ESP D1 Series NEW

Combined Type 1, 2 and 3 tested protector (to BS EN 61643) for use on mains power distribution systems primarily to protect connected electronic equipment from transient overvoltages on the mains supply, e.g. computer, communications or control equipment. Innovative remote display options allow both protector and display to be mounted in their optimum position. For use at boundaries up to LPZ 0_B to protect against flashover (typically the main distribution board location, with multiple metallic services entering) through to LPZ 3 to protect sensitive electronic equipment.

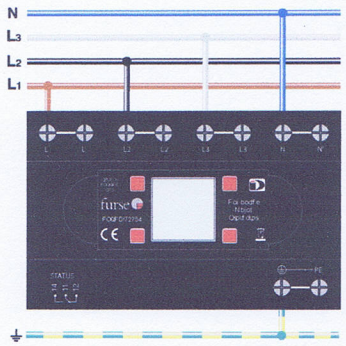
Features and benefits

- ✔ Very low let-through voltage (enhanced protection to BS EN 62305) between all sets of conductors (phase to neutral, phase to earth, neutral to 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
- ✔ Three phase ESP XXX D1R or ESP XXX D1R/LCD units (where XXX = 208, or 415, or 480) have a remote display that allows the protector to be mounted close to the incoming feed or distribution board with the display being mounted in a visible position e.g. at the front of the panel
- ✔ Three phase ESP XXX D1/LCD or ESP XXX D1R/LCD units have backlit LCD intelligent display offering clear status information that can be rotated should the unit be mounted on its side to facilitate short connecting leads for optimal protection
- ✔ 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 phase loss (i.e. power failure, blown fuses etc)
- ✔ Flashing warning of potentially fatal neutral to earth supply faults (due to incorrect earthing, wiring errors or unbalanced conditions)
- ✔ 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. Can be installed in series for low current supplies – see installation instructions.

For three phase ESP XXX D1R or ESP XXX D1R/LCD units, position remote display, making sure that the cable is long enough, is unimpeded within the cabinet, and allows a minimum of 60mm behind the panel front (for the interconnection cable).



Parallel connection of ESP 415 D1, ESP 208 D1 and ESP 480 D1 series to three phase star (4 wire and earth) supplies (fuses not shown for clarity)

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 phase(s), neutral and earth.

Accessories

Weatherproof enclosures

WBX D4
Use with single phase protectors

WBX D8
Use with three phase protectors

ESP RLA HD-1
Spare 1 metre cable assembly for three phase ESP XXX D1R or ESP XXX D1R/LCD

ESP RLA HD-4
Spare 4 metre cable assembly for three phase ESP XXX D1R or ESP XXX D1R/LCD

furse

NEW ESP D1 Series

Electrical specification	SINGLE PHASE			THREE PHASE SERIES[1]		
	NEW ESP 120 D1	NEW ESP 240 D1	NEW ESP 277 D1	NEW ESP 208 D1 Series	NEW ESP 415 D1 Series	NEW ESP 480 D1 Series
Nominal voltage - Phase-Neutral *Uo* (RMS)	120V	240V	277V	120V	240V	277V
Maximum voltage - Phase-Neutral *Uc* (RMS)	150V	280V	350V	150V	280V	350V
Temporary Overvoltage TOV *Ut*[2]	175V	350V	405V	175V	350V	405V
Short circuit withstand capability	25kA, 50Hz					
Working voltage (RMS)	90-150V	200-280V	232-350V	156-260V	346-484V	402-600V
Frequency range	47-63Hz					
Max. back-up fuse (see installation instructions)	125A					
Leakage current (to earth)	<250µA					
Indicator circuit current	<10mA					
Volt free contact[3] **– current rating** **– nominal voltage** (RMS)	Screw terminal 1A 250V					

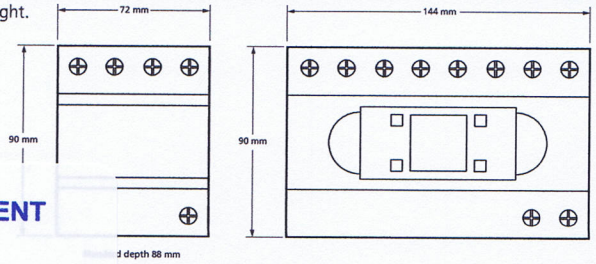
[1] Three phase series (208V, 415V or 480V) include fixed (D1) or remote (D1R) LED or LCD options e.g. ESP 415 D1, ESP 415 D1/LCD, ESP 415 D1R, ESP 415 D1R/LCD.
[2] Temporary Overvoltage rating is for a maximum duration of 5 seconds tested to BS EN/EN/IEC 61643.
[3] Minimum permissable load is 5V DC, 10mA to ensure reliable operation.

Transient specification	ESP 120 D1	ESP 240 D1	ESP 277 D1	ESP 208 D1 Series	ESP 415 D1 Series	ESP 480 D1 Series
Type 1 (BS EN/EN), Class I (IEC)						
Nominal discharge current 8/20µs (per mode) *In*	20kA					
Let-through voltage *Up* at *In*[1]	600V	900V	1kV	600V	900V	1kV
Impulse discharge current 10/350µs *Iimp* (per mode)[2]	4kA					
Let-through voltage *Up* at *Iimp*[1]	500V	750V	850V	500V	750V	850V
Impulse discharge current (per phase) *Iimp*[3]	6.25kA					
Type 2 (BS EN/EN), Class II (IEC)						
Nominal discharge current 8/20µs (per mode) *In*	20kA					
Let-through voltage *Up* at *In*[1]	600V	900V	1kV	600V	900V	1kV
Maximum discharge current *Imax* (per mode)[2]	40kA					
Maximum discharge current *Imax* (per phase)	80kA					
Type 3 (BS EN/EN), Class III (IEC)						
Let-through voltage *Up* at *Uoc*[1] of 6kV 1.2/50µs and *Isc* of 3kA 8/20µs (per mode)[4]	390V	600V	680V	390V	600V	680V

[1] The maximum transient voltage let-through of the protector throughout the test (±5%), phase to neutral, phase to earth and neutral to earth.
[2] The electrical system, external to the unit, may constrain the actual current rating achieved in a particular installation.
[3] Rating is considered as the current capability of the protector for equipotential bonding near the service entrance.
[4] Combination wave test within BS 6651:1999 App. C, Cats C-Low & B-High, IEEE C62.41-2002 Location Cats C1 & B3, SS CP 33:1996 App. F, AS 1768-1991 App. B, Cat B, UL1449 mains wire-in.

Mechanical specification	ESP 120 D1	ESP 240 D1	ESP 277 D1	ESP 208 D1 Series	ESP 415 D1 Series	ESP 480 D1 Series
Temperature range	–40 to +70°C					
Connection type	Screw terminal					
Conductor size (stranded)	35mm²					
Earth connection	Screw terminal					
Volt free contact	Connect via screw terminal with conductor up to 1.5mm² (stranded)					
Display connection (three phase 208/415/480 D1R or D1R/LCD versions)	–			HD-D Type 1 metre interconnection cable – 4 metre cable (ESP RLA HD-4) optional		
Degree of protection (IEC 60529)	IP20					
Case material	FR ABS UL-94 V-0					
Weight – unit	0.4kg			0.85kg		
– packaged	0.5kg			0.95kg		
Dimensions to DIN 43880 – HxDxW[1]	90mm x 88mm x 72mm (4TE)			90mm x 88mm x 144mm (8TE)		

[1] The remote signal contact (removable) adds 10mm to height.



If you desire a protector with an extra high maximum surge current use the ESP M2 or M4 series. If your supply is fused at 16 amps, or less, the in-line

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