ESP ThinNet and ThickNet Series

LPZ $0_B \rightarrow 3$

FULL MODE Bonding + Equipment Protection

SIGNAL/ TELECOM TEST CAT D + C + B

e ENHANCED Low let-through voltage

CURRENT 300mA RATING

LOW INLINE 0.5Ω RESISTANCE

Combined Category D, C, B tested protector (to BS EN 61643-21) suitable for use on Thick & Thin Ethernet cables that travel between buildings to prevent damage to equipment, e.g. transceivers, servers & repeaters. For use at boundaries up to LPZ 0_B to protect against flashover (typically the service entrance location) through to LPZ 3 to protect sensitive electronic equipment.

Features and benefits

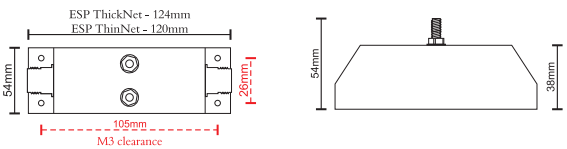
- ✔ Very low let-through voltage (enhanced protection to BS EN 62305) between all lines – Full Mode protection
- ✔ Very low reflection coefficient/VSWR
- ✔ High bandwidth prevents degradation of high frequency signals
- ✔ Low in-line resistance to minimise unnecessary reductions in signal strength and maximise signalling distance

Electrical specification	ESP ThinNet	ESP ThickNet
Nominal voltage	–2.05V peak	
Maximum working voltage *Uc*	–4.5V peak	
Current rating (signal)	300mA	
In-line resistance (per line ±10%)	0.5Ω inserted in coax inner	
Bandwidth (–3dB 50Ω system)	<0.1dB at 10MHz (<0.3dB at 50MHz)	
Voltage standing wave ratio	≤1.08	
Networking standards	10base2, IEEE 802.3a	10base5, IEEE 802.3

Transient specification	ESP ThinNet	ESP ThickNet
Let-through voltage (all conductors)[1] *Up*		
C2 test 4kV 1.2/50µs, 2kA 8/20µs to BS EN/EN/ IEC 61643-21 – signal to screen / signal/screen to earth[2]	35.0V/375V	
C1 test 1kV, 1.2/50µs, 0.5kA 8/20µs to BS EN/EN/ IEC 61643-21 – signal to screen / signal/screen to earth[2]	25.0V/310V	
B2 test 4kV 10/700µs to BS/EN/IEC 61643-21 – signal to screen / signal/screen to earth[2]	15.0V/295V	
5kV, 10/700µs[3] – signal to screen / signal/screen to earth[2]	20V/325V	
Maximum surge current[4]		
D1 test 10/350µs to BS EN/EN/IEC 61643-21	1kA	
8/20µs to ITU (formerly CCITT), BS 6651:1999 Appendix C	10kA	

Mechanical specification	ESP ThinNet	ESP ThickNet
Temperature range	–25°C to +70°C	
Connection type	Coaxial BNC female	Coaxial N female
Earth connection	M6 stud	
Casing material	Steel	
Weight – unit / packaged	0.2kg/0.23kg	0.24kg/0.27kg

Dimensions



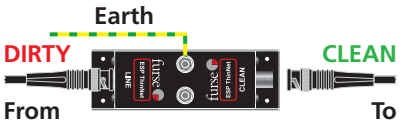
Application

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).

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).

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.



Series connection of ESP ThinNet

Accessories

Use CME 4 or CME 8 to mount and earth up to 2 or 4 protectors, respectively. Enclosures are available (see WBX Series).

To protect twisted pair Ethernet (10 or 100baseT) networks with RJ45 connections use ESP Cat-5. Local protection for networked equipment is also available.

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.

[1] The maximum transient voltage let-through the protector throughout the test (±10%), signal to screen & signal/screen to earth, both polarities. Response time <10ns

[2] See boxed 'Ethernet technical note'.

[3] Test to BS 6651:1999 Appendix C, Cat C-High, IEC 61000-4-5:1995, ITU-T (formerly CCITT) K.20, K.21 and K.45,Telcordia GR-1089-CORE, Issue 2:2002, ANSI TIA/EIA/IS-968-A:2002 (formerly FCC Part 68).

[4] The installation and connections external to the protector may limit the capability of the protector.

TSC-0808