

RF EMP Protector 806 – 2500 MHz, 500W, N – N Jack CSP-55101

Protection for 50 Ohm coaxial cables, based on High Pass Filter Technology

For RF-power up to 500 W

Low insertion loss operation from 806 to 2500 MHz

N-jack (female) for Input and Output

Feed-through installation into wall of Faraday cage or metallic housing

Very low residual energy protection against overvoltages produced by NEMP / HEMP, lightning or other transients

High surge current capability



The Meteolabor® CSP series RF EMP protectors are specially designed for the protection of coaxial lines. Surge currents up to 20 kA or single strikes up to 25 kA on the inner conductor can be handled.

A unique mechanical bulkhead design offers easy feed-through installation and compact fitting into Faraday cages, shielded rooms and mechanical enclosures. Single point of entry concepts can be simply realised. This allows clear separation of unprotected and protected side.

Various transient protection designs for broadband or limited frequency band operation are available. Generally limited frequency band elements provide lower residual energy in the case of transient overvoltages such as produced by atmospheric discharges (lightning, electrostatic discharge) or a High Altitude Electro-Magnetic Pulse (HEMP), sometimes also referred to as Nuclear Electro-Magnetic Pulse (NEMP) or simply EMP.

Applications

The Meteolabor® CSP-55101 RF EMP surge protector element ensures best protection of a broadband 50 Ohm coaxial line of telecommunication equipment etc. against transient overvoltages (e.g. NEMP / HEMP, lightning).

CSP-55101 is best suited for lines using N connectors, working with RF-power up to 500 W in the frequency range from 806 to 2500 MHz.

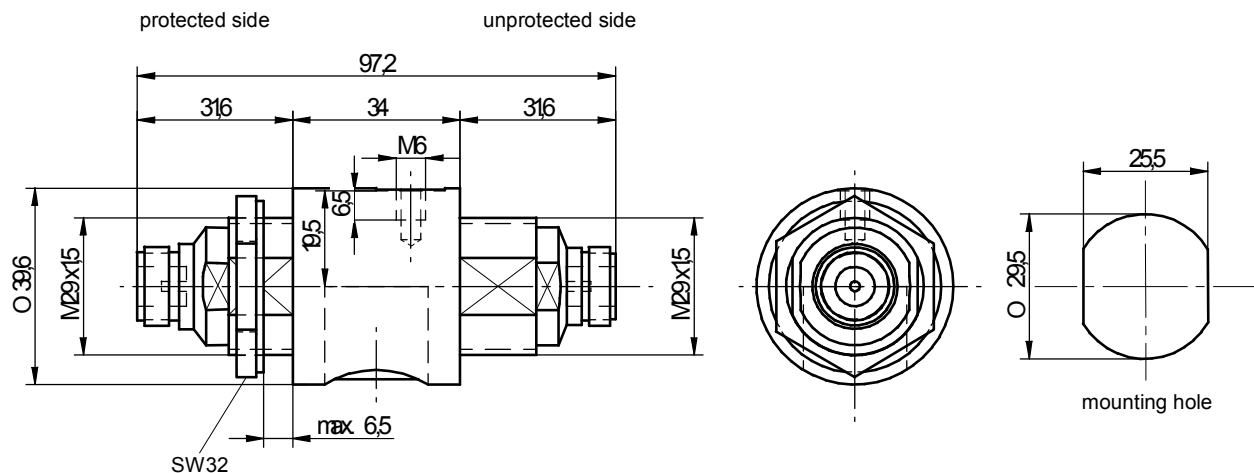
Applications range from mission critical equipment, such as fixed or mobile military installations (e.g. C4I facilities) to civilian or industrial projects, requiring high reliability and state-of-the-art protection.

CSP-55101 has been successfully used in many projects, where HEMP-testing according to RS-105 on threat-level has been conducted

Technical Data CSP-55101

Application	50 Ohm coaxial line	For RF applications 806 – 2500 MHz, max. 500 W
Max. operating power	500 W	Matched load
Max. surge current I_{Max}	25 kA	Inner conductor → ground, shape 8/20 μ s, single pulse
Nominal surge current I_N	20 kA	Inner conductor → ground, shape 8/20 μ s, 10 pulses at 30s intervals
Residual energy	0.03 μ J typically	4 kV / 2 kA test pulse, current shape 8/20 μ s, 50 Ohm load
Frequency range	806 to 2500 MHz	Insertion loss $\leq$ 0.1 dB
Return loss	$\geq$ 26 dB	806 to 2500 MHz
Connectors	N jack (female)	Unprotected and protected side
Operating temperature	-40°C to +85°C	
Ingress protection	IP 65	when coupled with conform mating connectors
Case material	Brass	Housing: nickel-free plating, center contacts: gold plating
Installation torque	Max. 25 Nm	Min. 20 Nm for good grounding contact
Dimensions	97.2 x $\varnothing$ 39.6 mm	Major dimensions, details see drawing
Weight	approx. 450 g	

Dimensions [mm]



Installation Notes

- The CSP series EMP protectors shall be installed by electrically skilled personnel.
- The electrical wiring must be done according to local regulations.
- The max. values stated in this datasheet must not be exceeded under any circumstances.
- Do not exceed max. installation torque of 35 Nm as this can result in permanent damage.
- CSP series EMP protectors may be directly installed into the wall of a Faraday cage as feed-through device. If not used in a Faraday cage good and very short grounding (min. 16mm²) is necessary to carry lightning currents of the outer conductor of the coaxial cable.
- Note that unprotected / protected side must be installed accordingly.

General Recommendations for Protection Installation

- In order to achieve the full performance of a protection circuit the application of good-practice EMC design techniques is necessary for the whole system to be protected.
- For EMP-protection usually a shield as an electromagnetic barrier to protect a certain volume is necessary. This shield avoids coupling of radiated disturbances inside the protected volume. In addition to shielding all penetrating wires must be protected from conducted transient interferences by an appropriate POE (point of entry) protection.
- Use tested, high quality POE (point of entry) protection elements for all wires entering an electromagnetic shield and install these as feed-through devices, e.g. the Meteolabor® USS-1, USS-2, USP, or PLP series.

Ordering Information / Part Number

CSP-55101 RF EMP surge protector N(f)



Caution

For proper function unprotected / protected side must be installed correctly.

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