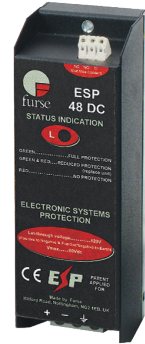


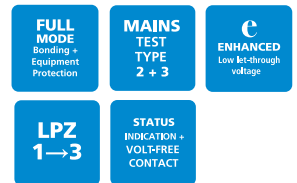
## DATASHEET

# Mains power protection

## ESP DC Series



Combined Type 2 and 3 tested protector (to BS EN 61643) for use on DC systems to protect connected electronic equipment from transient overvoltages on the mains supply, e.g. control equipment. Available for 12, 24, 36 and 48 V DC systems. For use at boundaries LPZ 1 through to LPZ 3 to protect sensitive electronic equipment.



### Features & benefits

- Low let-through voltage (enhanced protection to IEC/BS EN 62305) between all sets of conductors (positive to negative, positive to earth and negative to earth - Full Mode protection) allowing continuous operation of equipment
- Repeated protection in lightning intense environments
- Visual indication of protector status
- 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
- Robust steel housing
- Simple parallel connection
- Base provides ultra-low inductance earth bond to metal panels
- Compact size for installation in the power distribution board
- Maintenance free

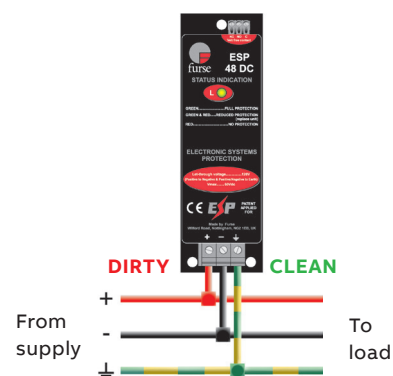
### Installation

Install in parallel, within the power distribution board or directly on the supply feeding the 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.

### Application

Use on DC power distribution systems to protect connected electronic equipment from transient overvoltages on the DC supply, e.g. DC fed communications or control equipment.

Parallel connection of ESP 48 DC



### Accessories

Weatherproof enclosure:

**WBX 3**

ABB Order code: 7TCA085410R0023

**NOTE:** For low current applications, the ESP H Series (4 A), ESP E Series (1.25 A) or ESP D Series (300 mA) protectors may be suitable. For protection of photovoltaic (PV) systems up to 1000 Vdc, see our ESP PV Series.

**ESP DC Series - Technical specification**

Electrical specification	ESP 12 DC	ESP 24 DC	ESP 36 DC	ESP 48 DC
ABB order code	7TCA085460R0073	7TCA085460R0091	7TCA085460R0100	7TCA085460R0142
Nominal voltage (DC)	12 V	24 V	36 V	48 V
Maximum voltage (DC)	15 V	30 V	45 V	60 V
Working voltage (DC)	9-15 V	18-30 V	27-45 V	36-60 V
Max. back-up fuse (see installation instructions)	≤ 63 A			
Leakage current (to earth)	< 250 µA			
Indicator circuit current	< 10 mA			
Volt free contact: <sup>(1)</sup>	Screw terminal			
– Current rating	1 A			
– Nominal voltage (RMS)	250 V			
Transient specification	ESP 12 DC	ESP 24 DC	ESP 36 DC	ESP 48 DC
Type 2 (BS EN/EN), Class II (IEC)				
Nominal discharge current 8/20 µs (per mode) <i>I</i> <sub>n</sub>	5 kA			
Let-through voltage <i>U</i> <sub>p</sub> at <i>I</i> <sub>n</sub> <sup>(2)</sup>	250 V			
Maximum discharge current <i>I</i> <sub>max</sub> (per mode) <sup>(3)</sup>	20 kA			
Type 3 (BS EN/EN), Class III (IEC)				
Let-through voltage at <i>U</i> <sub>oc</sub> of 6 kV 1.2/50 µs and <i>I</i> <sub>sc</sub> of 3 kA 8/20 µs (per mode) <sup>(2,4)</sup>	190 V			
Mechanical specification	ESP 12 DC	ESP 24 DC	ESP 36 DC	ESP 48 DC
Temperature range	-40 to +80 °C			
Connection type	Screw terminal - maximum torque 1.5 Nm			
Conductor size (stranded)	16 mm²			
Earth connection	Screw terminal - maximum torque 1.5 Nm			
Volt free contact	Connect via screw terminal with conductor up to 2.5 mm² (stranded) - maximum torque 0.25 Nm			
Degree of protection (IEC 60529)	IP20			
Case material	Steel			
Weight: – Unit	0.6 kg			
– Packaged	0.7 kg			
Dimensions	180 mm x 60mm x 73 mm			

<sup>(1)</sup> Minimum permissible load is 5 V DC, 10 mA to ensure reliable operation

<sup>(2)</sup> The maximum transient voltage let-through of the protector throughout the test (±10%) per mode

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

<sup>(4)</sup> Combination wave test within IEC/BS EN 61643, IEEE C62.41-2002 Location Cats C1 & B3, SS 555:2010, AS/NZS 1768-2007, UL 1449 mains wire-in

