- Use a screwdriver for opening the spring clamp to insert or remove wire as shown on picture below.

## Safety Notes

- The unit does not contain any serviceable parts. Do not attempt to open the device, only the cover plate of the terminal area is allowed to be opened temporarily in order to install the cable.
- Before opening the cover plate of the terminal area make sure that power is switched off.
- Unauthorized manipulation or damaging of the labels can lead to malfunction or destruction of the USP surge protector/filter and will result in loss of warranty.
- In case of an overvoltage event with visible damages in the protected or unprotected area, the protector/filter unit has to be tested.

## Electrical Connection

### Unprotected side:

Cable  
Brown: Pos. / (+)  
Blue: Neg. / (-)  
Shield: - GND (Ground/Case)

### Protected side:

WAGO CageClamp®  
Grey: Pos. / (+)  
Blue: Neg. / (-)  
Yellow /Green: GND  
(Ground / Case)

### Protected Side, cover with cable gland removed



## Ordering Information

Part.-Nr.: **USP-65001**

Type-Nr.: USP-2P-48V-16A-CT001-AA