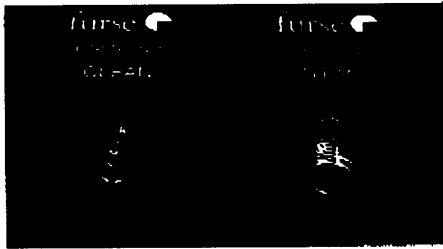


ESP ThinNet
ESP ThickNet

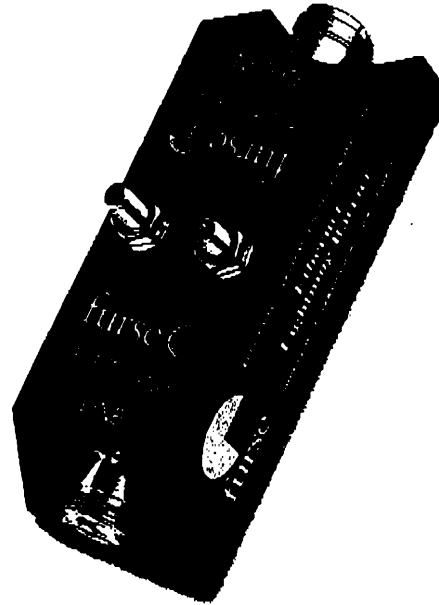
188608

Protectors for use on coaxial Ethernet systems

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



Available with BNC (ESP ThinNet, left) & N type (ESP ThickNet, right) connectors.



To protect twisted pair Ethernet (10 or 100 base T) networks with RJ45 connections use ESP Net-100 on pages 37-38.

Applications

Use these protectors on thick and thin Ethernet cables to protect:

- ◆ computers
- ◆ transceivers
- ◆ servers
- ◆ repeaters
- ◆ other network equipment.

Features and benefits

- ✓ Let-through voltage below equipment susceptibility levels to ensure effective protection for your equipment.
- ✓ Protection between all sets of conductors to close all transient paths to equipment (see 'Ethernet technical note').
- ✓ Provides repeated protection - even in lightning intense environments.

- ✓ Very low reflection coefficient/ VSWR ensures that the Lightning Barrier doesn't disrupt network operations.
- ✓ High bandwidth to prevent the degradation of high frequency signals.
- ✓ Low in-line resistance to minimise unnecessary reductions in signal strength and maximise signalling distance.
- ✓ Robust steel housing.
- ✓ Convenient holes for flat mounting.
- ✓ Substantial earth stud to enable effective earthing.
- ✓ Easy installation.
- ✓ Straightforward and comprehensive installation instructions.
- ✓ 5 year warranty.

Installation

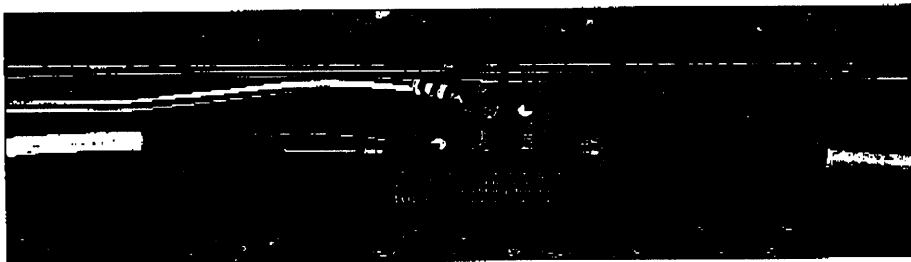
Connect in-line with the Ethernet cable near to where it enters/leaves the building or close to the equipment being protected. This should be close to the system's earth star point (to enable a good connection to earth).



Series connection of ESP ThickNet.



Series connection of ESP ThinNet.



ESP ThickNet installed on a Thick Ethernet cable from a satellite building, to prevent transient overvoltage damage to central systems. (In this photo the black insulation boots have been pulled back to reveal the connections.)

Install either within an existing cabinet/cubicle or in a suitable enclosure. If installing two or more protectors together these can be simultaneously mounted and earthed via a CME kit. 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.

Not sure which protector to use?



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 ($\pm 10\%$)	0.5Ω inserted in coax inner	0.5Ω inserted in coax inner
Bandwidth (50 Ω 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, 10/700 μ s test to: BS 6651:1999 Appendix C, Cat C-High ITU (formerly CCITT) IX K17		
- signal to screen	20V	20V
- signal/screen to earth	325V ²	325V ³
Maximum surge current ³	10kA	10kA

1 The maximum transient voltage let-through the protector throughout the test ($\pm 10\%$), signal to screen and signal/screen to earth. Response time <10ns.

2 See boxed 'Ethernet technical note'

3 Tested with 8/20 μ s 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	Coaxial N type
Earth connection	M6 stud	M6 stud
Weight - unit	0.2kg	0.24kg
- packaged	0.23kg	0.27kg
Dimensions	<p>ESP ThickNet - 124mm ESP ThinNet - 120mm</p> <p>54mm</p> <p>105mm M3 clearance</p> <p>38mm</p> <p>54mm</p>	

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.

Suitable accessories

Simultaneously mount and earth up to two ESP ThinNet or ThickNet protectors on a CME 4 or up to four on a CME 8 (see page 43). Enclosures for a single ESP Thick or ThinNet (the WBX 3/G) or for protectors on a CME 4 (the WBX 4) or CME 8 (the WBX 8) can be found on page 44.