



**I<sub>max</sub>**  
**40 kA**

# Type 2 AC power Surge Protector

## DS40

**A30**



DS40 Type 2 AC Surge Protectors are used mainly for primary protection of single and 3-Phase networks at the main electrical panel. They provide common-mode (between L and PE) or common and differential mode (L/PE and L/N) when associated with DS40G (DS4x-xxx/G version). They are available in one-phase, single-phase, three-phase, and three-phase+neutral versions.

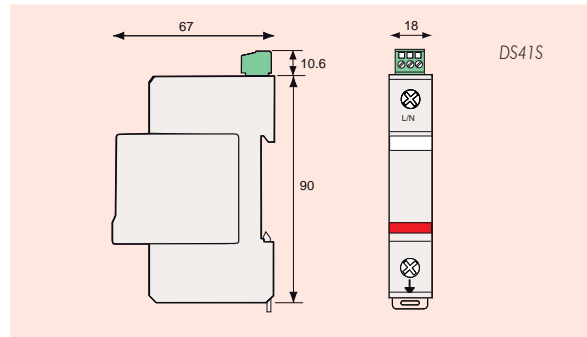
The DS40 impulse discharge capability classifies this SPD as regular Type 2, useful in case of medium lightning density areas. IEC60364 standard requests Type 2 SPD at the entrance of installation if the keraunic level  $N_k > 25$ .

This SPD is based on high energy varistor equipped with thermal disconnecter and failure indicator, to comply with standards. Version with a remote signaling for disconnection indication is also available (DS4\*S).

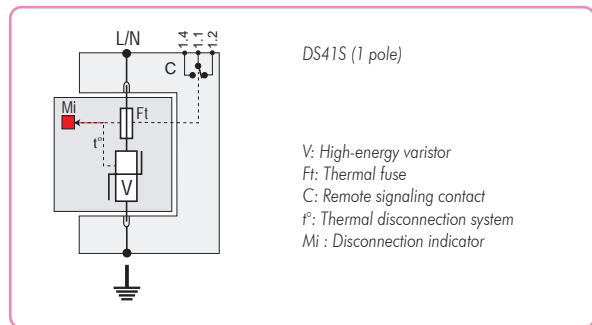
The DS40 is available for a large range of AC voltages. The DS40 is DIN rail compatible and is built with a plug-in module (DSM40-xxx) and a fixed base, which allows an easy and fast maintenance.

- Type 2 AC Surge Protector
- Discharge currents :  $I_n$  : 20 kA/ $I_{max}$  : 40 kA
- Pluggable module for each phase
- Remote signaling option
- IEC 61643-1 and EN 61643-11 compliance

### Dimensions (in mm)



### Electrical diagram



### Characteristics

CITEL part number	DS41-400	DS41-230	DS41-120
Network	230/400V	230/400V	120/208V
Max. operating voltage	$U_c$ 400 Vac	255 Vac	150 Vac
Temporary overvoltage withstand	$U_T$ 400 Vac	255 Vac	150 Vac
Operating current	$I_c$ < 1 mA	< 1 mA	< 1 mA
Leakage current at $U_c$			
Follow current	$I_f$ none	none	none
Nominal discharge current	$I_n$ 20 kA	20 kA	20 kA
15 x 8/20 $\mu$ s impulse			
Maximum discharge current	$I_{max}$ 40 kA	40 kA	40 kA
max. withstand 8/20 $\mu$ s			
Protection level (at $I_n$ )	$U_p$ 1.8 kV	1.25 kV	0.9 kV
Residual voltage at 10 kA	1.5 kV	1.1 kV	0.7 kV
Residual voltage at 5 kA	1.3 kV	0.9 kV	0.6 kV
Admissible short-circuit current	25000 A	25000 A	25000 A
<b>Associated disconnection devices</b>			
Thermal disconnecter	internal		
Fuses	Fuses type gG - 50 A max. (see Note 1)		
Installation ground fault breaker	Type «S» or delayed		
<b>Mechanical characteristics</b>			
Dimensions	see diagram		
Connection	by screw terminals : 4-25 mm <sup>2</sup> / by bus		
Disconnection indicator	1 mechanical indicator		
Remote signaling of disconnection	Option DS40S - output on changeover contact		
Mounting	symmetrical rail 35 mm		
Operating temperature	-40/+85 °C		
Protection class	IP20		
Housing material	Thermoplastic UL94-V0		
<b>Standards compliance</b>			
EN 61643-11	Europe	Low Voltage SPD - Class II Test	
IEC 61643-1	International	Low Voltage SPD - Class II Test	
NF EN 61643-11	France	Parafoudre Basse Tension - Essais Classe II	
UL1449 ed.2	USA	Low Voltage TVSS	

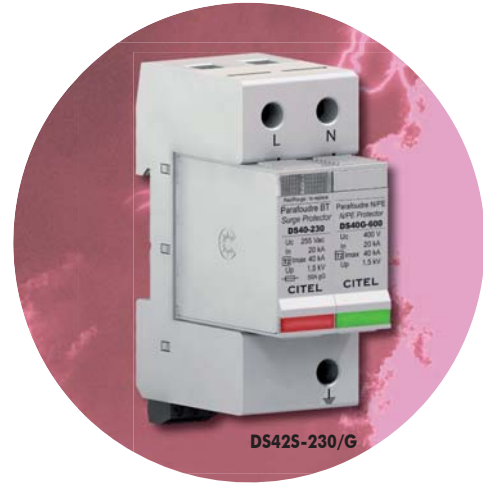
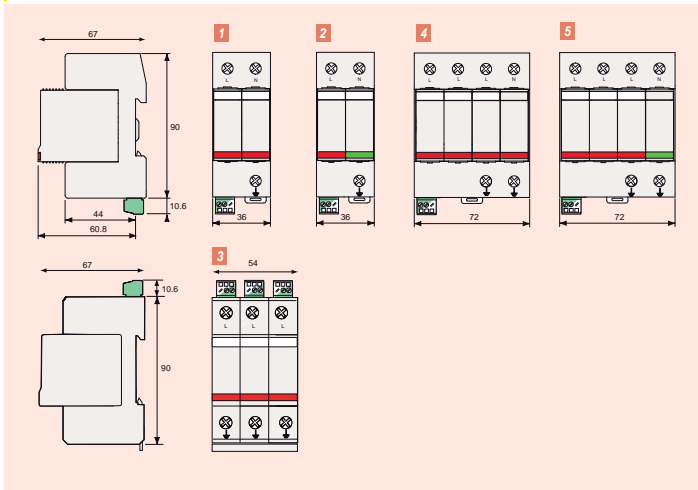
**Note 1:** Rating in compliance with nominal discharge current. In order to increase service continuity, higher rating can be used (up to 125 A). For further information, please consult product instructions..



# Type 2 AC power Multipolar Surge Protector

DS42  
DS43  
DS44

## Dimensions and Diagram



A31

The DS40 surge protectors are designed to be used in a multipolar configuration to protect single-phase, 3-phase or 3-phase+neutral AC networks. They are sometimes associated with dedicated N/PE surge protector based on gas tube technology (DS40G).

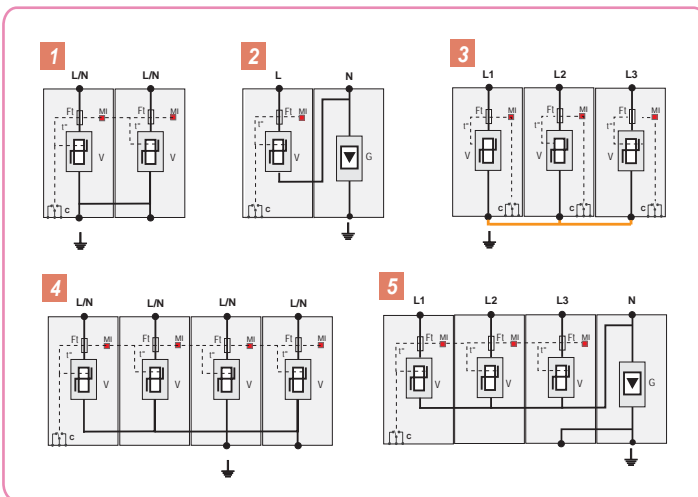
2 possible configurations :

### Common mode : CT1 configuration

DS40 surge protectors are connected between line(s), Neutral and protective wire (PE).

### Common and Differential mode : CT2 configuration

DS40 surge protectors are connected between line(s) and Neutral to provide differential mode protection. A specific surge protector DS40G is connected between Neutral and Protective wire (PE) for common mode protection. This configuration provides the highest efficiency.



Part Number	Network	AC system	Protection mode		I <sub>max</sub> total	U <sub>p</sub> L/PE	U <sub>p</sub> L/N	Diagram
			common	differential				
DS44-230/G	230/400 V 3-phase+N	TT-TN	●	●	40 kA	1.5 kV	1.25 kV	5
DS44-120/G	120/208 V 3-phase+N	TT-TN	●	●	40 kA	1.5 kV	0.9 kV	
DS44-400	230/400 V 3-phase+N	IT	●		160 kA	1.8 kV	-	4
DS44-230	230/400 V 3-phase+N	TN	●		160 kA	1.25 kV	-	
DS44-120	120/208 V 3-phase+N	TN	●		160 kA	0.9 kV	-	
DS43-400	400 V 3-phase	IT-TT-TNC	●		120 kA	1.8 kV	-	3
DS43-230	400 V 3-phase	TNC	●		120 kA	1.25 kV	-	
DS43-120	208 V 3-phase	TNC	●		120 kA	0.9 kV	-	
DS42-230/G	230 V Single phase	TT-TN	●	●	40 kA	1.5 kV	1.25 kV	2
DS42-120/G	120 V Single phase	TN	●	●	40 kA	1.5 kV	0.9 kV	
DS42-400	230V Single phase	IT	●		80 kA	1.8 kV	-	1
DS42-230	230V Single phase	TN	●		80 kA	1.25 kV	-	
DS42-120	120 V Single phase	TN	●		80 kA	0.9 kV	-	

\*) or DS4x-320x (e.g: DS44-320/G) in case of possible temporary voltages (bad quality AC voltage or supply by AC generator set).

