

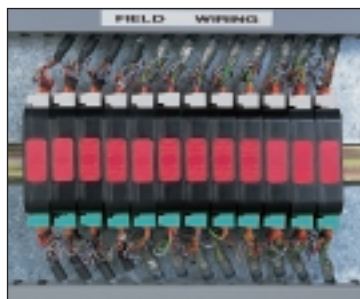


- ◆ Protection for 4 twisted pair lines (ESP 06Q, ESP 15Q, ESP 30Q, ESP 50Q and ESP TNQ).
- ◆ Protection for three 3-wire lines (ESP RTDQ).
- ◆ Available for working voltages of up to 6, 15, 30 and 50 volts, and telephone lines with a maximum working or ringing voltage of 190 volts.

### Application

Use these protectors where installation space is at a premium and large numbers of lines require protection. Typically used in process and petrochemical applications to protect supervisory, control and data acquisition systems.

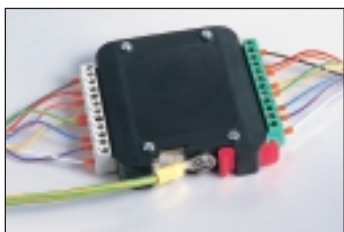
For more information on RTD applications, see separate Application Note AN001 (contact Furse for a copy).



12 ESP 30Qs, mounted on a G DIN rail, protect 48 twisted pair lines.

### Features and benefits

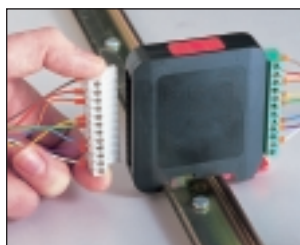
- ✓ Protect four twisted pair lines (plus screens) in one compact unit (ESP 06Q, ESP 15Q, ESP 30Q, ESP 50Q and ESP TNQ).
- ✓ ESP RTDQ protects three 3-wire lines in RTD applications.
- ✓ Almost twice as space efficient as smallest competitor.
- ✓ Standard DIN module (18mm) depth.
- ✓ Removable (plug-in) terminals allow pre-wiring of cable looms, for easier installation.
- ✓ Built-in DIN rail foot for clip-on mounting to top hat or G DIN rails.
- ✓ Optional flat mounting on side.



The Q Series can be earthed via DIN rail, or via the M5 threaded hole in its base (shown here).

Protectors for individual data and signal lines are available (D Series), or ready-boxed to IP66 (ESP \*\*D/BX etc). Alternatively, for individual protectors with higher current or bandwidth, use the E and H Series. For individual wire-in protectors for RTD applications, use the ESP RTD.

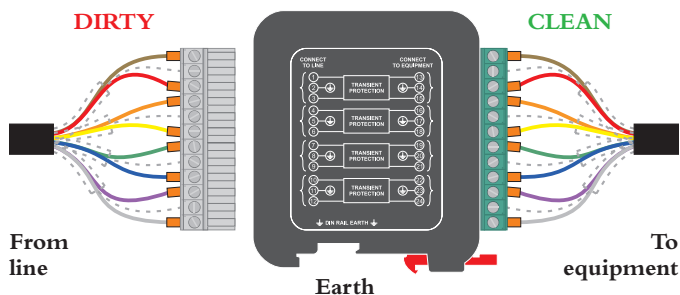
- ✓ 2.5mm<sup>2</sup> terminals allow for larger cross section wiring, stranded wires terminated with ferrules or fitting two wires into a single terminal.
- ✓ Low let-through voltage between all lines.
- ✓ Provides repeated protection in lightning intense environments.
- ✓ Very low resistance to minimise unwanted signal strength reductions.
- ✓ Strong, flame retardant, ABS housing.
- ✓ Colour coded terminals (grey for line, green for clean) give a quick and easy installation check.
- ✓ Screen terminal enables easy connection of cable screen to earth.
- ✓ Simple, yet substantial, connection to earth via DIN rail.
- ✓ UK OfTel Approval NS/G/1235/W/100025.



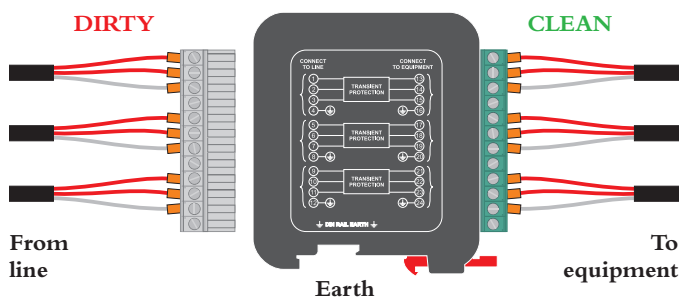
A Q Series protector mounted on a top hat DIN rail. Note the plug-in terminals for easier installation in confined spaces.

### Installation

Connect in series with the signal or data line either near where it enters or leaves the building or close to the equipment being protected. Install in a cabinet/cubicle close to the systems earth star point.



ESP 06Q, ESP 15Q, ESP 30Q, ESP 50Q or ESP TNQ installed in series (in line).



ESP RTDQ installed in series (in line).

High density data, signal and telephone lines

Electrical specification

	ESP 06Q	ESP 15Q	ESP 30Q	ESP 50Q	ESP TNQ	ESP RTDQ
<b>Nominal voltage<sup>1</sup></b>	6V	15V	30V	50V	*	6V
<b>Maximum working voltage<sup>2</sup></b>	7.78V	18.8V	37.8V	57.8V	190V	7.78V
<b>Current rating (signal)</b>	750mA	750mA	750mA	750mA	300mA	700mA
<b>In-line resistance</b> (per line ±10%)	1.0W	1.0W	1.0W	1.0W	4.3W	1.0W
<b>Bandwidth</b> (-3dB 50W system)	1MHz	2.5MHz	6MHz	5MHz	>50MHz	800kHz

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

2 Maximum working voltage (DC or AC peak) measured at <5mA leakage (ESP 15Q, ESP 30Q, ESP 50Q), <10mA (ESP 06Q, ESP RTDQ) and <95µA (ESP TNQ).

\* Post transient recovery voltage >80V.

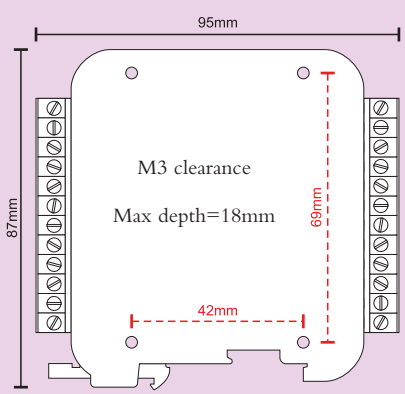
Transient specification

	ESP 06Q	ESP 15Q	ESP 30Q	ESP 50Q	ESP TNQ	ESP RTDQ
<b>Let-through voltage (all conductors)<sup>1</sup></b> 5kV, 10/700µs test to: BS 6651:1999 App C, Cat C-High ITU (formerly CCITT) IX K17	10.8V	26.2V	44.3V	65.8V	200V	10.5V
<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 06Q	ESP 15Q	ESP 30Q	ESP 50Q	ESP TNQ	ESP RTDQ
<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>	Plugable 12 way 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>	Via DIN rail or M5 threaded hole in base of unit					
<b>Dimensions</b>						
	Weight: Per unit = 0.1 kg Packaged (each) = 0.12 kg Packaged (x10) = 1.3 kg					