TN/JP, TN/RJ11 and ISDN/RJ/45 Series

Use these to protect equipment plugged into a telephone or ISDN socket

Features and benefits

- ✔ ESP TN/JP and ESP TN/RJ11… are suitable for use on telephone lines with a maximum (or ringing) voltage of up to 296 volts
- ✔ For telephone lines with a British style, jack plug and socket connection, use ESP TN/JP
- ✔ For telephone lines with RJ11 connections protect the middle 2 (of 6) conductors with ESP TN/RJ11-2/6, the middle 4 (of 6) with ESP TN/RJ11-4/6 or all 6 with ESP TN/RJ11-6/6
- ✔ ESP ISDN/RJ… protectors are suitable for use on ISDN S/T interfaces
- ✔ For S/T interface ISDN lines with RJ45 connections protect the middle 4 (of 8) conductors (paired 3&6, 4&5) with ESP ISDN/RJ45-4/8, or all 8 (outside pairs 1&2, 7&8) with ESP ISDN/RJ45-8/8
- ✔ Controls transient overvoltages to a low level to ensure maximum protection
- ✔ Supplied in a sturdy ABS housing ready for flat mounting
- ✔ Substantial earth stud to enable effective earthing
- ✔ UK Oftel Approval NS/G/1235/W/100025
- ✔ ESP TN/JP, ESP TN/RJ11-2/6, ESP TN/RJ11-4/6 and ESP TN/RJ11-6/9 are suitable for telecommunication applications in accordance with Telcordia and ANSI Standards (see Application Note AN005)

The installation above clearly shows a protector installed with a short earth connection to the same earth as the equipment it's protecting

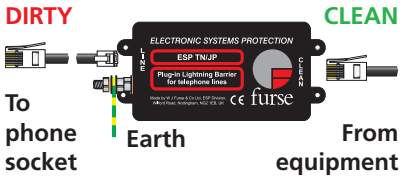
For non-ISDN wire-in applications the high performance ESP TN or ready-boxed derivative ESP TN/BX or ESP TN/2BX can be used. Protect PBX telephone exchanges and other equipment with LSA-PLUS connections.

Application

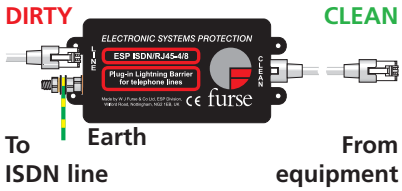
For further information on RJ45 ISDN applications, see separate Application Note AN002 (contact Furse for a copy).

Installation

Connect in series with the telephone or ISDN line. These units are usually installed close to the equipment being protected and within a short distance of a good electrical earth.



Plug-in series connection for ESP TN/JP (above) and ESP TN/RJ11-2/6, 4/6 & 6/6 (below) and ESP ISDN/RJ45-4/8 & 8/8 (bottom)



Accessories

ESP CAT5e/UTP-1
1 metre cable with RJ45 connections

TSC-05-07

Electrical specification

	ESP TN/JP	ESP TN/RJ11-2/6	ESP TN/RJ11-4/6	ESP TN/RJ11-6/6	ESP ISDN/ RJ45-4/8	ESP ISDN/ RJ45-8/8
Nominal voltage[1]	296V	296V	296V	296V	5V	5V/58V[2]
Maximum working voltage[2]	296V	296V	296V	296V	58V	58V
Current rating (signal)	300mA	300mA	300mA	300mA	300mA	300mA
In-line resistance (per line ±10%)	4.4Ω	4.4Ω	4.4Ω	4.4Ω	4.4Ω	4.4Ω
Bandwidth (-3dB 50Ω system)	20MHz	20MHz	20MHz	20MHz	19MHz	19MHz

1 Maximum working voltage (DC or AC peak) measured at <95µA leakage for ESP TN/JP and ESP TN/RJ11... products and 5µA for ESP ISDN/RJ45... products. Post transient recovery voltage for ESP TN/JP and ESP TN/RJ11... products >80V.
2 Maximum working voltage is 5V for pairs 3/6 & 4/5, and 58V for pairs 1/2 & 7/8.

Transient specification

	ESP TN/JP	ESP TN/RJ11-2/6	ESP TN/RJ11-4/6	ESP TN/RJ11-6/6	ESP ISDN/ RJ45-4/8	ESP ISDN/ RJ45-8/8
Let-through voltage (all conductors)[1]						
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)						
– line to line	300V	300V	300V	300V	27V	27V/80V[2]
– line to earth	300V	300V	300V	300V	80V	80V
Maximum surge current[2]	10kA	10kA	10kA	10kA	10kA	10kA

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 TN/JP	ESP TN/RJ11-2/6	ESP TN/RJ11-4/6	ESP TN/RJ11-6/6	ESP ISDN/ RJ45-4/8	ESP ISDN/ RJ45-8/8
Temperature range	-25 to +70°C	-25 to +70°C	-25 to +70°C	-25 to +70°C	-25 to +70°C	-25 to +70°C
Connection type	Standard BT jack plug and socket (to BS 6312)	RJ11 plug and socket	RJ11 plug and socket	RJ11 plug and socket	RJ45 plug and socket	RJ45 plug and socket
Earth connection	M6 stud	M6 stud	M6 stud	M6 stud	M6 stud	M6 stud
Weight - unit - packaged	0.15kg 0.2kg	0.15kg 0.2kg	0.15kg 0.2kg	0.15kg 0.2kg	0.15kg 0.2kg	0.15kg 0.2kg
Dimensions