- **Available for 90-150 volts and 200-280 volts supplies.**
- **Suitable for use on supplies of up to 5 or 16 amps.**
- **Protectors with /BX suffix come ready-boxed, to IP66, for use in dirty or damp environments.**

Application

Use these protectors on low current mains power supplies, eg CCTV cameras, alarm panels and telemetry equipment.

Ready boxed protector (here an ESP 240-5A/BX) installed on the fused connection (spur) to an alarm panel.

Features and benefits

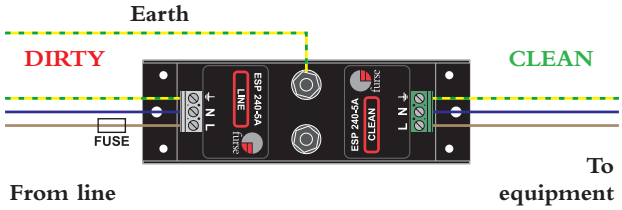
- ✔ Low let-through voltage between all sets of conductors (phase to neutral, phase to earth and neutral to earth).
- ✔ Provides repeated protection in lightning intense environments, with 10 years predicted lifetime.
- ✔ Compact size for easy incorporation in the protected system.
- ✔ Removable DIN rail foot for simple clip-on mounting to top hat DIN rails (unboxed versions).

- ✔ Colour coded terminals give a quick and easy installation check – grey for the dirty (line) end and green for the clean end.
- ✔ Available ready-boxed to IP66 for use in dirty or damp environments (protectors with /BX suffix).
- ✔ Robust housing.
- ✔ Fixing holes ready for flat mounting.
- ✔ Substantial earth stud.
- ✔ Maintenance free.

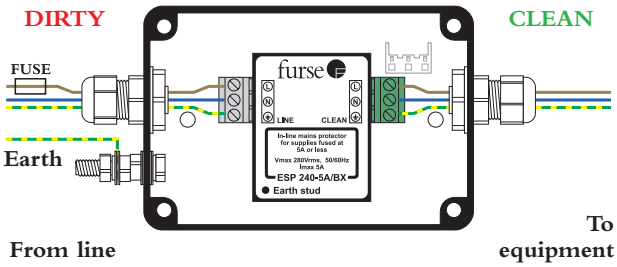
If your supply is fused at more than 16 amps the ESP 120 M1 or ESP 240 M1 are suitable protectors.

Installation

Connect in-line with the power supply usually either within the equipment panel (or for CCTV cameras, in an enclosure close by), or on the fused connection that supplies equipment.



Connect in-line on supplies fused up to 5A (ESP 120-5A or ESP 240-5A) or 16A (ESP 120-16A or ESP 240-16A). Note how the protector can also be earthed from its earth stud.



Connect in-line on supplies fused up to 5A (ESP 120-5A/BX or ESP 240-5A/BX) or 16A (ESP 120-16A/BX or ESP 240-16A/BX). Note how the protector can also be earthed from its earth stud.

To protect equipment inside a building from transients entering on an outgoing feed (eg to CCTV cameras or to site lighting) the protector should be installed as close to where the cable leaves the building as possible. Unless ready-boxed, protectors should be installed either within an existing cabinet/cubicle or in a separate enclosure.

To protect an outside CCTV camera, protection on the power supply (here an ESP 240-5A) is installed alongside video and telemetry line protection, on a CME 4 (mounting and earthing kit), inside a WBX 4/GS enclosure.

Suitable accessories

If several ESP 120-5A or 16A or ESP 240-5A or 16A protectors are to be installed together, or if one is in use alongside Lightning Barriers for video or signal lines, these can be simultaneously mounted and earthed on a CME kit and housed in a suitable WBX enclosure.

TSC-09-03

Electrical specification

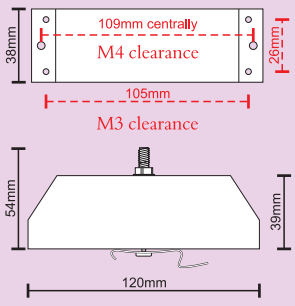
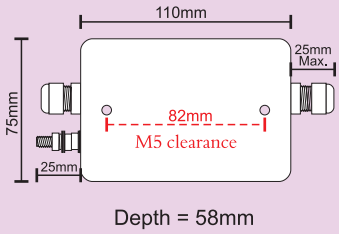
	ESP 120-5A ESP 120-5A/BX	ESP 120-16A ESP 120-16A/BX	ESP 240-5A ESP 240-5A/BX	ESP 240-16A ESP 240-16A/BX
Nominal voltage (RMS)	120V	120V	240V	240V
Working voltage (RMS)	90-150V	90-150V	200-280V	200-280V
Frequency range	40-60Hz	40-60Hz	40-60Hz	40-60Hz
Current rating (supply)	5A or less	16A or less	5A or less	16A or less
Leakage current (to earth)	<0.5mA	<0.5mA	<0.5mA	<0.5mA

Transient specification

	120 volt protectors	240 volt protectors
Let-through voltage (all conductors)[1]		
6kV 1.2/50μs open circuit voltage, 3kA 8/20μs short circuit current to: *BS 6651:1999 Appendix C, Categories C-Low and B-High* *IEEE C62.41-1991*[2] *Location Categories C1 and B3* *SS CP 33:1996 Appendix F* *AS 1768-1991 Appendix B, Category B* *UL1449 mains wire-in*	390V	590V
4kV 1.2/50μs open circuit voltage, 2kA 8/20μs short circuit current to: *IEC 1000-4-5:1995*	370V	560V
2kV 1.2/50μs open circuit voltage, 1kA 8/20μs short circuit current	340V	520V
2.5kA 8/20μs to *BS EN 60099-1:1994*	380V	580V
6kV 1.2/50μs open circuit voltage, 500A short circuit current to: *BS 6651:1999 Appendix C, Category A-High* *UL1449 mains plug-in*	320V	480V
6kV 0.5μs 100kHz ring wave, 500A to: *IEEE C62.41-1991*[2] *Location Category B3* *AS 1768-1991 Appendix B, Category B*	320V	480V
6kV 0.5μs 100kHz ring wave, 200A to: *IEEE C62.41-1991*[2] *Location Category A3* *AS 1768-1991 Appendix B, Category A*	290V	460V
Maximum surge current[3]	10kA	10kA

1 The maximum transient voltage let-through the protector throughout the test (±5%), phase to neutral, phase to earth and neutral to earth.
2 Formerly IEEE 587 and ANSI C62.41.
3 Tested with 8/20μs waveshape to BS 6651:1999 Appendix C.

Mechanical specification

	ESP 120-5A, ESP 120-16A ESP 240-5A, ESP 240-16A	ESP 120-5A/BX, ESP 120-16A/BX ESP 240-5A/BX, ESP 240-16A/BX
Temperature range	-40°C to +70°C	-40°C to +70°C
Connection type	Screw terminal	Screw terminal
Conductor size (solid)	4mm²	4mm²
Earth connection	Via earth terminal or M6 stud	Via earth terminal or M6 stud
Cable glands	Not applicable	**-5A/BX** 4.8 - 8mm cable (PG9) **-16A/BX** 8 - 12mm cable (PG13.5)
Outer enclosure	Not applicable	PVC, rated to IP66
Weight - unit	0.23kg	0.26kg
- packaged	0.25kg	0.31kg
Dimensions		

TSC-09-03