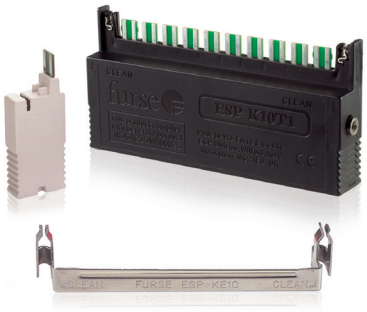
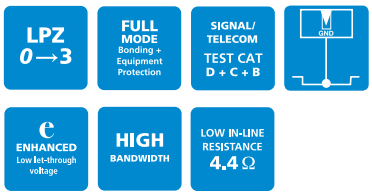
DATASHEET

Telecom & computer line protection

ESP KT & KE Series



Combined Category D, C, B tested protector (to BS EN 61643) suitable for use on ten line LSA-PLUS disconnection modules to PBX telephone exchanges, ISDN and other telecoms equipment with LSA-PLUS disconnection modules. For use at boundaries up to LPZ 0 to protect against flashover (typically the service entrance location) through to LPZ 3 to protect sensitive electronic equipment.



Features & benefits

- Low cost protection for large numbers of data and signal lines
- Very low let-through voltage (enhanced protection to IEC/BS EN 62305) between all lines - Full Mode protection
- Full Mode design capable of handling partial lightning currents as well as allowing continual operation of protected equipment
- Repeated protection in lightning intense environments
- Colour of housing distinguishes electrically different protectors - avoids confusion when installed together on the same distribution frame
- Quick and easy plug-in installation, with 'bump' location feedback
- Under power line cross conditions /PTC versions offer safe disconnection during fault duration. Unit auto-resets once fault corrected
- At larger installations ESP K10T1/2 and ESP K10T1/PTC provide all in one protection for all ten lines on LSA-PLUS disconnection modules
- Use the ESP KE10 to provide trouble free earthing for up to ten ESP KT1/2 and ESP KT1/PTC (per disconnection module)
- ESP K10T1/2 and ESP K10T1/PTC have an integral earth connection, and an external M4 earth bush for use with non-metallic LSA-Plus frames
- ESP KT1/PTC and ESP K10T1/PTC have resettable overcurrent protection and are rated for power cross faults
- ESP KT1, ESP KT1/PTC, ESP K10T1 and ESP K10T1/PTC are suitable for telecoms applications in accordance with Telcordia and ANSI Standards

Application

- For PSTN (e.g POTS, dial-up, lease line, T1/E1, *DSL and Broadband) and U interface ISDN lines, use ESP KT1 (or ESP KT1/PTC) and ESP K10T1 (or ESP K10T1/PTC)
- For S/T interface ISDN lines, use ESP KT2 and ESP K10T2
- Protect single lines with ESP KT1, ESP KT2 or ESP KT1/PTC
- Protect all ten lines on a disconnection module with ESP K10T1/2

Installation

Install protectors on all lines that enter or leave each building (including extensions to other buildings). Identify the lines requiring protection and plug-in the protector (ensuring the correct orientation) for a series connection. Plug ESP K10T1/2 directly into each disconnection module requiring protection.

ESP KT1/2 and ESP KT1/PTC must be installed via the ESP KE10 earth bar. Clip an ESP KE10 on to the disconnection module and plug an ESP KT1/2 or ESP KT1/PTC in to each line on the module that needs protecting. In the unlikely situation that the protector is damaged, it will sacrifice itself and fail short circuit, taking the line out of commission, indicating it needs replacing and preventing subsequent transients from damaging equipment.

For further information on global telephony applications, see separate Application Note AN005 (contact us for a copy).

NOTE: For individual telephone lines and lines at unmanned sites the high performance ESP TN, ready-boxed derivative ESP TN/BX or ESP TN/2BX, or plug-in ESP TN/JP or ESP TN/RJ11 Series should be used. For plug-in S/T interface ISDN protection, use the ESP TN or ISDN Series protectors.

ESP KT & KE Series - Technical specification

Electrical specification		ESP KT1	ESP KT1/PTC	ESP KT2	ESP K10T1	ESP K10T1/PTC	ESP K10T2
ABB order code		7TCA085400R0135	7TCA085400R0034	7TCA085400R0136	7TCA085400R0130	7TCA085400R0131	7TCA085400R0133
Maximum working	– line to line	296 V	296 V	5 V	296 V	296 V	5 V
voltage *Uc*[1]	– line to earth	296 V	296 V	58 V	296 V	296 V	58 V
Current rating (signal)		300 mA	145 mA	300 mA	300 mA	145 mA	300 mA
In-line resistance (per line ±10%)		4.4 Ω					
Bandwidth (-3 dB 50 Ω system)		20 MHz	20 MHz	19 MHz	20 MHz	20 MHz	19 MHz
Electrical specification		**ESP KT1**	**ESP KT1/PTC**	**ESP KT2**	**ESP K10T1**	**ESP K10T1/PTC**	**ESP K10T2**
Let-through voltage (all conductors)[2] *Up*							
C2 test 4 kV 1.2/50 µs,	– line to line	395 V	395 V	28 V	395 V	395 V	28 V
2 kA 8/20 µs to BS EN/EN/IEC 61643-21	– line to earth	395 V	395 V	88 V	395 V	395 V	88 V
C1 test 1 kV, 1.2/50 µs,	– line to line	390 V	390 V	23 V	390 V	390 V	23 V
0.5 kA 8/20 µs to BS EN/EN/IEC 61643-21	– line to earth	390 V	390 V	63 V	390 V	390 V	63 V
B2 test 4 kV 10/700 µs to	– line to line	298 V	298 V	26 V	298 V	298 V	26 V
BS EN/EN/IEC 61643-21	– line to earth	298 V	298 V	65 V	298 V	298 V	65 V
5 kV, 10/700 µs[3]	– line to line	300 V	300 V	27 V	300 V	27 V	27 V
	– line to earth	300 V	300 V	80 V	300 V	80 V	80 V
Maximum surge current[4]							
D1 test 10/350 µs to	– line to line	1 kA					
BS EN/EN/IEC 61643-21:	– line to earth	2 kA					
8/20 µs to ITU-T K.45:2003,	– line to line	5 kA					
IEEE C62.41.2:2002:	– line to earth	10 kA					
Power Faults specification		**ESP KT1**	**ESP KT1/PTC**	**ESP KT2**	**ESP K10T1**	**ESP K10T1/PTC**	**ESP K10T2**
Power/Line Cross and Power Induction - tests to: *I*TU-T (formerly CCITT) K.20, K.21 and K.45, Telcordia GR-1089-CORE, Issue 2:2002, UL 60950/IEC 950							
Power/line cross		–	110/230 Vac (15 min)	–	–	110/230 Vac (15 min)	–
Power induction		–	600 V, 1 A (0.2 sec)	–	–	600 V, 1 A (0.2 sec)	–

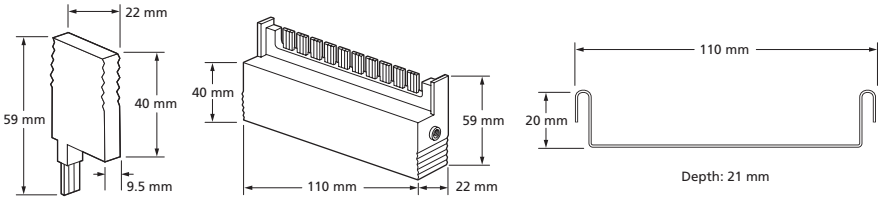
Mechanical specification	ESP KT1, ESP KT2, ESP KT1/PTC	ESP K10T1, ESP K10T2, ESP K10T1/PTC	ESP KE10
Temperature range	-40 to +80 °C		–
Connection type	To LSA-PLUS disconnection modules (BT part number 237A)		–
Earth connection	Via ESP KE10 earth bar	Via integral earth clip/external M4 bush	–
Material	FR Polymer UL-94 V-0		Stainless Steel
Weight: – Unit	0.01 kg	0.10 kg	0.01 kg
Dimensions	See diagram below		

[1] Maximum working voltage (DC or AC peak) at 10 µA for ESP KT1, ESP KT1/PTC, ESP K10T1, ESP K10T1/PTC and at 5 µA for ESP KT2 and ESP K10T2

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

[3] Test to IEC 61000-4-5:2006, 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 protecto.



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