



- ◆ Based on the ESP D Series and ESP TN, these protectors are ready-boxed to IP66 for use in damp or dirty environments.
- ◆ Suitable for most twisted pair signalling applications.
- ◆ Available for working voltages of up to 6, 15, 30 and 50 volts and telephone lines with a maximum working or ringing voltage of 190 volts.
- ◆ For two wire lines, use /BX versions.
- ◆ For four wire lines, use /2BX versions.
- ◆ Supplied as standard with screw terminals - for IDC terminals order part code plus /I (eg ESP TN/BX/I).

### Application

Use these ready-boxed protectors on twisted pair lines in dirty or damp environments.



Security alarm panel with ESP TN/BX (bottom) providing protection from transient overvoltages on the dial-up telephone line. Note how the ESP TN/BX is earthed via a bond to the ESP 240-16A/BX (top) installed on the mains power supply to the panel.

### Features and benefits

- ✓ Low let-through voltage between all lines.
- ✓ Provides repeated protection in lightning intense environments.
- ✓ Low in-line resistance minimises unnecessary reductions in signal strength.
- ✓ Ready-boxed to IP66.
- ✓ Available with screw terminals or with IDC terminals (by using /I suffix to part number).



To obtain protectors with IDC terminals, as above, simply add /I to the part number (eg ESP TN/BX/I).

- ✓ Supplied ready for flat mounting.
- ✓ Colour coded terminals for quick and easy installation check - grey for the dirty (line) end and green for clean.

For installation in the equipment panel, protectors which are not boxed may be more suitable (D Series). If your system requires a protector with a very low resistance, higher current or higher bandwidth, use the E or H Series. Unboxed protectors for 3-wire RTD systems are available - as are plug-in protectors for telephone lines (TN Series).

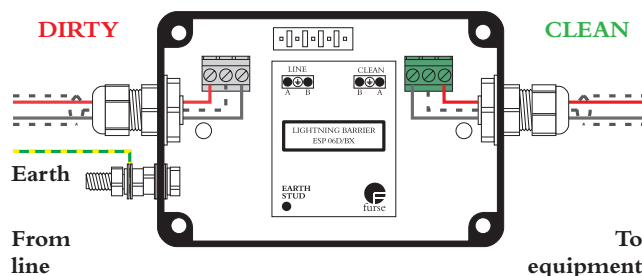
- ✓ Screen terminal enables easy connection of cable screen to earth.
- ✓ Substantial earth stud to enable effective earthing.
- ✓ UK OfTel Approval NS/G/1235/W/100025.



ESP 30D/2BX with lid removed to show internal connections. Note the colour coded, grey and green, terminals.

### Installation

Connect in series with the data communication, signal or telephone line either near where it enters/leaves the building or close to the equipment being protected. Either way, it must be very close to the systems earth star point.



Install in series (in line).

Electrical specification

	ESP 06D/BX ESP 06D/2BX	ESP 15D/BX ESP 15D/2BX	ESP 30D/BX ESP 30D/2BX	ESP 50D/BX ESP 50D/2BX	ESP TN/BX ESP TN/2BX
<b>Nominal voltage<sup>1</sup></b>	6V	15V	30V	50V	*
<b>Max working voltage<sup>2</sup></b>	7.79V	19V	37.1V	58V	190V
<b>Current rating</b> (signal)	300mA	300mA	300mA	300mA	300mA
<b>In-line resistance</b> (per line ±10%)	9.4Ω	9.4Ω	9.4Ω	9.4Ω	4.4Ω
<b>Bandwidth</b> (-3dB 50W system)	800kHz	2.5MHz	4MHz	6MHz	>50MHz

<sup>1</sup> Nominal voltage (DC or AC peak) measured at <5μA (ESP 15D/BX, ESP 15D/2BX, ESP 30D/BX, ESP 30D/2BX, ESP 50D/BX, ESP 50D/2BX) and <200μA (ESP 06D/BX & ESP 06D/2BX).

<sup>2</sup> Maximum working voltage (DC or AC peak) measured at <1mA leakage (ESP 15D/BX, ESP 15D/2BX, ESP 30D/BX, ESP 30D/2BX, ESP 50D/BX, ESP 50D/2BX), <10mA (ESP 06D/BX, ESP 06D/2BX) and <95μA (ESP TN/BX, ESP TN/2BX).

\* Post transient recovery voltage >80V.

Transient specification

	ESP 06D/ BX or 2BX	ESP 15D/ BX or 2BX	ESP 30D/ BX or 2BX	ESP 50D/ BX or 2BX	ESP TN/ BX or 2BX
<b>Let-through voltage</b> <b>(all conductors)<sup>1</sup></b> 5kV, 10/700μs test to: <i>BS 6651:1999 App C, Cat C-High</i> <i>ITU (formerly CCITT) IX K17</i>	10.5V	23.8V	43.4V	74.9V	200V
<b>Maximum surge current<sup>2</sup></b>					
- per signal wire	10kA	10kA	10kA	10kA	10kA
- per pair	20kA	20kA	20kA	20kA	20kA

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

<sup>2</sup> Tested with 8/20μs waveshape to ITU (formerly CCITT), BS 6651:1999 Appendix C.

Mechanical specification

	ESP 06D/ BX or 2BX	ESP 15D/ BX or 2BX	ESP 30D/ BX or 2BX	ESP 50D/ BX or 2BX	ESP TN/ BX or 2BX
<b>Temperature range</b>	-25 to +70°C	-25 to +70°C	-25 to +70°C	-25 to +70°C	-25 to +70°C
<b>Connection type</b>	Screw terminal - for IDC terminal use part number with /I				
<b>Conductor size</b> (stranded)	1.5mm <sup>2</sup>	1.5mm <sup>2</sup>	1.5mm <sup>2</sup>	1.5mm <sup>2</sup>	1.5mm <sup>2</sup>
<b>Earth connection</b>	M6 stud	M6 stud	M6 stud	M6 stud	M6 stud
<b>Cable glands</b>	Accommodate 2.3 - 6.7mm diameter cable (PG7)				
<b>Outer enclosure</b>	PVC, IP66	PVC, IP66	PVC, IP66	PVC, IP66	PVC, IP66
<b>Weight</b> - unit	0.3kg	0.3kg	0.3kg	0.3kg	0.3kg
- packaged	0.35kg	0.35kg	0.35kg	0.35kg	0.35kg
<b>Dimensions</b>	