- **For Thin Ethernet (Cheapernet, IEEE 802.3, 10 base 2) systems, use ESP ThinNet (BNC connectors).**
- **For Thick Ethernet (IEEE 802.3, 10 base 5) systems, use ESP ThickNet (N connectors).**

Application

Use on thick and thin Ethernet cables that travel between buildings to prevent damage to equipment, eg transceivers, servers & repeaters.

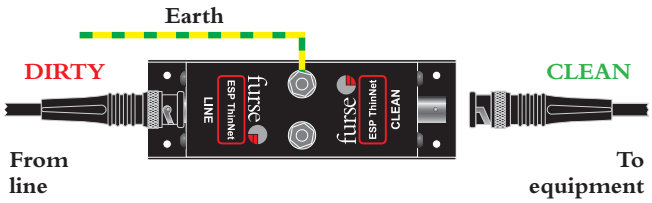
Features and benefits

- ✔ Low let-through voltage between all sets of conductors (see 'Ethernet technical note').
- ✔ Very low reflection coefficient/ VSWR ensures that the Lightning Barrier doesn't disrupt network operations.
- ✔ High bandwidth prevents degradation of high frequency signals.
- ✔ Low in-line resistance to minimise unnecessary reductions in signal strength and maximise signalling distance.

To protect twisted pair Ethernet (10 or 100 base T) networks with RJ45 connections use the ESP Net-100. Local protection for networked equipment is also available.

Installation

Connect in-line with the Ethernet cable near to where it enters and leaves the building or close to the equipment being protected. Ideally, close to the system's earth star point (for a good connection to earth).



Series connection of ESP ThinNet.

Note: allowing for one protector at each end, ESP ThinNet can be installed on segment lengths of up to 148 metres and ESP ThickNet can be used on segment lengths of up to 400 metres.

Suitable accessories

Use CME 4 or CME 8 to mount and earth up to 2 or 4 protectors, respectively. Enclosures are available.

Ethernet technical note

As a result of an isolation transformer in their transceivers, thin and thick Ethernet systems have an inbuilt immunity level (of around 400 volts) to transients between signal or screen and earth.

Electrical specification

	ESP ThinNet	ESP ThickNet
Nominal voltage	-2.05V peak	-2.05V peak
Maximum working voltage	-4.5V peak	-4.5V peak
Current rating (signal)	300mA	300mA
In-line resistance (±10%)	0.5Ω *inserted in coax inner*	0.5Ω *inserted in coax inner*
Bandwidth (50Ω system)	<0.1dB at 10MHz (<0.3dB at 50MHz)	<0.1dB at 10MHz (<0.3dB at 50MHz)
Voltage standing wave ratio	⩽1.08	⩽1.08

Transient specification

	ESP ThinNet	ESP ThickNet
Let-through voltage[1]		
5kV, 10/700µs test to: *BS 6651:1999 Appendix C, Cat C-High and ITU (formerly CCITT) IX K17*		
- signal to screen	20V	20V
- signal/screen to earth[2]	325V	325V
Maximum surge current[3]	10kA	10kA

1 Maximum transient voltage let-through the protector throughout the test (±10%), signal to screen and signal/screen to earth. Response time <10ns.
2 See boxed 'Ethernet technical note'. 3 Tested with 8/20µs waveshape to ITU (formerly CCITT), BS 6651:1999 Appendix C.

Mechanical specification

		ESP ThinNet	ESP ThickNet
Temperature range		-25°C to +70°C	-25°C to +70°C
Connection type		Coaxial BNC female	Coaxial N female
Earth connection		M6 stud	M6 stud
Weight	- unit	0.2kg	0.24kg
	- packaged	0.23kg	0.27kg