

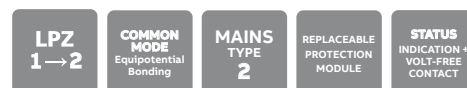
Mains power protection

ESP 800T2 and ESP 1000T2

Surge Protection Series



Type 2 /Class II tested Surge Protective Device SPD
(to BS EN/IEC 61643) for use on the sub-distribution board.
For use at boundaries up to LPZ 1 through to LPZ 2 to protect electrical equipment from damage.



Features & benefits

- Repeated protection in lightning intense environments
- Pluggable module design (with anti-vibration locking clip) allows for simple replacement at end-of-life
- Compact, space saving design
- Indicator shows when the SPD protection modules requires replacement
- Remote signal contact can indicate the protector's status through interfacing with a building management system

Application

- Use on three phase mains TN-C supplies and power distribution systems (up to 800V for ESP 800T2/40/TNC and up to 1000V for ESP 1000T2/40/TNC) for protection against indirect lightning strikes
- Can be installed on IT earthing systems where the earth on the distribution transformer is interconnected with the earth on the consumer side

Installation

The SPD is to be installed in the sub-distribution board with connecting leads of minimal length. The protector should be fused and is suitable for attachment to a 35 mm top hat DIN rail, with a minimum distance of 4 mm from any conductive surface. The diagrams below illustrate how to wire the appropriate ESP protector according to your chosen electrical system

Weatherproof enclosure:

WBX D4

ABB order code: 7TCA085410R0032

SPD replacement modules:

ESP 400T2/40/M

ABB order code: 7TCA08546R0019
(Right hand end of ESP 1000T2/40/TNC)

ESP 550T2/40/M

ABB order code: 7TCA08546R0020
(for phases of ESP 1000T2/40/TNC)

ESP 750T2/40/M

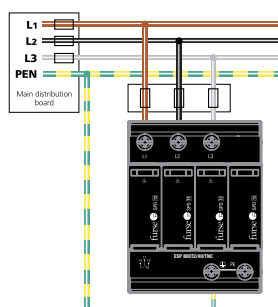
ABB order code: 7TCA08546R0021
(for ESP 800T2/40/TNC)

Metallic enclosure:

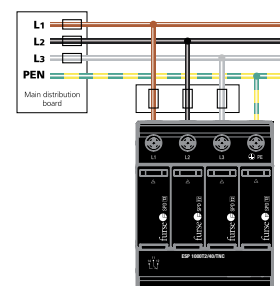
MBX D4

ABB order code: 7TCA085400R0649

ESP 800T2/40/TNC installation



ESP 1000T2/40/TNC installation



NOTE: Remote contact connections not shown, for clarity.

IMPORTANT: In order to protect sensitive electronic equipment, particularly from electrical switching transients, plus ensure the continual operation of systems, full mode SPDs, with both common and differential mode protection, are required. ESP M1 Series or ESP D1 Series SPDs should be installed at sub-distribution boards feeding sensitive equipment. For further information, please refer to the Furse Guide to BS EN 62305 Protection against lightning.

ESP 800T2 and ESP 1000T2 Surge Protection Series - Technical specification

Electrical specification	ESP 800T2/40/TNC	ESP 1000T2/40/TNC
ABB order code	7TCA085465R0018	7TCA085465R0017
Nominal voltage U_o (RMS)	800 V	1000 V
Maximum voltage U_c (RMS)	950 V	1100 V
Temporary Overvoltage TOV $U_r^{(1)}$ (5s/120m)	950 V	1100 V
Short circuit withstand capability I_{SCCR}	25 kA _{RMS} / 50 Hz	
Frequency range	47-63 Hz	
Max. back-up fuse (see installation instructions)	≤ 160 A	
Leakage current (to earth)	≤ 0.3 mA	≤ 0.6 mA
Volt free contact: ⁽²⁾	Push terminal	
– Current rating	1 A	
– Nominal voltage (RMS)	250 V	
Transient specification	ESP 800T2/40/TNC	ESP 1000T2/40/TNC
Type 2 (BS EN/EN), Class II (IEC)		
Nominal discharge current 8/20 μs (per mode) I_n	20 kA	15 kA
Let-through voltage U_p at I_n ⁽²⁾	≤ 4.5 kV	≤ 6 kV
Maximum discharge current I_{max} (per mode) ⁽³⁾	40 kA	40 kA
Mechanical specification	ESP 800T2/40/TNC	ESP 1000T2/40/TNC
Temperature range	-40 to +85 °C	
Connection type	Screw terminal - maximum torque 4.5 Nm	
Conductor size (solid/stranded) ⁽⁵⁾	35 mm ²	
Earth connection	Screw terminal - maximum torque 4.5 Nm	
Degree of protection (IEC 60529)	IP20	
Volt free contact	Push-fit connection for conductor up to 1.5mm ² rated AC 250 V, 1A	
Case material	Thermoplastic UL-94 V-0	
Mounting	Indoor, 35 mm top hat DIN rail	
Weight	0.56 kg	0.57 kg
Dimensions to DIN 43880 - HxDxW ⁽⁴⁾	90.2 mm x 70 mm x 72.7 mm* (4TE)	

⁽¹⁾ Temporary Overvoltage TOV rating is for durations of 5 seconds (withstand) and 120 minutes (safe fail) tested to BS EN/IEC 61643.

⁽²⁾ The maximum transient voltage let-through of the protector throughout the test, phase to neutral and neutral to earth

⁽³⁾ The electrical system, external to the unit, may constrain the actual current rating achieved in a particular installation

⁽⁴⁾ The remote signal contact (removable) adds 15 mm to height

⁽⁵⁾ Conductor size (flexible) is 25 mm²

* Maximum dimensions (this applies to all dimensions).

