



3 phase Type I protectors

Specifications

- Type I/Class B protectors
- I_{max} of up to 100kA 8/20 μ s per mode (160kA 8/20 μ s for TT versions)
- I_{imp} of up to 25kA 10/350 μ s per mode (100kA 10/350 μ s for TT versions)

Application

- Use on three phase mains supplies and power distribution systems for protection against partial direct or indirect lightning strikes
- ESP 415/II/XXX versions for use with Class I or II Lightning Protection Systems (LPS)
- ESP 415/III/XXX versions for use with Class III or IV LPS; or exposed overhead three phase power lines where no LPS is fitted
- ESP 415/X/TNS versions also cover TNC-S earthing systems

Installation

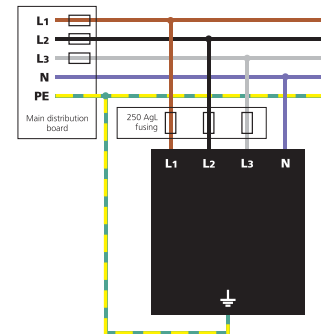
Protector to be installed in the main distribution panel with connecting leads of minimal length. The protector should be fused and is suitable for attachment to a 35mm top hat DIN rail.

Features and benefits

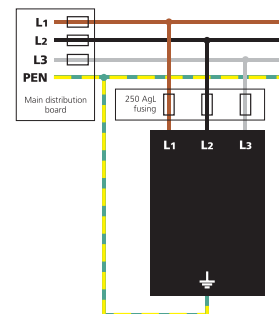
- Enhanced protection offering low let-through voltage (U_p)
- The varistor based design eliminates the high follow current (I_f) associated with spark gap based surge protection
- Compact, space saving design
- Indicator shows when the protector requires replacement
- Remote signal contact can indicate the protectors' status through interfacing with a building management system

Wiring diagrams

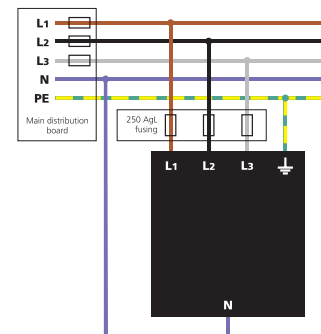
The diagrams below illustrate how to wire the appropriate ESP protector according to your chosen electrical system.



TNS earthing system



TNC earthing system



TT earthing system

Electrical specification

	ESP 415/I/TNS	ESP 415/III/TNS	ESP 415/II/TNC	ESP 415/III/TNC	ESP 415/I/TT	ESP 415/III/TT
Nominal voltage	220-240V _{RMS}	220-240V _{RMS}	220-240V _{RMS}	220-240V _{RMS}	220-240V _{RMS}	220-240V _{RMS}
Maximum continuous operating voltage (U_c)	275Vac, 350Vdc	275Vac, 350Vdc	275Vac, 350Vdc	275Vac, 350Vdc	275Vac, 350Vdc	275Vac, 350Vdc
Back up fuse (If mains supply >100A)	250A gL	250A gL	250A gL	250A gL	250A gL	250A gL
Short circuit capability	25kA/50Hz	25kA/50Hz	25kA/50Hz	25kA/50Hz	25kA/50Hz	25kA/50Hz
Signal contact ratings	250V _{RMS} / 0.5A	250V _{RMS} / 0.5A	250V _{RMS} / 0.5A	250V _{RMS} / 0.5A	250V _{RMS} / 0.5A	250V _{RMS} / 0.5A
Arrester classification/Type						
E DIN VDE 0675	B (B+C)	B (B+C)	B (B+C)	B (B+C)	B (B+C)	B (B+C)
IEC ¹	I, II	I, II	I, II	I, II	I, II	I, II

1 Tested to BS/EN & IEC 61643

Transient specification

Let-through voltage (U_p)						
at I _n (8/20μs)	<1.4kV	<1.4kV	<1.4kV	<1.4kV	<1.4kV	<1.4kV
at I _{imp} (10/350μs)	<1.1kV	<1.0kV	<1.1kV	<1.0kV	<1.1kV	<1.0kV
at (1.2/50μs) – GDT only	-	-	-	-	<1.2kV	<1.2kV
Nominal discharge current						
I _n , (8/20μs)	40kA	20kA	40kA	20kA	40kA(MOV)/ 100kA(GDT)	20kA(MOV)/ 50kA(GDT)
Maximum discharge current						
I _{max} (8/20μs)	100kA	50kA	100kA	50kA	100kA(MOV)/ 160kA(GDT)	50kA(MOV)/ 100kA(GDT)
I _{imp} (10/350μs)	25kA	12.5kA	25kA	12.5kA	25kA(MOV)/ 100kA(GDT)	12.5kA(MOV)/ 50kA(GDT)

Mechanical specification

Temperature range	-40 to +80°C
Connection	
- for power	35mm ² solid conductor, 25mm ² stranded conductor
- for signal (remote contact)	1.5mm ² conductor
Mounting	Indoor, 35mm top hat DIN rail
Degree of protection	IP20
Case material	
Thermoplastic, UL 94 V-0	
for ESP 415/X/TNS	90mm x 68mm x 72mm (4TE)
for ESP 415/X/TNC	90mm x 68mm x 54mm (3TE)
for ESP 415/X/TT	90mm x 68mm x 90mm (5TE)
The remote signal contact terminals (removable) add 10mm to height	