

Type 1 AC power Surge Protector DS250E



The DS250E is a Heavy Duty Type 1 AC Surge Protector Device (SPD) designed to be connected at the entrance of the electrical installation. This SPD provides an efficient protection against direct and indirect effects and is particularly useful in a high lightning density area where the risk of heavy surge current or even direct strike is high (e.g. : buildings equipped with lightning rods).

The DS250E is a one-pole SPD and can be used in common mode (DS250Es connected between L/PE and N/PE) or common and differential mode (DS250Es connected between L/N and 1 x DS100G between N/PE).

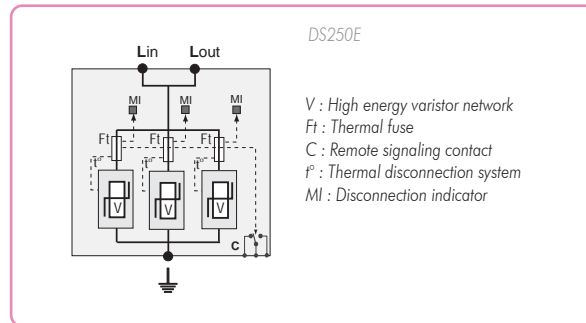
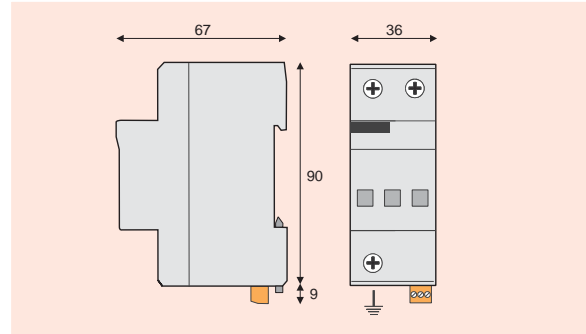
This SPD is designed to withstand a 25 kA lightning current (10/350 μ s impulse). It is based on «multi-MOV» diagram : this technology allows a very high discharge capability and the best behaviour possible on AC network (no follow current).

To meet standards, the DS250E includes a thermal disconnection mechanism, fault indicator and an internal microswitch for remote signalling.

This SPD is DIN rail compatible and is featured with double terminal for line wire to allow improved connection to AC network.

- **Type 1 High-energy Surge Protector**
- **limp : 25 kA on 10/350 μ s impulse**
- **I_{max} : 140 kA on 8/20 μ s impulse**
- **Internal disconnections, status indicators and remote signalling**
- **IEC 61643-1, EN 61643-11 and UL1449 ed.2 compliance**

Dimensions and Diagram



Characteristics

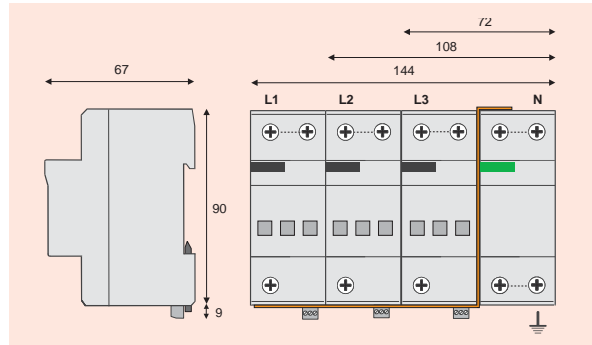
CITEL part number	DS250E-400	DS250E-300	DS250E-120
Network	230/400V	230/400V	120/208V
Connection mode	L/PE	L/N	L/N, L/PE
AC system	IT, TT	TT, TN	TT, TN
Max. operating voltage	U _c 400 Vac	330 Vac	150 Vac
TOV withstand	U _T 400 Vac	330 Vac	150 Vac
Operating current	I _c < 2 mA	< 2 mA	< 2 mA
Leakage current at U _c			
Follow current	I _f none	none	none
Nominal discharge current	I _n 50 kA	70 kA	70 kA
15 x 8/20 μ s impulses			
Maximal discharge current	I _{max} 140 kA	140 kA	140 kA
max. withstand @ 8/20 μ s			
Max. lightning current by pole	limp 25 kA	25 kA	25 kA
max. withstand @ 10/350 μ s			
Residual voltage (at limp)	U _{res} 2 kV	1.5 kV	0.6 kV
Protection level (at I _n)	U _p 2.5 kV	2.5 kV	1 kV
Admissible short-circuit current	25000 A	25000 A	25000 A
Associated disconnection devices			
Thermal disconnecter	internal		
Fuses	Fuses type gG - 125 A max. (see Note 1)		
Installation ground fault breaker	Type «S» or delayed		
Mechanical characteristics			
Dimensions	See diagram		
Connection	by screw terminals : 6-35 mm ² / by bus		
Disconnection indicator	3 mechanical indicators		
Remote signaling of disconnection	output on changeover contact		
Mounting	symmetrical rail 35 mm		
Operating temperature	-40/+85 °C		
Protection class	IP20		
Housing material	Thermoplastic PEI UL94-5VA		
Standards compliance			
IEC 61643-1	International	Low Voltage SPD - Test Class I and II	
EN 61643-11	Europe	Low Voltage SPD - Test Class I and II	
NF EN 61643-11	France	Parafoudre Basse Tension - Essais Classe I et II	
UL1449 ed.2	USA	Low Voltage TVSS	

Note 1: Rating in compliance with nominal discharge current. In order to increase service continuity, higher rating can be used (up to 250 A). For further information, please consult product instructions.

Type 1 AC power Multipolar Surge Protector

DS252E
DS253E
DS254E

Dimensions and Diagram



DS250E AC surge protectors are designed to be connected in multi-pole configuration to protect single phase, 3-phase and 3-phase+Neutral AC networks. They are sometimes associated with a dedicated N/PE SPD (DS100G, «Gas tube» technology surge protector).

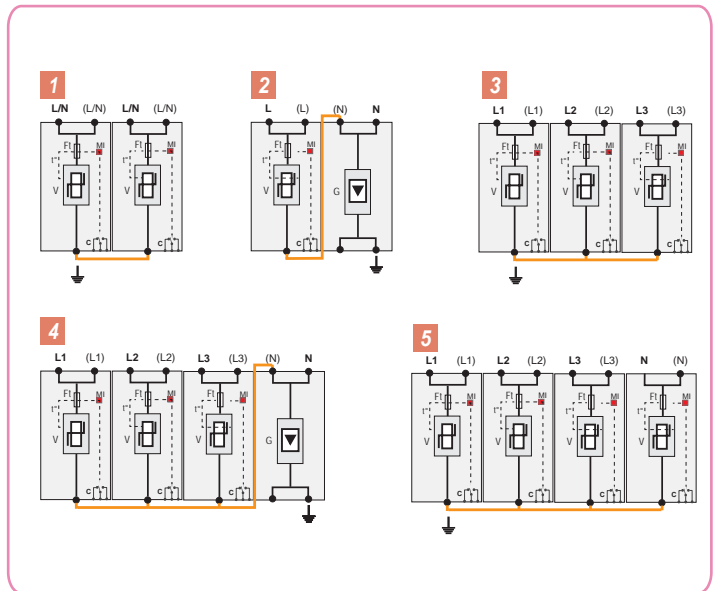
2 configurations are available:

Common mode : CT1 Configuration

The DS250E are connected between active wires (Phase(s) and Neutral) and earthing network (PE).

Common and differential mode : CT2 Configuration

The DS250E are connected between Phase(s) and Neutral for differential mode protection. A specific surge protector DS100G is connected between Neutral to PE for common mode protection. This CT2 version provides an enhanced protection efficiency.



Part number	Network	AC system	Protection mode		Iimp total	Up L/PE	Up L/N	Diagram
			common	differential				
DS254E-300/G	230/400 V 3-phase+N	TT-TN	●	●	100 kA	2.5 kV	2.5 kV	4
DS254E-120/G	120/208 V 3-phase+N	TT-TN	●	●	100 kA	1.5 kV	1 kV	
DS254E-400	230/400 V 3-phase+N	IT	●		100 kA	2.5 kV	-	5
DS254E-300	230/400 V 3-phase+N	TT-TN	●		100 kA	2.5 kV	-	
DS254E-120	120/208 V 3-phase+N	TT-TN	●		100 kA	1 kV	-	3
DS253E-400	400 V 3-phase	IT-TT	●		75 kA	2.5 kV	-	
DS253E-300	400 V 3-phase	TNC	●		75 kA	2.5 kV	-	1
DS253E-120	208 V 3-phase	TNC	●		75 kA	1 kV	-	
DS252E-300/G	230 V single phase	TN	●	●	50 kA	2.5 kV	2.5 kV	2
DS252E-120/G	120 V single phase	TN	●	●	50 kA	1.5 kV	1 kV	
DS252E-400	230V single phase	TT-IT	●		50 kA	2.5 kV	-	1
DS252E-300	230V single phase	TN	●		50 kA	2.5 kV	-	
DS252E-120	120 V single phase	TN	●		50 kA	1 kV	-	