TECHNICAL DATA SHEET

Mains power protection

ESP D/DS 10A & 32A Series (Single phase)

Combined Type 1, 2 and 3 tested protector (to BS EN 61643) for use on low current (up to 10 or 32 A) single phase systems to protect connected electronic equipment from transient overvoltages on the mains supply, e.g. fire/intruder alarm panels. Available for 90-150 Volts, 200-280 Volts and 232-350 Volts supplies. For use at boundary LPZ 0 through to LPZ 3 boundaries to protect sensitive electronic equipment.

LPZ 0→3 | FULL MODE Bonding + Equipment Protection | MAINS TEST TYPE 1 + 2 + 3

ENHANCED Low let-through voltage | ACTIVE VOLT-FREE CONTACT

Features & benefits

- Very low let-through voltage (enhanced protection to IEC/BS EN 62305) between all sets of conductors (phase to neutral, phase to earth, neutral to earth - Full Mode protection)
- Repeated protection in lightning intense environments
- Compact space saving DIN housing for easy incorporation in the protected system
- 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
- Advanced status (DS) version has remote indication facility to a BMS via an active changeover volt-free contact to show pre-failure warnings and potential phase loss
  (i.e. power failure, blown fuses etc), and a flashing warning of potentially fatal neutral to earth supply volts

Installation

Connect in-line with the power supply usually either within the equipment panel (or for CCTV cameras, in an enclosure close by), or on the fused connection that supplies equipment.

To protect equipment inside a building from transients entering on an outgoing feed (e.g. to CCTV cameras or to site lighting) the protector should be installed as close to where the cable leaves the building as possible.

Protectors should be installed either within an existing cabinet/cubicle or in a separate enclosure.

Application

Use these protectors on low current mains power supplies, e.g. CCTV cameras, alarm panels, industrial battery chargers and telemetry equipment.

Connect in-line on supplies fused up to 10 A (ESP 120D-10A, ESP 120DS-10A, ESP 240D-10A, ESP 240DS-10A, ESP 277D-10A or ESP 277DS-10A) or 32 A (ESP 120D-32A, ESP 120DS-32A, ESP 240D-32A, ESP 240DS-32A, ESP 277D-32A or ESP 277DS-32A)

Accessories

Weatherproof enclosure:
WBX D4
ABB Order code: 7TCA085410R0032

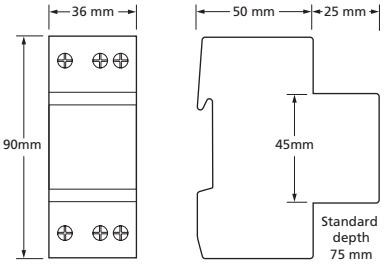
NOTE: If your supply is fused at more than 32 Amps the ESP 120 M1, ESP 240 M1 or ESP 277 M1 are suitable.

ESP D/DS 10A & 32A Series (Single phase) - Technical specification

Electrical specification	ESP 120D-10A ESP 120DS-10A	ESP 120D-32A ESP 120DS-32A	ESP 240D-10A ESP 240DS-10A	ESP 240D-32A ESP 240DS-32A	ESP 277D-10A ESP 277DS-10A	ESP 277D-32A ESP 277DS-32A
ABB order code	7TCA085460R0328 7TCA085460R0326	7TCA085460R0327 7TCA085460R0325	7TCA085460R0323 7TCA085460R0317	7TCA085460R0322 7TCA085460R0318	7TCA085460R0319 7TCA085460R0321	7TCA085460R0320 7TCA085460R0324
Nominal voltage - Phase-Neutral *Uo* (RMS)	120 V		240 V		277 V	
Maximum voltage - Phase-Neutral *Uc* (RMS)	150 V		280 V		350 V	
Maximum voltage - Neutral-Earth *Uc* (RMS)	100 V		255 V		255 V	
Temporary Overvoltage TOV *UT*(1)	175 V		350 V		402 V	
Short circuit withstand capability	10 kA/50 Hz					
Working voltage (RMS)	90-150 V		200-280 V		232-350 V	
Frequency range	47-63 Hz					
Current rating (supply)	10 A or less	32 A or less	10 A or less	32 A or less	10 A or less	32 A or less
Max. back-up fuse (see installation instructions)	10 A	32 A	10 A	32 A	10 A	32 A
Leakage current (to earth)	Zero					
Indicator circuit current	< 10 mA					
Volt free contact (DS versions only):(2)	Screw terminal					
– Current rating	1 A					
– Nominal voltage (RMS)	250 V					
Transient specification						
Type 1 (BS EN/EN), Class I (IEC)						
Nominal discharge current 8/20 µs (per mode) *In*	20 kA					
Let-through voltage Up at *In* (Phase-Neutral)	< 1 kV		< 1.3 kV		< 1.4 kV	
Let-through voltage Up at *In* (Neutral-Earth)	<1.5kV		<1.5kV		<1.5 kV	
Impulse discharge current 10/350 µs *Iimp* (L-N/E, N-E)(4)	4 kA, 12.5 kA					
Total discharge current (total to earth) *Itotal*(4,5)	6.25 kA					
Type 2 (BS EN/EN), Class II (IEC)						
Nominal discharge current 8/20 µs (per mode) *In*	20 kA					
Let-through voltage Up at *In* (Phase-Neutral)	< 1 kV		< 1.3 kV		< 1.4 kV	
Let-through voltage Up at *In* (Neutral-Earth)	<1.5 kV		<1.5 kV		<1.5 kV	
Maximum discharge current *Imax* (L-N/E, N-E)(4)	40 kA, 40 kA					
Type 3 (BS EN/EN), Class III (IEC)						
Let-through voltage at Uoc of 6 kV 1.2/50 µs and *Isc* of 3 kA 8/20 µs (L-N/N-E) (3,6)	400 V/1200 V		600 V/1200 V		680 V/1200 V	
Mechanical specification						
Temperature range	-40 to +80 °C					
Connection type	Screw terminal - maximum torque 0.8 Nm(7)					
Conductor size (stranded)	6 mm^2					
Earth connection	Screw terminal - maximum torque 0.8 Nm(7)					
Volt free contact (DS versions only)	Connect via screw terminal with conductor up to 1.5 mm^2 (stranded) - maximum torque 0.25 Nm(7)					
Degree of protection (IEC 60529)	IP20					
Case material	FR Polymer UL-94 V-0					
Weight: – Unit	0.23 kg					
– Packaged	0.25 kg					
Dimensions to DIN 43880 - HxDxW(8)	90 mm x 75 mm x 36 mm (2TE)					

*To enclose the products to IP65, fit within a WDX D4, available from Furse

(1) Temporary Overvoltage rating is for a maximum duration of 5 seconds tested to BS EN/EN/IEC 61643
(2) Minimum permissable load is 5 V DC, 10 mA to ensure reliable operation
(3) The maximum transient voltage let-through of the protector throughout the test (±10%)
(4) The electrical system, external to the unit, may constrain the actual current rating achieved in a particular installation
(5) Rating is considered as the current capability of the protector for equipotential bonding near the service entrance
(6) 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
(7) Torque should typically be 50% to 75% of the maximum value
(8) The remote signal contact (removable) adds 10 mm to height



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