

## RF EMP Protector 2 – 6 GHz, 300W, N – N Jack CSP-73101

**Protection for 50 Ohm coaxial cables, based on quarter wave stub technology**

**For RF-power up to 300 W**

**Low insertion loss operation from 2 to 6 GHz**

**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. High surge currents 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-73101 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-73101 is best suited for lines using N connectors, working with RF-power up to 300 W in the frequency range from 2000 to 6000 MHz.

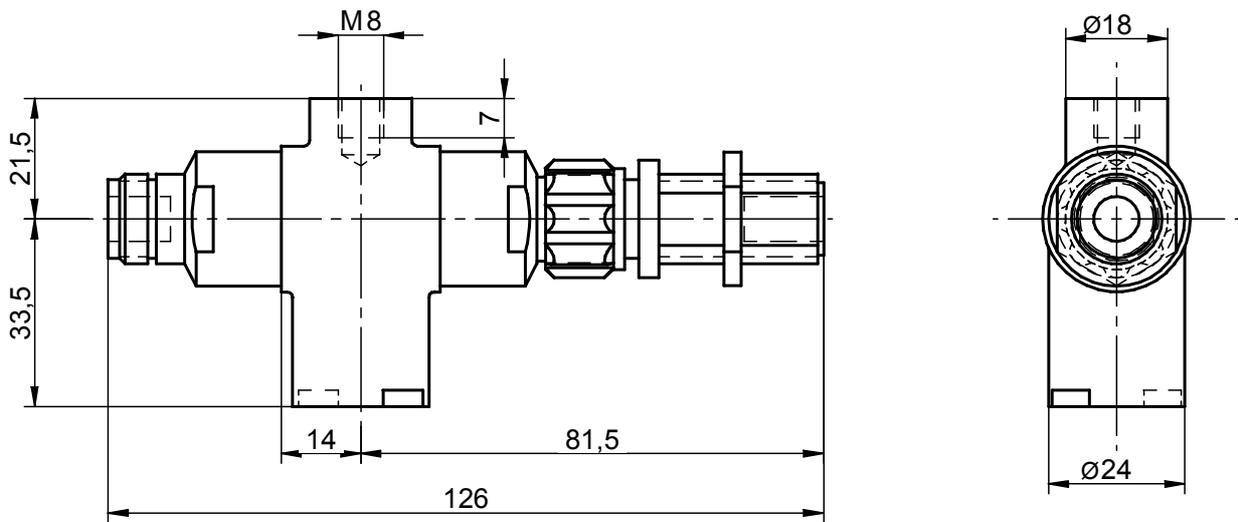
Applications range from mission critical equipment, such as fixed or mobile military installations (e.g. C4I facilities) to civilian or industrial projects, requiring high reliability and state-of-the-art protection.

CSP-73101 has been successfully used in many projects, where HEMP-testing according to RS-105 on threat-level has been conducted

### Technical Data CSP-73101

Application	50 Ohm coaxial line	For RF applications 2 – 6 GHz, max. 300 W
Max. operating power	300 W	Matched load
Max. surge current $I_{Max}$	50 kA	Inner conductor → ground, shape 8/20 $\mu$ s, single pulse
Nominal surge current $I_N$	25 kA	Inner conductor → ground, shape 8/20 $\mu$ s, 10 pulses at 30s intervals
Residual energy	0.4 $\mu$ J typically	4 kV / 2 kA test pulse, current shape 8/20 $\mu$ s, 50 Ohm load
Frequency range	2000 to 6000 MHz	Insertion loss $\leq$ 0.2 dB
Return loss	$\geq$ 20 dB	2000 to 6000 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	126 x 55 x $\varnothing$ 24 mm	Major dimensions, details see drawing
Weight	approx. 350 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. 16mm<sup>2</sup>) is necessary to carry lightning currents of the outer conductor of the coaxial cable.
- CSP-73101 is electrically symmetric and can be placed inside or outside of the wall.

## 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-73101 RF EMP surge protector N(f)



### Caution

This protector blocks low frequencies and therefore any DC voltage will be short-circuited.