



- FULL MODE**
Bonding +
Equipment
Protection
- SIGNAL/
TELECOM**
TEST CAT
D + C + B
- MAINS
TEST
TYPE
2 + 3**
- e**
ENHANCED
Low let-through
voltage
- LPZ**
Mains 1→3
Data 0_B→3

Combined Type 2 and 3 tested protector (to BS EN 61643-11) with telecom or network protection options. Suitable for use on 220/230/240 volts supplies. Available with British style (three square pin) plugs and sockets with double-pole action. For use at boundaries LPZ 1 through to LPZ 3 to protect sensitive electronic equipment.

Features and benefits

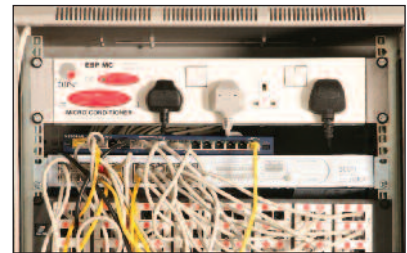
- ✓ Low let-through voltage between all sets of conductors
- ✓ Three way visual indication of protection status
- ✓ Protects against radio frequency interference
- ✓ TN and Cat-5e versions can conveniently protect both mains and telecom/data lines in one unit
- ✓ Rugged, heavy duty construction
- ✓ Bracket kit ESP MC/19BK available for rear or 19" rack mounting
- ✓ Maintenance free

Application

ESP MC series can be used to protect all sorts of plug-in equipment, including hospital laboratory equipment, modems, fax machines and PCs.

Installation

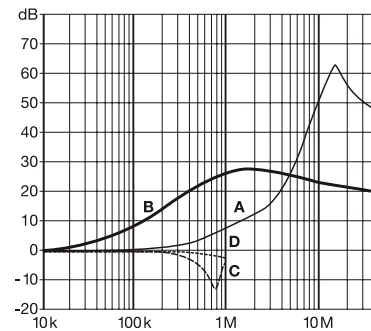
Simply plug the ESP MC series into the mains and your equipment into the ESP MC.



ESP MC installed within a network rack, protecting the externally-fed network switch

RFI performance

Per CISPR 17:
A = 50Ω/50Ω sym, B = 50Ω/50Ω asym, C = 0.1Ω/100Ω sym, D = 100Ω/0.1Ω sym



Accessories

ESP MC/19BK bracket kit can be used for rear mounting, or reversed for use in 19" cabinets. All fixings supplied.

For wire-in applications up to 16 amps, the 16A/BX Series may be more suitable. For all other supplies, consider the M1 Series.

Electrical specification – mains

	IMPROVED ESP MC	NEW ESP MC/TN/RJ11-4/6	NEW ESP MC/Cat-5e
Nominal voltage - Phase-Neutral U_0 (RMS)		220/230/240V	
Maximum voltage - Phase-Neutral U_c (RMS)		280V	
Frequency range		47-63Hz	
Current rating (supply)		13A	
Leakage current (to earth)		<0.5mA	

Electrical specification – telecom/data

	–	296V	5V
Nominal voltage		296V	5V ²
Maximum working voltage U_c ¹		300mA	300mA
Current rating (signal)		4.4Ω	1Ω
In-line resistance (per line ±10%)		20MHz	–
Bandwidth (–3dB 50Ω system)		–	100Mbps
Maximum data rate			

¹ Maximum working voltage (DC or AC peak) of telecom/data protection measured at <10μA leakage for ESP MC/TN/RJ11-4/6 and 1mA for ESP MC/Cat-5e.

² Maximum working voltage is 5V for data pairs 1/2 & 3/6.

Transient specification – mains

	ESP MC	ESP MC/TN/RJ11-4/6	ESP MC/Cat-5e
Type 2 (BS EN/EN), Class II (IEC)			
Nominal discharge current 8/20μs (per mode) I_n		5kA	
Let-through voltage U_p at I_n ¹		850V	
Maximum discharge current I_{max} (per mode) ²		10kA	
Type 3 (BS EN/EN), Class III (IEC)			
Let-through voltage at U_{oc} of 6kV 1.2/50 and I_{sc} of 3kA 8/20 (per mode) ³		680V	
Let-through voltage at U_{oc} of 6kV 1.2/50 and I_{sc} of 500A 8/20 (per mode) ⁴		555V	

¹ The maximum transient voltage let-through of the protector throughout the test (±5%), phase to neutral, phase to earth and neutral to earth.

² The electrical system, external to the unit, may constrain the actual current rating achieved in a particular installation.

³ Combination wave test within BS 6651:1999 App. C, Cats C-Low & B-High, IEEE C62.41-2002 Location Cats C1 & B3, SS CP 33:1996 App. F, AS 1768-1991 App. B, Cat B, UL1449 mains wire-in.

⁴ To BS 6651:1999 Appendix C, Category A-High, UL1449 mains plug-in.

Transient specification – telecom/data

	–	390V/390V	120V/700V ³
Let-through voltage (all conductors)¹ U_p			
C2 test 4kV 1.2/50μs, 2kA 8/20μs to BS EN/EN/IEC 61643-21 – line to line / line to earth		395V/395V	74V/600V ³
C1 test 1kV, 1.2/50μs, 0.5kA 8/20μs to BS EN/EN/IEC 61643-21 – line to line / line to earth		295V/295V	21V/550V ³
B2 test 4kV 10/700μs to BS EN/EN/IEC 61643-21 – line to line / line to earth		300V/300V	25V/600V ³
5kV, 10/700μs ² – line to line / line to earth			
Maximum surge current⁴			
D1 test 10/350μs to BS EN/EN/IEC 61643-21		1kA	1kA
8/20μs to ITU (formerly CCITT), BS 6651:1999 Appendix C		10kA	10kA

¹ The maximum transient voltage let-through the protector throughout the test (±10%), line to line & line to earth. Response time <10ns.

² Test to BS 6651:1999 Appendix C, Cat C-High, IEC 61000-4-5:1995, ITU-T (formerly CCITT) K.20, K.21 and K.45, Telcordia GR-1089-CORE, Issue 2:2002, ANSI TIA/EIA/IS-968-A:2002 (formerly FCC Part 68).

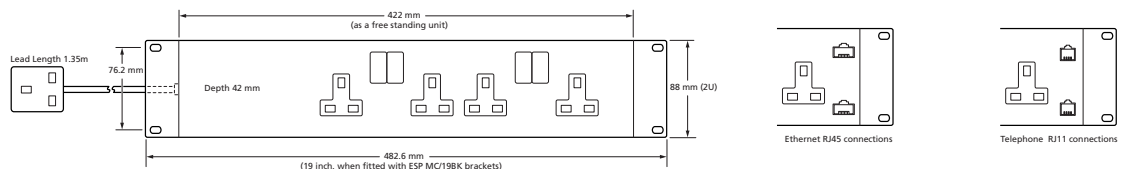
³ The interfaces used in Cat-5/5e systems incorporate an isolation transformer that inherently provides an inbuilt immunity to transients between line and earth of 1,500 volts or more.

⁴ The installation and connectors external to the protector may limit the capability of the protector.

Mechanical specification

	ESP MC	ESP MC/TN/RJ11-4/6	ESP MC/Cat-5e
Temperature range		–25°C to +70°C	
Connection type		Via British style three square pin plug and socket to BS 1363	
Connection type – telecom/data		RJ11	RJ45
Earth connection		Via plug and socket	
Case material		Steel	
Weight – unit	1.70kg	1.75kg	1.75kg
– packaged	1.75kg	1.8kg	1.8kg

Dimensions



TSC-0808