

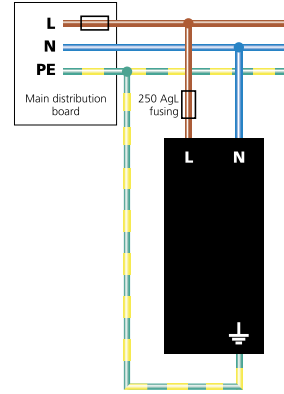
ESP 240/XXX Series



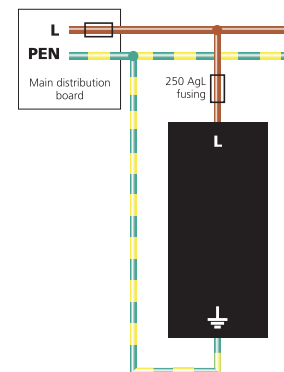
- LPZ**
 $0_A \rightarrow 2$
- COMMON MODE**
Equipotential Bonding
- MAINS TEST TYPE**
1 + 2
- e**
ENHANCED
Low let-through voltage
- STATUS INDICATION + VOLT-FREE CONTACT**

Installation

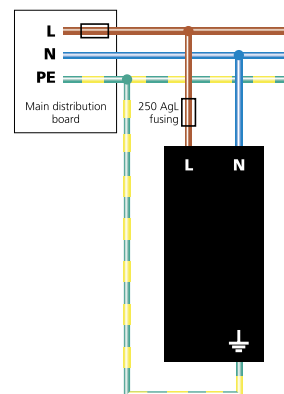
The diagrams below illustrate how to wire the appropriate ESP protector according to your chosen electrical system



TNS earthing system



TNC earthing system



TT earthing system

Combined Type 1 and 2 tested protector (to BS EN 61643-11) for use on the main distribution board, particularly where a structural Lightning Protection System (LPS) is employed, for equipotential bonding. For use at boundaries up to LPZ 0_A to protect against flashover (typically the main distribution board location) through to LPZ 2 to protect electrical equipment from damage.

Features and benefits

- ✓ Enhanced protection (to BS EN 62305) offering low let-through voltage further minimizing the risk of flashover creating dangerous sparking or electric shock
- ✓ Repeated protection in lightning intense environments
- ✓ The varistor based design eliminates the high follow current (I_f) associated with spark gap based surge protection
- ✓ Compact, space saving design
- ✓ Indicator shows when the protector requires replacement
- ✓ Remote signal contact can indicate the protectors' status through interfacing with a building management system

Application

- ✓ Use on single phase mains supplies and power distribution systems for protection against partial direct or indirect lightning strikes
- ✓ ESP 240/I/XXX versions for use with Class I or II Lightning Protection Systems (LPS)
- ✓ ESP 240/III/XXX versions for use with Class III or IV LPS; or exposed overhead single phase power lines where no LPS is fitted
- ✓ ESP 240/X/TNS versions also cover TNC-S earthing systems

Installation

Protector to be installed in the main distribution panel with connecting leads of minimal length. The protector should be fused and is suitable for attachment to a 35mm top hat DIN rail.

IMPORTANT

The primary purpose of Lightning current or Equipotential bonding mains Type 1 Surge Protective Devices (SPDs) is to prevent dangerous sparking caused by flashover to protect against the loss of human life. In order to protect electronic equipment and ensure the continual operation of systems, transient overvoltage mains Type 2 and 3 SPDs such as the ESP 240 M1 are further required, typically installed at downstream sub-distribution boards feeding sensitive equipment. BS EN 62305 refers to the correct application of mains Type 1, 2 and 3 SPDs as a coordinated set.

For further information, please refer to "A Guide to BS EN 62305:2006 Protection Against Lightning" available from Furse.

Accessories

Weatherproof enclosure

WBX D4

Electrical specification	NEW	NEW	NEW	NEW	NEW	NEW
	ESP 240/I/TNS	ESP 240/III/TNS	ESP 240/I/TNC	ESP 240/III/TNC	ESP 240/I/TT	ESP 240/III/TT
Nominal voltage - Phase-Neutral U_0 (RMS)	240V					
Maximum voltage - Phase-Neutral U_c (RMS/DC)	320V/420V					
Temporary Overvoltage TOV U_T^1	335V					
Short circuit withstand capability	25kA/50Hz					
Max. back-up fuse (see installation instructions)	250A					
Leakage current (to earth)	<2.5mA	<2.5mA	<2.5mA	<2.5mA	-	-
Volt free contact - current rating - nominal voltage (RMS)	0.5A 250V					

¹ Temporary Overvoltage rating is for a maximum duration of 5 seconds tested to BS EN/EN/IEC 61643.

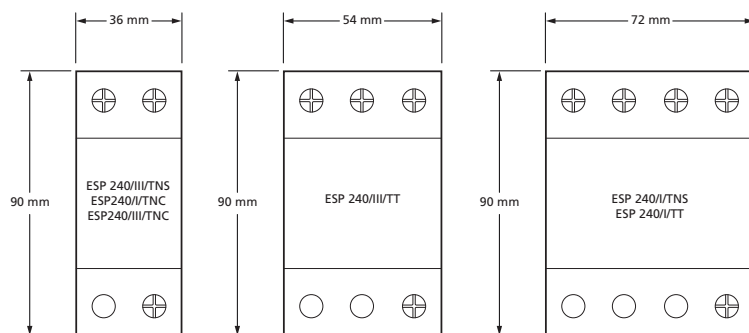
Transient specification						
	ESP 240/I/TNS	ESP 240/III/TNS	ESP 240/I/TNC	ESP 240/III/TNC	ESP 240/I/TT	ESP 240/III/TT
Type 1 (BS EN/EN), Class I (IEC)						
Nominal discharge current 8/20 μ s (per mode) I_n	50kA	25kA	50kA	25kA	50kA/100kA (N-E)	25kA/50kA (N-E)
Let-through voltage U_p at I_n^1	<1.5kV	<1.3kV	<1.5kV	<1.3kV	<1.5kV	<1.3kV
Impulse discharge current 10/350 μ s I_{imp} (per mode) ²	50kA	25kA	50kA	25kA	50kA/100kA (N-E)	25kA/50kA (N-E)
Let-through voltage U_p at I_{imp}^1	<1.2kV	<1.2kV	<1.2kV	<1.2kV	<1.2kV	<1.2kV
Let-through voltage U_p at 1.2/50 μ s (N-E, TT system)	-	-	-	-	<1.2kV	<1.2kV
Type 2 (BS EN/EN), Class II (IEC)						
Nominal discharge current 8/20 μ s (per mode) I_n	50kA	25kA	50kA	25kA	50kA/100kA (N-E)	25kA/50kA (N-E)
Let-through voltage U_p at I_n^1	<1.5kV	<1.3kV	<1.5kV	<1.3kV	<1.5kV	<1.3kV
Maximum discharge current I_{max} (per mode) ²	100kA	100kA	100kA	100kA	100kA/160kA (N-E)	100kA/100kA (N-E)

¹ The maximum transient voltage let-through of the protector throughout the test ($\pm 5\%$), 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.

Mechanical specification						
	ESP 240/I/TNS	ESP 240/III/TNS	ESP 240/I/TNC	ESP 240/III/TNC	ESP 240/I/TT	ESP 240/III/TT
Temperature range	-40 to +80°C					
Connection type	Screw Terminal					
Conductor size (stranded)	25mm ²					
Earth connection	Screw Terminal					
Volt free contact	Connect via screw terminal with conductor up to 1.5mm ² (stranded)					
Degree of protection (IEC 60529)	IP20					
Case material	Thermoplastic, UL 94 V-0					
Mounting	Indoor, 35mm top hat DIN rail					
Weight – unit	0.84kg	0.44kg	0.44kg	0.29kg	0.68kg	0.44kg
– packaged	0.94kg	0.54kg	0.54kg	0.39kg	0.78kg	0.54kg
Dimensions to DIN 43880 - HxDxW ¹	90mm x 68mm x 72mm (4TE)	90mm x 68mm x 36mm (2TE)	90mm x 68mm x 36mm (2TE)	90mm x 68mm x 36mm (2TE)	90mm x 68mm x 72mm (4TE)	90mm x 68mm x 54mm (3TE)

¹ The remote signal contact (removable) adds 10mm to height.



Standard depth 68 mm