

EMP Surge Protector/Filter 230 V single phase, 16 A USP-35001, USP series

**Overvoltage protector/filter for single phase
230 VAC, 50/60 Hz power supply lines, up to 16 A**

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

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

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

Low leakage current (< 0.75 mA)



The Meteolabor USP-35001 surge protector/filter is specially designed for overvoltage protection of power supply lines plus additionally contains an integrated 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.

Because of their very low leakage current USP series protectors are also suited for mobile/portable applications.

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.

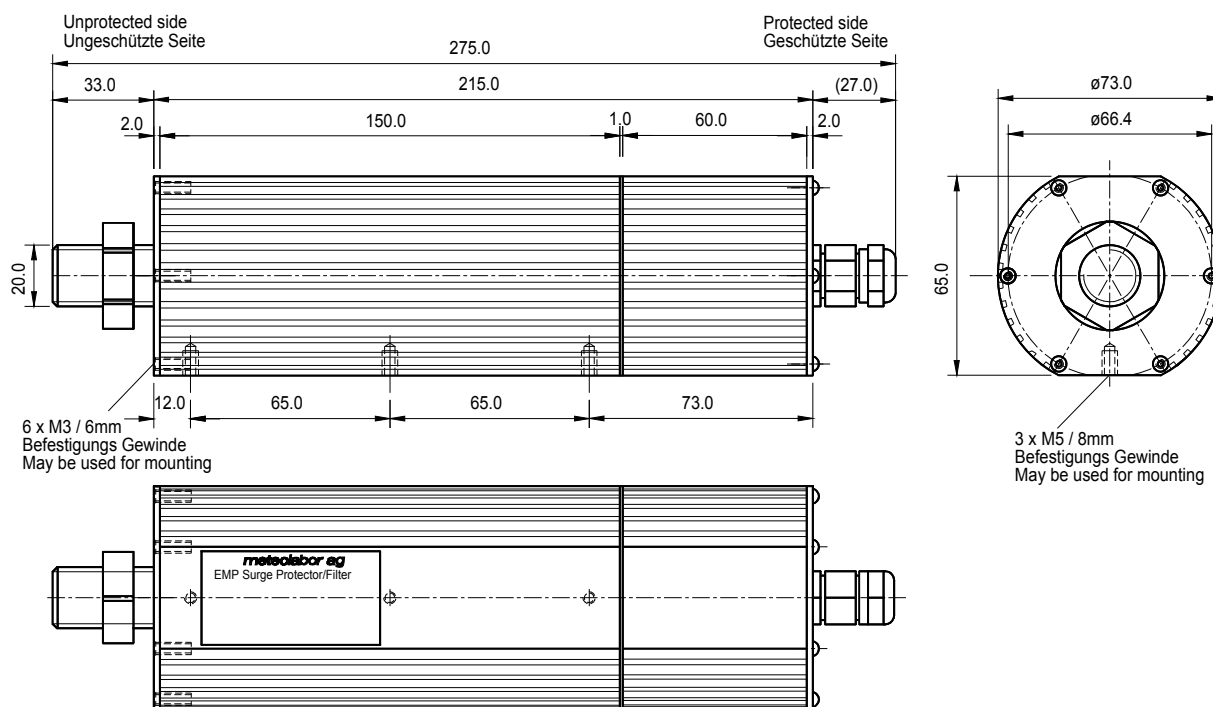
USP elements are specially suited to be used in sensitive and mission-critical defence systems (command and control systems, communication, IT installations aso.), in security installations, telecommunication equipment etc. The USP-series has been successfully used in many projects, where EMP-tests according 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. No matter if this is a fixed installation (building, underground shelter) or a mobile container or vehicle.

Technical Data USP-35001

Nominal operating voltage U_N	230 V AC	50/60 Hz
Max. operating voltage U_c	255 V AC	50/60 Hz
Nominal current I_N	16 A	RMS, at T_{amb} 45 °C
Surge current nominal I_n	25 kA	multiple, L/N → PE, shape 8/20 μ s, T_{amb} 40 °C
Max surge current I_{max}	40 kA	min one strike, L/N → PE, shape 8/20 μ s, T_{amb} 40 °C
Max. differential surge current	20 kA	min one strike, L/N → PE, shape 8/20 μ s, T_{amb} 40 °C
Residual voltage	< 2,1 kV	L → PE, shape 8/20 μ s, 25 kA
Residual voltage differential	< 1 kV	L → N, shape 8/20 μ s, 2 kA, IEC 61000-4-5
AC earth leakage current	< 0.75 mA	L → PE at U_N , 50 Hz (IEC 60950)
DC resistance	typ. 11 m Ω	per line, T_{amb} 25 °C
Connection unprotected side	cable, integrated	RADOX grey, 1.5 m, 3 x 1.5 mm ²
Connection protected side	terminal, spring clamp	max. 2.5 mm ² , 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	ca. 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 (WAGO CAGE CLAMP®) to insert or remove wire as shown on picture below.

Safety Notes

- Before opening the cover plate of the terminal area make sure that power is switched off.
- 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 cables. Close before switching on.
- After an overvoltage event causing visible damages in the protected or unprotected area, the protector/filter unit has to be tested or replaced.

Electrical Connection

Unprotected side:

Cable
 Brown: Line / (L)
 Blue: Neutral / (N)
 Yellow / Green: PE
 (Protective Earth / Ground / Case)

Protected side:

WAGO CageClamp®
 Grey: Line / (L)
 Blue: Neutral / (N)
 Yellow / Green: PE
 (Protective Earth / Ground / Case)

Protected Side, cover with cable gland removed



Ordering Information

Part-Nr.: **USP-35001**
 Type-Nr.: USP-LNPE-230V-16A-CT001-AA