

## EMP Surge Protector/Filter 4 lines (3L+N) 400/230 V, 400 A PLP-44401, PLP Series

**Excellent protection of 4 lines (3L+N) 400/230V (50/60Hz) for power supply applications in fixed installations up to 400 A per phase**

**Protection against HEMP / NEMP- and lightning overvoltages as well as against RF-interferences**

**Multi-stage protection/filter design providing very high transient energy absorption capability**

**Thermally monitored Surge Protection Devices with status signalization by potential free contact**

**Rigid stainless steel construction for direct installation to Faraday cage, approved for 3 bar blast shock according to BZS /BABS - Standard**



Meteolabor PLP-Series EMP Protector/Filter consist of Combinations of coarse and fine protection stages in combination with filtering components. This guarantees optimized protection of mission critical equipment against very fast transient overvoltages (e.g. NEMP / HEMP).

The PLP-Series is threat-level tested against EMP according to MIL-STD-188-125-1, short pulse and intermediate pulse.

Extremely high surge currents up to 100 kA (8/20µs) per line can be diverted.

For safety a capacitor discharge resistor is built in.

### Applications

Meteolabor EMP-Protector/Filters protect sensitive electronics such as Computers, telecommunication equipment, controls etc. from damages due to NEMP / HEMP or lightning effects.

Radio frequency interferences are filtered by high quality low-pass filters. The filter is designed for fixed installation with permanent grounding.

Applications range from fixed military facilities (e.g. C<sup>4</sup>I facilities) to civilian or industrial projects requiring high reliability.

### Technical Data PLP-44401

Nominal voltage $U_N$	3x400/230 V AC	50/60 Hz
Max. operating voltage $U_C$	3x460/255 V AC	50/60 Hz
Nominal current $I_N$	400 A	Effective at $T_{amb}$ 40 °C
Max. surge current $I_{Max}$	100 kA	Each L/N → PE, shape 8/20 µs, $T_{amb}$ 40°C, at least 1 pulse
Max. lightning impulse current $I_{Imp}$	20 kA	Each L/N → PE, shape 10/350 µs, $T_{amb}$ 40°C, at least 1 pulse
DC resistance	< 0.65 mΩ	Each L/N
Residual voltage HEMP-condition	< 50 V	L/N → PE, short pulse according MIL-STD-188-125-1
Residual voltage surge	< 1 kV	L/N → PE, pulse 4 kV / 2 kA according to IEC 61000-4-5
Attenuation	> 80 dB	200 kHz – 1 GHz, 50 Ω - System
50 Hz AC-leakage current	< 2 A	L → PE at $U_N$ , 50 Hz
Combination Surge Protection Device	SPD Type 1 + 2	Fault indication by opening of a potential-free contact
Potential free contact	Normally closed	Max. 250 V AC, 0.5 A, open if at least one SPD has disconnected
Case material	Steel V2A	Central cover made from aluminium
Dimensions	1360x570x129 mm	External dimensions single case only, details see drawing
Weight	Approx. 200 kg	Total (2 x 100 kg)
Approval Number BZS	LS S07-911	Shock (3 bar) according BABS / BZS

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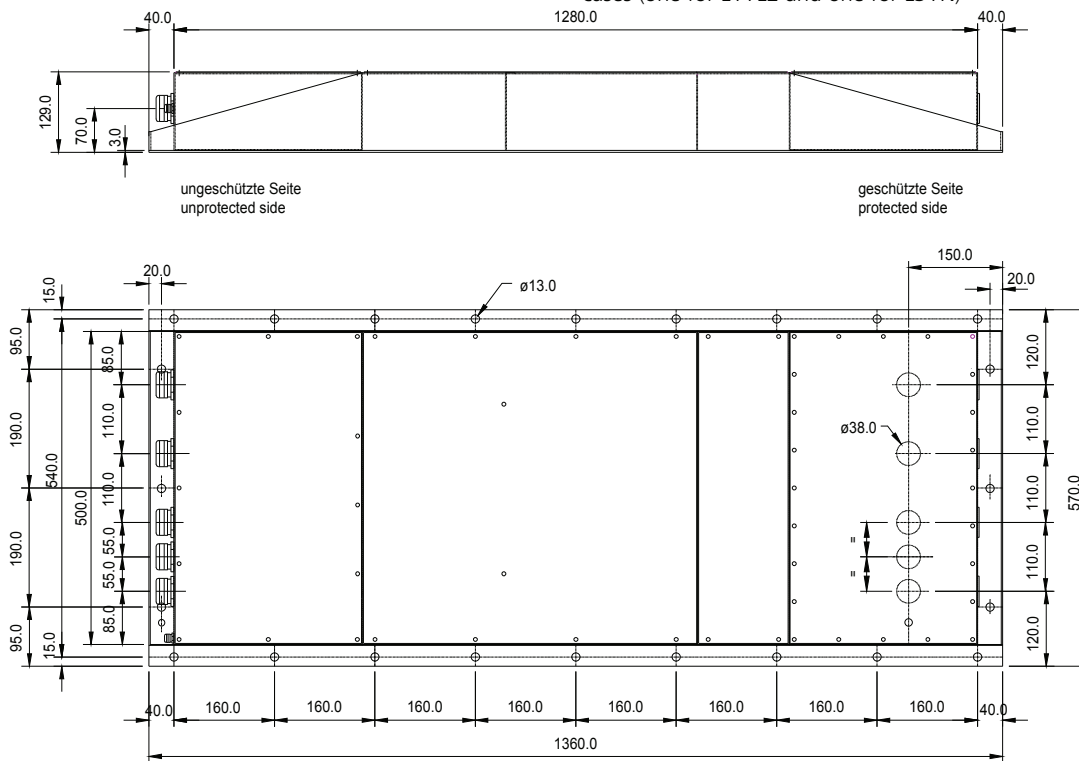
**PAGE 1 OF 2 PAGES**

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### Dimensions (Single case of totally two cases)

**Note:** The 400A EMP-Protection consists of 2 identical cases (one for L1+L2 and one for L3+N)



### Installation Notes

- The EMP protector/filter has to be installed by electrically skilled personnel.
- The electrical wiring has to be done according to local regulations.
- The max. values stated in this datasheet must not be exceeded under any circumstances.
- PLP-series EMP protector/filter shall be permanently (not pluggable) connected to the grid.
- Residual current circuit breakers shall be used on the protected side of the surge protector, where they are protected from transient overvoltages.
- The EMP protector/filter may be directly installed to a Faraday cage as feed-through device. Otherwise the cabling on the protected side must be shielded.
- Do not use spacers between filter and Faraday cage.
- The screws of the covers shall be slightly lubricated for best performance.

### Installation Instruction for mechanical shock protection

- The PLP-Series is approved for 3 bar shock protection according to Swiss Federal Office for Civil Protection (BABS, formerly BZS).
- Installation can be done by screws or direct welding to the Faraday cage. Usually installation using screws or bolts is more convenient.
- If screwed at least 6 pieces equally spaced screws M12 of class 8.8 including washer and spring washer shall be used. The torque shall be 83 Nm. Using more screws improves the electrical contact with the Faraday cage.
- Installation to a concrete wall requires at least 6 dowels approved by BABS. Each dowel shall have at least the capability to hold 4.3 kN.
- If welded at least 6 equally spaced fillet welds having a length of 50 mm shall be applied.

### Ordering Information

Part.-Nr: **PLP-44401**  
 Type-Nr.: USS-3x400/230V/400A/EMP-M

**Warning**  
 High AC earth leakage current! Case of filter (Protective earth) must be solidly and permanently earthed. Always install protective earth first.

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**PAGE 2 OF 2 PAGES**

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