

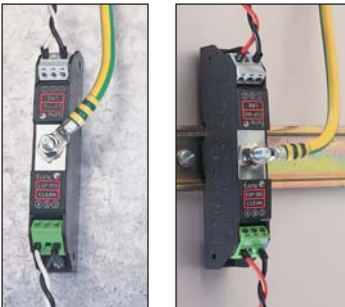
# D and TN Series



Suitable for most twisted pair signalling applications. Available for working voltages of up to 6, 15, 30, 50 and 110 volts and telephone pairs with a maximum working or ringing voltage of 296 volts

## Features and benefits

- ✓ Low let-through voltage between all lines
- ✓ Low in-line resistance minimises unnecessary reductions in signal strength
- ✓ Strong, flame retardant, ABS housing
- ✓ Supplied ready for flat mounting on base or side
- ✓ Built-in DIN rail foot for simple clip-on mounting to top hat DIN rails



Protectors can be flat mounted via their base (left) or side, or mounted on top hat DIN rail (right) via an integral spring loaded DIN rail foot

- ✓ Colour coded terminals give a quick and easy installation check – grey for the dirty (line) end and green for the clean end
- ✓ Screen terminal enables easy connection of cable screen to earth
- ✓ Substantial earth stud to enable effective earthing
- ✓ Integral earthing plate for enhanced connection to earth via a CME kit
- ✓ UK Ofcom Approval NS/G/1235/W/100025
- ✓ ESP 06D has Network Rail Approval. NRS PADS reference 086/000551
- ✓ ESP TN is suitable for telecommunication applications in accordance with Telcordia and ANSI Standards (see Application Note AN005)

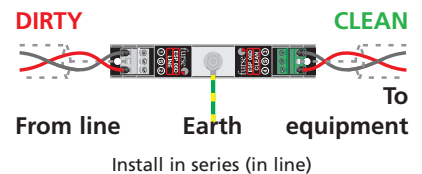
Derivatives of these protectors are available ready-boxed to IP66, for use in damp or dirty environments. PCB mount versions are also available. If your system requires a protector with a very low resistance or higher current, see the E & H Series. Also use the E Series for systems needing a higher bandwidth. A protector for 3-wire RTD applications (ESP RTD) is available, as are space saving protectors (Q Series). The KT and TN Series' are additional protectors specifically for telephone lines. The KS Series are protectors for data and signal lines on an LSA-PLUS module .

## Application

Use on twisted pair lines, eg those found in process control equipment, modems and computer communications interfaces.

## Installation

Connect in series with the data communication or signal line either near where it enters or leaves the building or close to the equipment being protected (eg within its control panel). Either way, it must be very close to the systems earth star point. Install protectors either within an existing cabinet/cubicle or in a separate enclosure.



## Accessories

Combined Mounting and Earthing kits

### CME 4

Mount & earth up to 4 protectors

### CME 8

Mount & earth up to 8 protectors

### CME 16

Mount & earth up to 16 protectors

### CME 32

Mount & earth up to 32 protectors

Weatherproof enclosures

### WBX 2/G

For use with up to 2 protectors

### WBX 3/G

For use with up to 3 protectors

### WBX 4

For use with a CME4 and up to 4 protectors

### WBX 8

For use with a CME 8 and up to 8 protectors

### WBX 16/2/G

For use with a CME 16 and up to 16 protectors

## Electrical specification

	ESP 06D	ESP 15D	ESP 30D	ESP 50D	ESP 110D	ESP TN
<b>Nominal voltage<sup>1</sup></b>	6V	15V	30V	50V	110V	-
<b>Maximum working voltage<sup>2</sup></b>	7.79V	19V	37.1V	58V	132V	296V
<b>Current rating (signal)</b>	300mA	300mA	300mA	300mA	300mA	300mA
<b>In-line resistance (per line ±10%)</b>	9.4Ω	9.4Ω	9.4Ω	9.4Ω	9.4Ω	4.4Ω
<b>Bandwidth (-3dB 50Ω system)</b>	800kHz	2.5MHz	4MHz	6MHz	9MHz	20MHz

1 Nominal voltage (DC or AC peak) measured at <5μA (ESP 15D, ESP 30D, ESP 50D, ESP 110D) and <200μA (ESP 06D).

2 Maximum working voltage (DC or AC peak) measured at <1mA leakage (ESP 15D, ESP 30D, ESP 50D, ESP 110D), <10mA (ESP 06D) and <10μA (ESP TN).

## Transient specification

	ESP 06D	ESP 15D	ESP 30D	ESP 50D	ESP 110D	ESP TN
<b>Let-through voltage (all conductors)<sup>1</sup></b>						
5kV, 10/700μs test to: BS 6651:1999 Appendix C, Cat C-High BSEN 61643-21:2001 IEC 61000-4-5:1995 ITU (formerly CCITT) K20, K21 and K45 Telcordia GR-1089-CORE, Issue 2:2002 ANSI TIA/EIA/IS-968-A:2002 (formerly FCC Part 68)	10.5V	23.8V	43.4V	74.9V	150V	300V
<b>Maximum surge current<sup>2</sup></b>						
- per signal wire	10kA	10kA	10kA	10kA	10kA	10kA
- per pair	20kA	20kA	20kA	20kA	20kA	20kA

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

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

## Mechanical specification

	ESP 06D	ESP 15D	ESP 30D	ESP 50D	ESP 110D	ESP TN
<b>Temperature range</b>	-25 to +70°C	-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	Screw terminal	Screw terminal	Screw terminal	Screw terminal	Screw terminal
<b>Conductor size (stranded)</b>	2.5mm <sup>2</sup>	2.5mm <sup>2</sup>	2.5mm <sup>2</sup>	2.5mm <sup>2</sup>	2.5mm <sup>2</sup>	2.5mm <sup>2</sup>
<b>Earth connection</b>	M6 stud	M6 stud	M6 stud	M6 stud	M6 stud	M6 stud
<b>Weight</b> - unit	0.08kg	0.08kg	0.08kg	0.08kg	0.08kg	0.08kg
- packaged (per 10)	0.85kg	0.85kg	0.85kg	0.85kg	0.85kg	0.85kg

### Dimensions

