

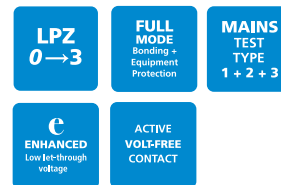
DATASHEET

Mains power protection

ESP DC125



Combined Type 1, 2 and 3 tested protector (to BS EN 61643) for use on direct current (d.c.) power distribution systems primarily to protect connected electronic equipment from transient overvoltages on the mains supply, e.g. computer, communications or control equipment. For use at boundaries up to LPZ 0 to protect against flashover (typically the main distribution board location, with multiple metallic services entering) through to LPZ 3 to protect sensitive electronic equipment.



Features & benefits

- Very low let-through voltage (enhanced protection to BS EN 62305) between all sets of conductors (positive, negative and earth - 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
- Innovative multiple thermal disconnect technology for safe disconnection from faulty or abnormal supplies (without compromising protective performance)
- Three way visual indication of protection status and advanced pre-failure warning so you need never be unprotected
- Remote indication facility allows pre-failure warning to be linked to a building management system, buzzer or light
- Changeover active volt-free contact enables the protector to be used to warn of power loss (i.e. power failure, blown fuses etc)
- Through terminal facility allows series connection on low current supplies to eliminate high additive voltage associated with connecting leads on units installed in parallel
- Compact space saving DIN housing

Installation

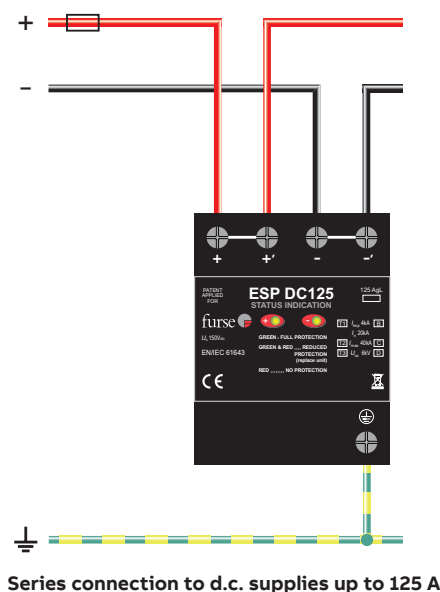
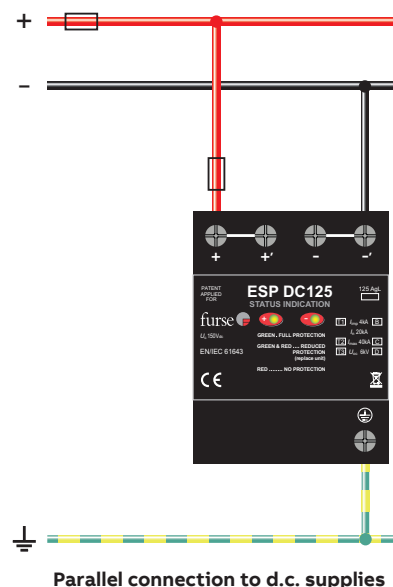
Install in parallel, within the power distribution board or directly (via fuses) on to the supply feeding equipment. At distribution boards, the protector can be installed either on the load side of the incoming isolator, or on the closest outgoing way to the incoming supply. Connect, with very short connecting leads, to positive, negative and earth.

Accessories

Weatherproof enclosure:

WBX D4

ABB order code 7TCA085410R0032



A full range of Furse ESP Protectors is available for protection of a.c. power supplies, as well as data, signal and telecommunications lines. Please see our Total Solution catalogue for further information.

Technical specification	
Electrical specification	ESP DC125
ABB order code	7TCA085460R0295
Nominal voltage - Positive-Neutral U_o (DC)	125 V
Maximum voltage - Positive-Neutral U_c (DC)	150 V
Short circuit withstand capability	25 kA, 50 Hz
Working voltage (DC)	90-150 V
Max. back-up fuse (see installation instructions)	≤125 A
Leakage current (to earth)	< 250 μ A
Indicator circuit current	< 25 mA
Volt free contact:	Screw terminal
– Current rating	250 V AC, 1 A
– Nominal voltage (DC)	250 VDC, 0.28 A
Transient specification	ESP DC125
Type 1 (BS EN/EN), Class I (IEC)	
Nominal discharge current 8/20 μ s (per mode) I_n	20 kA
Let-through voltage U_p at $I_n^{(2)}$	600 V
Impulse discharge current 10/350 μ s I_{imp} (per mode) ⁽³⁾	4 kA
Let-through voltage U_p at $I_{imp}^{(2)}$	500 V
Total discharge current (total current to earth) $I_{total}^{(3,4)}$	6.25 kA
Type 2 (BS EN/EN), Class II (IEC)	
Nominal discharge current 8/20 μ s (per mode) I_n	20 kA
Let-through voltage U_p at $I_n^{(2)}$	600 V
Maximum discharge current I_{max} (per mode) ⁽³⁾	40 kA
Maximum discharge current I_{max} (per conductor)	80 kA
Type 3 (BS EN/EN), Class III (IEC)	
Let-through voltage at U_{oc} of 6 kV 1.2/50 μ s and I_{sc} of 3 kA 8/20 μ s (per mode) ⁽⁵⁾	390 V
Mechanical specification	ESP DC125
Temperature range	-40 to +80 °C
Connection type	Screw terminal - maximum torque 4.5 Nm, with stripping length 11 mm
Conductor size (stranded)	25 mm ²
Earth connection	Screw terminal - maximum torque 4.5 Nm, with stripping length 11 mm
Volt free contact	Connect via screw terminal with conductor up to 1.5 mm ² (stranded) - maximum torque 0.25 Nm, with stripping length 7 mm, with stripping length 7 mm
Degree of protection (IEC 60529)	IP20
Case material	FR ABS UL-94 V-0
Weight: – Unit	0.4 kg
Packaged	0.5 kg
Dimensions to DIN 43880 - HxDxW(7)	90 mm x 88 mm x 72 mm (4TE)

⁽¹⁾ Minimum permissible load is 5 V DC, 10 mA to ensure reliable operation.

⁽²⁾ The maximum transient voltage let-through of the protector throughout the test ($\pm 5\%$) per mode.

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

⁽⁴⁾ Rating is considered as the current capability of the protector for equipotential bonding near the service entrance.

⁽⁵⁾ Combination wave test within BS EN/IEC 61643, IEEE C62.41-2002 Location Cats C1 & B3, SS 555:2010, AS/NZS 1768-2007, UL 1449 mains wire-in.

⁽⁶⁾ The remote signal contact (removable) adds 10 mm to height.

