

BRUMIL 220– EMP Protector RJ45-1000 Mbit/s

The efficient devices to protect equipment against the effects of EMP (Electromagnetic Pulses)

- Combined Lightning and HEMP and IEMI-Protection for all four wire pairs of an Ethernet cable, not for PoE
- Protects Ethernet connection for 10 /100/1000 Mbit/s
- Combination of non-linear high surge current components and linear filter components.
- Galvanic insulation between protected and unprotected side results in low protection levels.
- Metallic case for installation directly into shielding wall (Single Point Entry) as feed-through filter
- RJ45 jackets on both ends make installation easy
- Designed to protect against short-time and intermediate-time threats as defined in MIL-STD-188-125
- High quality components make this a very reliable and long-life product

Description:

- The BRUMIL 220 Surge Protection Device is a combined surge protection device which protects reliably against various transient overvoltages (such as lightning and HEMP) and simultaneously filters high frequency disturbances.
- Transient overvoltages in wiring can be generated by various disturbances: switching transients, lightning surges, electrostatic discharge (ESD) or HEMP (High-altitude Electromagnetic Pulse). HEMP is created by a nuclear explosion outside of the atmosphere. Often the general term EMP (Electromagnetic Pulse) is used, or NEMP (Nuclear Electromagnetic Pulse), or LEMP (for Lightning EMP). HPEM (high power electromagnetic) considers all kinds of high power transients, including IEMI-disturbances (Intentional Electro Magnetic Interference).
- The BRUMIL 220 Surge Protection Device consists of several well-coordinated protection stages, which reliably and effectively protect sensitive electronics against all kinds of HPEM disturbances.
- The BRUMIL 220 EMP Protector RJ45-1000 is threat-level tested against EMP according to **MIL-STD-188-125**, short pulse and intermediate pulse



Applications:

- The BRUMIL 220 is designed to safely protect Ethernet equipment and cabling with data rates of 10/100/1000 Mbit/s against transient over voltages caused by lightning, HEMP or IEMI. This version cannot be used in applications with PoE or PoE+ (Power over Ethernet). A special protection design results in very low residual voltages, which are low enough to protect any commercial of the shelf equipment from damage.
- HEMP-Filters are high-frequency components and shall be installed accordingly for best performance. An installation as feed-through filter directly into a shielding wall results in best protection performance. Over voltages and interference currents will flow to the shielding wall and electronic equipment in the shielded room is well protected.
- Please make sure, that all wires entering a protected volume have to be protected accordingly. Doing so reliably protects even commercial of the shelf (COTS) electronics of critical infrastructure.

Dimensions:

- Total length: 118mm (without patch cable)
- Diameter: M32x1.5mm thread

BRUMIL 220 – EMP Protector RJ45-1000		
Max. operating voltage peak signal	±2V	Voltage between wire pairs 1-2, 3-6, wire pair 4-5 and 7-8
Data rate	10/100/1000 Mbit/s	Ethernet, Fast Ethernet Gigabit-Ethernet as per IEEE 802.3
Max. surge current I _{Max}	10 kA *)	Each wire to ground/case, shape 8/20 µs, at least 1 pulse
Max. lightning impulse current I _{imp}	2 kA *)	Each wire to ground/case, shape 10/350 µs, at least 1 pulse
DC resistance input – output	Open circuit	Input / output isolated > 500VDC
Residual voltage common mode	< 20 V	Pair to ground/case, pulse 4kV/2kA according to IEC61000-4-5
Residual voltage differential mode	< 20 V	Between pair, pulse 4kV /2kA according to IEC61000-4-5
Connection terminals	RJ45 shielded	Use of shielded cables recommended
Case material	Metal	Stainless steel, EMC-Locknuts brass nickel plated
Max. allowed installation torque	20Nm	Not to be exceeded under all circumstances
Dimensions	Ø 32x118mm	2 nuts M32x1.5 for feed-through installation
Weight	Approx. 290g	Incl. 2 nuts

*) Surge current > 2kA (8/20 µs) per wire may damage RJ45 contacts