

RSP-T1T2-AC 7/...

1,2,3,4-pole lightning and surge arresters, $I_{imp} = 7 \text{ kA/pole}$

RSP-T1T2-AC 7/2P



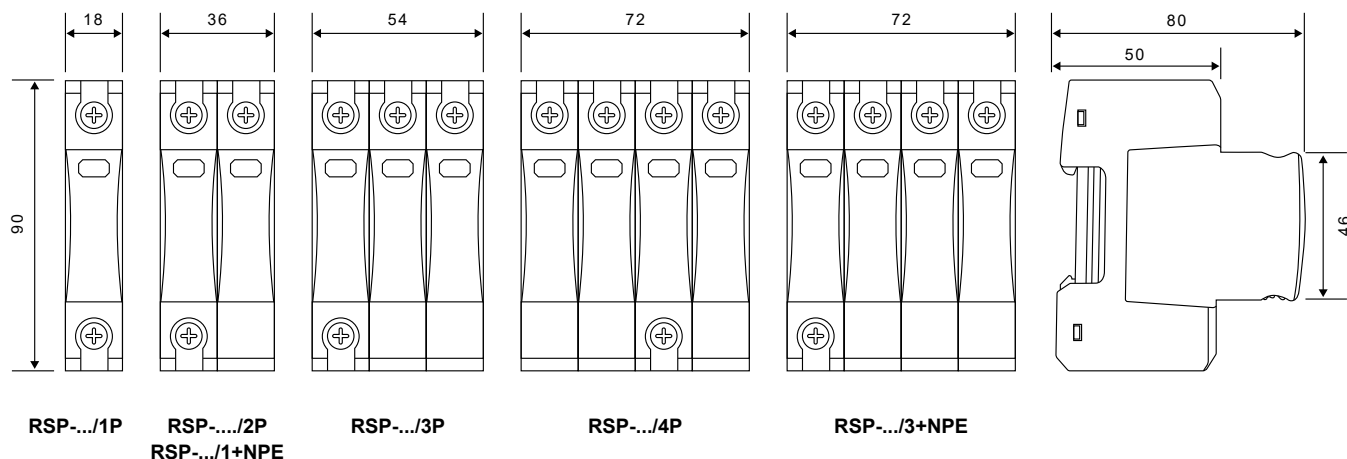
RSP-T1T2-AC 7/3+NPE



- Category IEC / EN / VDE: class I+II / type 1+2 / B+C
- Location of use: main-distribution boards (MB)
- Network systems: TT, TN-S, TN-C
- Modes of protection: L-N, N-PE
- Protection elements: MOV, MOV+GDT
- Cover: modular (replaceable module)
- Mechanical status indicator: green/red flag
- Compliance with standards: IEC 61643-11:2011, ISO 9001, CE, RoHS

Type of arrester		RSP-T1T2 -AC 7 /1P	RSP-T1T2 -AC 7 /2P	RSP-T1T2 -AC 7 /3P	RSP-T1T2 -AC 7 /4P	RSP-T1T2 -AC 7 /1+NPE	RSP-T1T2 -AC 7 /3+NPE
Electrical data							
Number of poles		1	2	3	4	2	4
Max. continuous operating voltage	U_c	275 V AC				255 V AC	
Nom. discharge current (8/20 μ s)	I_n	20 kA					
Max. discharge current (8/20 μ s)	I_{max}	50 kA					
Impulse discharge current (10/350 μ s)	I_{imp}	7 kA					
Voltage protection level	U_p	$\leq 1,5$ kV					
Response time	t_A	≤ 100 ns					
Max. backup fuse (L) (L-L')		200 A gL/gG 125 A gL/gG					
Follow current interrupt rating	I_{fi}	2 kA _{RMS} /255 V (fuse 32 A will not be triggered)					
TOV withstand (5 s)	U_T	355 V					
General data							
Ambient temperature (operating)	T_a	-40...+80 °C (parallel wiring) / -40...+60 °C (through wiring)					
Cross section of cables connected to terminals		35 mm ² (solid) / 50 mm ² (flexible)					
Terminal tightening moment		max. 4,5 Nm					
Mounting		direct mounting on 35 mm rail mount (EN 60715)					
Cover protection category		IP 20 (EN 60529)					
Cover material		thermoplastic; extinguishing degree UL 94 V-0					
Dimensions (L x W x H) [mm]		90 x 18 x 67	90 x 36 x 67	90 x 54 x 67	90 x 72 x 67	90 x 36 x 67	90 x 72 x 67
Weight		110 g	210 g	302 g	385 g	203 g	369 g

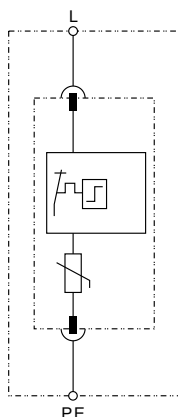
Dimensions



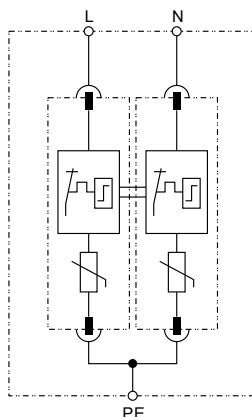
RSP-T1T2-AC 7/...

1,2,3,4-pole lightning and surge arresters, $I_{imp} = 7 \text{ kA/pole}$

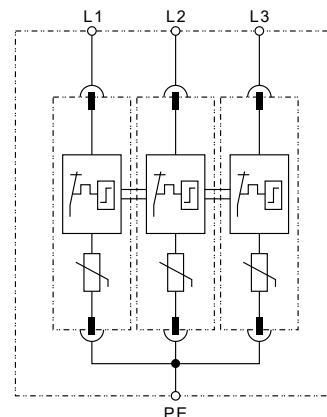
Connection diagrams



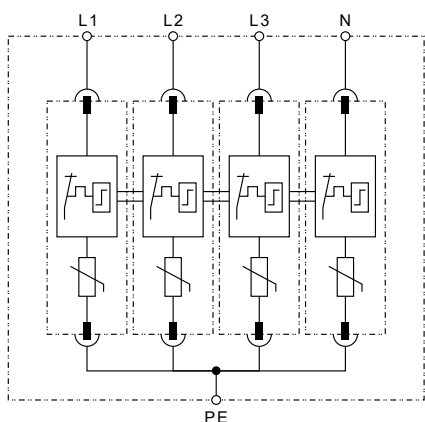
RSP-T1T2-AC 7/1P



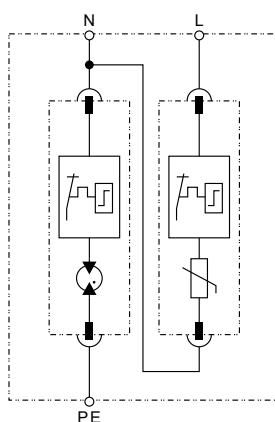
RSP-T1T2-AC 7/2P



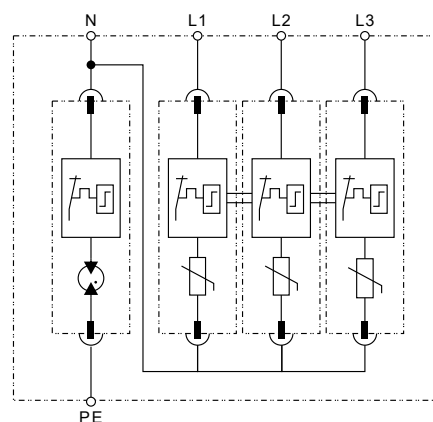
RSP-T1T2-AC 7/3P



RSP-T1T2-AC 7/4P



RSP-T1T2-AC 7/1+NPE



RSP-T1T2-AC 7/3+NPE

Applications:

- for protecting low voltage equipment against lightning and surge damages,
- for installation in conformity with the lightning protection zones concept at LPZ 0-1,
- designed according to IEC 61643-11:2011.

Features:

- class I+II SPDs have adopted hermetical GDT technology, high follow current extinguishing capability,
- extremely low voltage protection level,
- double terminals for parallel or series (V-shape) connection,
- multifunctional connection for conductors and busbars.

Series description:

- **RSP-T1T2-AC 7/...** is the class I+II SPD for low voltage power supply system,
- mainly installed at main distribution cabinet,
- it can discharging lightning current, there is no external spark thanks to the sealed sparkgap technology,
- it has strong follow current extinguishing capability, at 2 kA 255 V fuse 32 A will not be triggered,
- note: all SPD used in power supply system should always add backup fuse or CCT breaker.

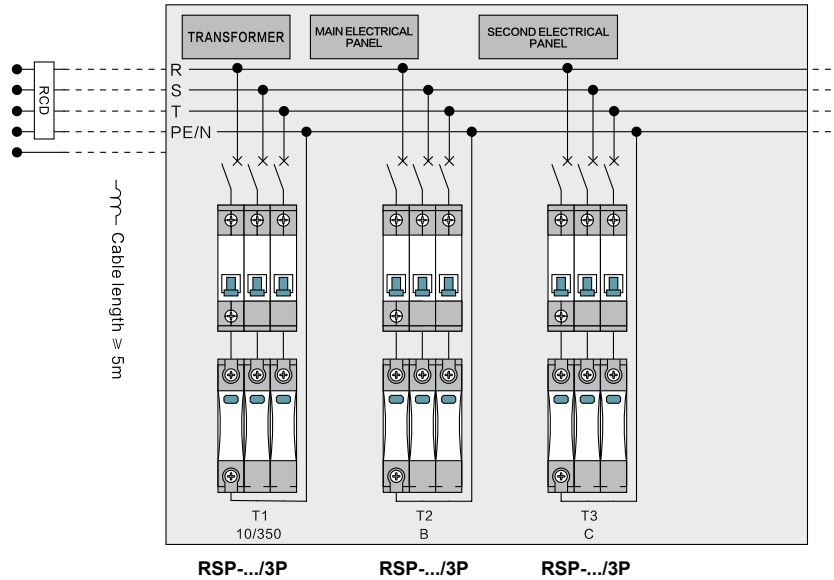
Types for reference:

- **RSP-.../1P**: combined SPD for single-phase TN-C systems and TN-C-S systems (if the PEN connection is established within 0,5 m),
- **RSP-.../2P**: combined SPD for single-phase TN-S systems,
- **RSP-.../3P**: combined SPD for three-phase TN-C systems and TN-C-S systems (if the PEN connection is established within 0,5 m),
- **RSP-.../4P**: combined SPD for three-phase TN-S systems,
- **RSP-.../1+NPE**: combined SPD for single-phase TT systems,
- **RSP-.../3+NPE**: combined SPD for three-phase TT systems.

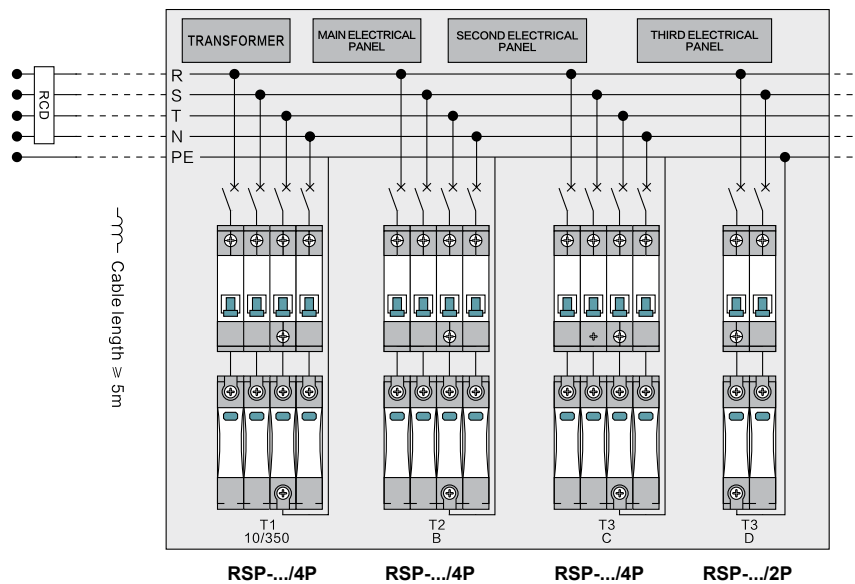
RSP-T1T2-AC 7/...

1,2,3,4-pole lightning and surge arresters, $I_{imp} = 7 \text{ kA/pole}$

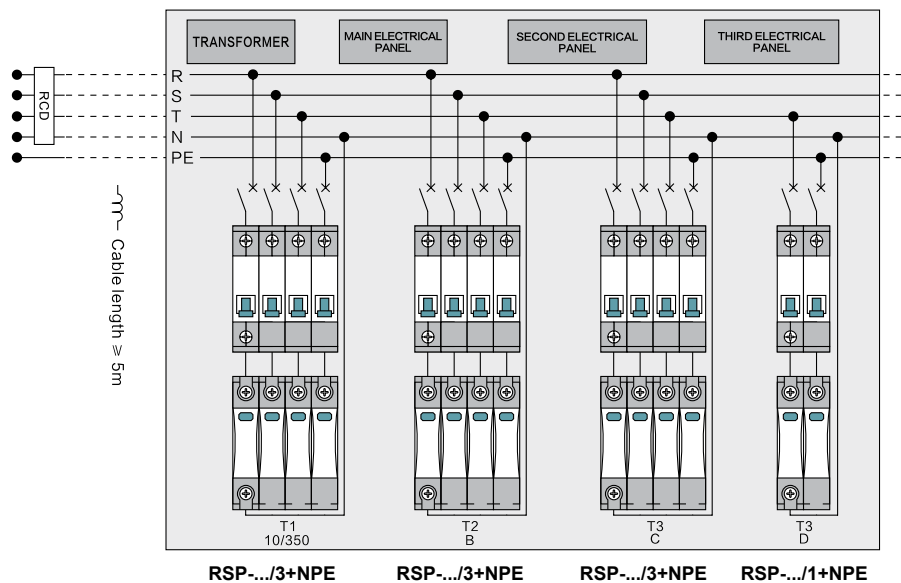
TN-C system



TN-S system



TT system



RSP-T1T2-AC 12.5/...

1,2,3,4-pole lightning and surge arresters, $I_{imp} = 12,5 \text{ kA/pole}$

RSP-T1T2-AC 12.5/1P



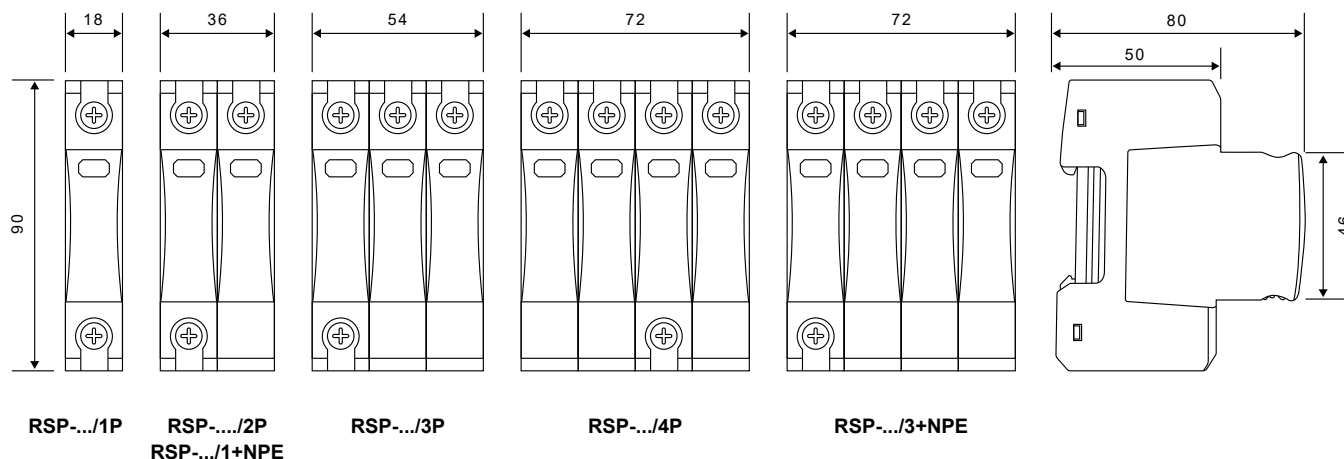
RSP-T1T2-AC 12.5/3P



- Category IEC / EN / VDE: class I+II / type 1+2 / B+C
- Location of use: main-distribution boards (MB)
- Network systems: TT, TN-S, TN-C
- Modes of protection: L-N, N-PE
- Protection elements: MOV, MOV+GDT
- Cover: modular (replaceable module)
- Mechanical status indicator: green/red flag
- Compliance with standards: IEC 61643-11:2011, ISO 9001, CE, RoHS

Type of arrester		RSP-T1T2 -AC 12.5 /1P	RSP-T1T2 -AC 12.5 /2P	RSP-T1T2 -AC 12.5 /3P	RSP-T1T2 -AC 12.5 /4P	RSP-T1T2 -AC 12.5 /1+NPE	RSP-T1T2 -AC 12.5 /3+NPE
Electrical data							
Number of poles		1	2	3	4	2	4
Max. continuous operating voltage	U_c	275 V AC				255 V AC	
Nom. discharge current (8/20 μ s)	I_n	30 kA					
Max. discharge current (8/20 μ s)	I_{max}	60 kA					
Impulse discharge current (10/350 μ s)	I_{imp}	12,5 kA					
Voltage protection level	U_p	≤ 2 kV				$\leq 1,5$ kV	
Response time	t_A	≤ 100 ns					
Max. backup fuse (L) (L-L')		200 A gL/gG 125 A gL/gG					
Follow current interrupt rating	I_{fi}	2 kA _{RMS} /255 V (fuse 32 A will not be triggered)					
TOV withstand (5 s)	U_T	355 V					
General data							
Ambient temperature (operating)	T_a	-40...+80 °C (parallel wiring) / -40...+60 °C (through wiring)					
Cross section of cables connected to terminals		35 mm ² (solid) / 50 mm ² (flexible)					
Terminal tightening moment		max. 4,5 Nm					
Mounting		direct mounting on 35 mm rail mount (EN 60715)					
Cover protection category		IP 20 (EN 60529)					
Cover material		thermoplastic; extinguishing degree UL 94 V-0					
Dimensions (L x W x H) [mm]		90 x 18 x 80	90 x 36 x 80	90 x 54 x 80	90 x 72 x 80	90 x 36 x 80	90 x 72 x 80
Weight		112 g	197 g	294 g	384 g	213 g	370 g

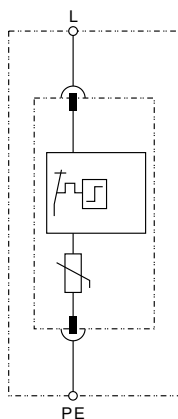
Dimensions



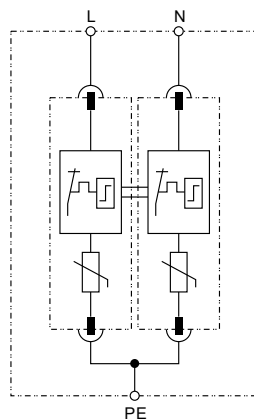
RSP-T1T2-AC 12.5/...

1,2,3,4-pole lightning and surge arresters, $I_{imp} = 12,5 \text{ kA/pole}$

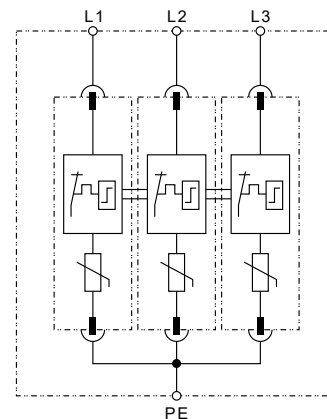
Connection diagrams



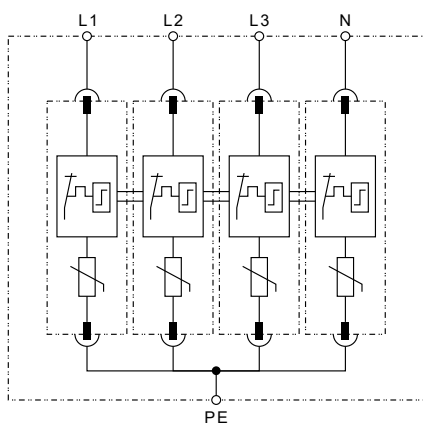
RSP-T1T2-AC 12.5/1P



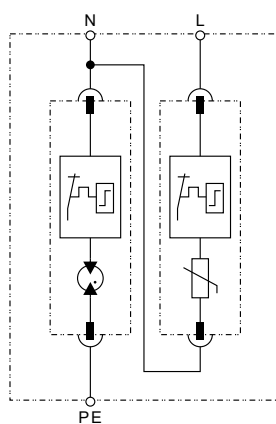
RSP-T1T2-AC 12.5/2P



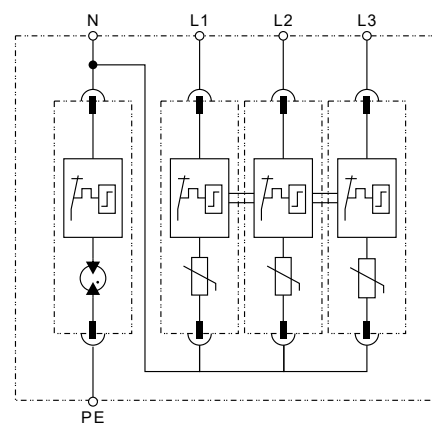
RSP-T1T2-AC 12.5/3P



RSP-T1T2-AC 12.5/4P



RSP-T1T2-AC 12.5/1+NPE



RSP-T1T2-AC 12.5/3+NPE

Applications:

- for protecting low voltage equipment against lightning and surge damages,
- for installation in conformity with the lightning protection zones concept at LPZ 0-1,
- designed according to IEC 61643-11:2011.

Features:

- class I+II SPDs have adopted hermetical GDT technology, high follow current extinguishing capability,
- extremely low voltage protection level,
- double terminals for parallel or series (V-shape) connection,
- multifunctional connection for conductors and busbars.

Series description:

- **RSP-T1T2-AC 12.5/...** is the class I+II SPD for low voltage power supply system,
- mainly installed at main distribution cabinet,
- it can discharging lightning current, there is no external spark thanks to the sealed sparkgap technology,
- it has strong follow current extinguishing capability, at 2 kA 255 V fuse 32 A will not be triggered,
- note: all SPD used in power supply system should always add backup fuse or CCT breaker.

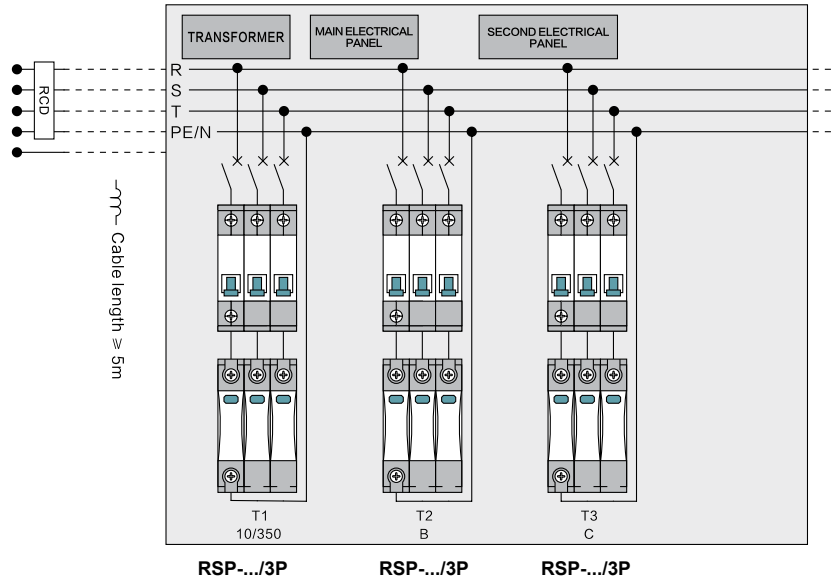
Types for reference:

- **RSP-.../1P**: combined SPD for single-phase TN-C systems and TN-C-S systems (if the PEN connection is established within 0,5 m),
- **RSP-.../2P**: combined SPD for single-phase TN-S systems,
- **RSP-.../3P**: combined SPD for three-phase TN-C systems and TN-C-S systems (if the PEN connection is established within 0,5 m),
- **RSP-.../4P**: combined SPD for three-phase TN-S systems,
- **RSP-.../1+NPE**: combined SPD for single-phase TT systems,
- **RSP-.../3+NPE**: combined SPD for three-phase TT systems.

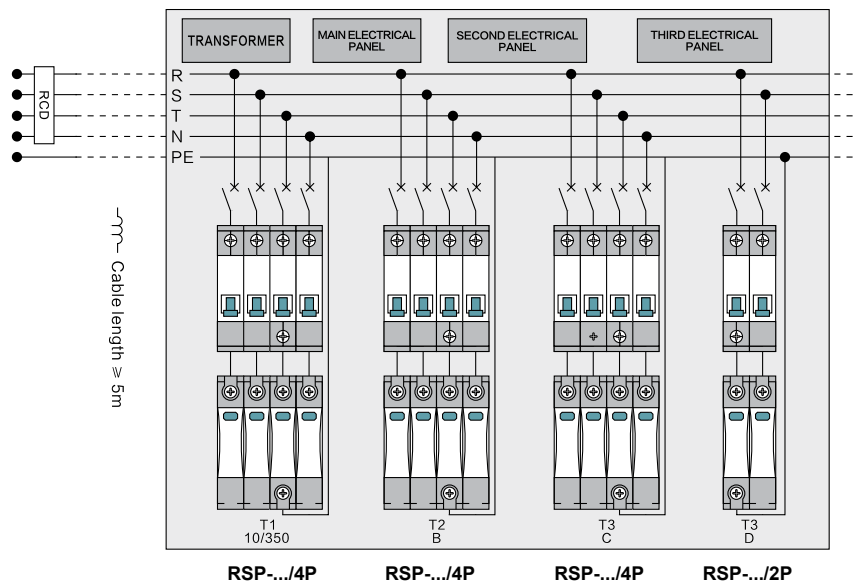
RSP-T1T2-AC 12.5/...

1,2,3,4-pole lightning and surge arresters, $I_{imp} = 12,5 \text{ kA/pole}$

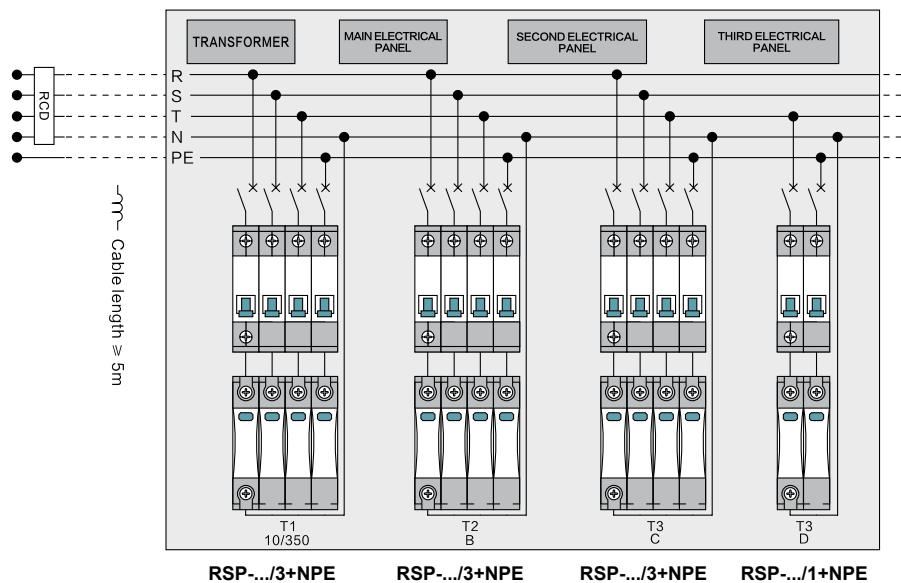
TN-C system



TN-S system



TT system



RSP-T2-AC/...

1,2,3,4-pole lightning and surge arresters, $I_{max} = 40 \text{ kA/pole}$

RSP-T2-AC/2P



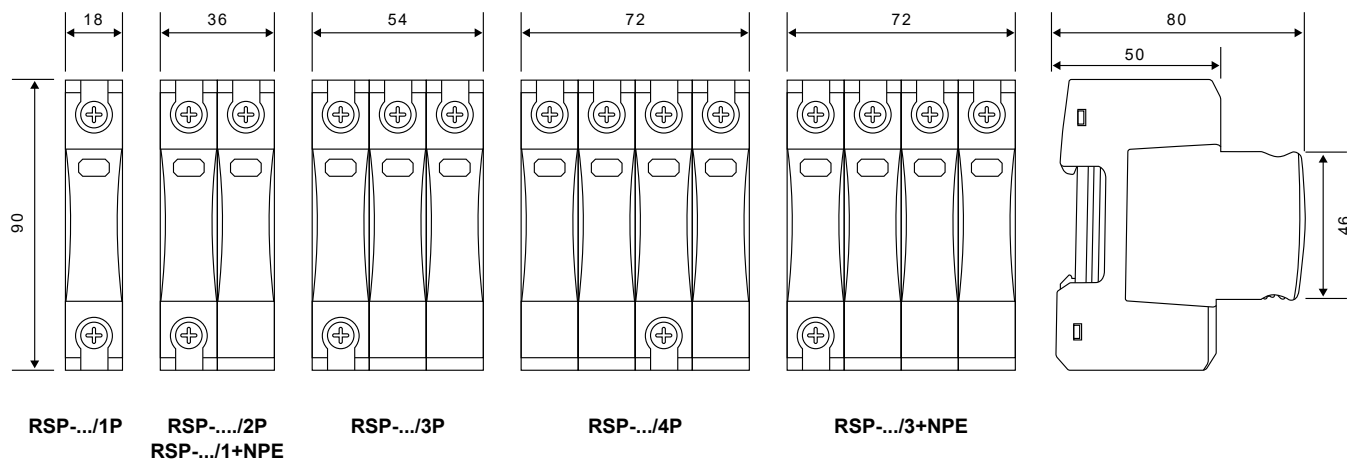
RSP-T2-AC/3P



- Category IEC / EN / VDE: class II / type 2 / C
- Location of use: main-distribution boards (MB)
- Network systems: TN
- Modes of protection: L-N, N-PE
- Protection elements: MOV, MOV+GDT
- Cover: modular (replaceable module)
- Mechanical status indicator: green/red flag
- Compliance with standards: IEC 61643-11:2011, ISO 9001, CE, RoHS

Type of arrester	RSP-T2 -AC/1P	RSP-T2 -AC/2P	RSP-T2 -AC/3P	RSP-T2 -AC/4P	RSP-T2 -AC/1+NPE	RSP-T2 -AC/3+NPE
Electrical data						
Number of poles	1	2	3	4	2	4
Max. continuous operating voltage U_c	275 V AC				255 V AC	
Nom. discharge current (8/20 μ s) I_n	20 kA					
Max. discharge current (8/20 μ s) I_{max}	40 kA					
Voltage protection level U_p	$\leq 1,5$ kV					
Response time t_A	≤ 25 ns					
Max. backup fuse	125 A gL/gG					
General data						
Ambient temperature (operating) T_a	-40...+80 °C					
Cross section of cables connected to terminals	1,5...25 mm ² (solid) / 35 mm ² (flexible)					
Terminal tightening moment	max. 4,5 Nm					
Mounting	direct mounting on 35 mm rail mount (EN 60715)					
Cover protection category	IP 20 (EN 60529)					
Cover material	thermoplastic; extinguishing degree UL 94 V-0					
Dimensions (L x W x H) [mm]	90 x 18 x 67	90 x 36 x 67	90 x 54 x 67	90 x 72 x 67	90 x 36 x 67	90 x 72 x 67
Weight	120 g	207 g	303 g	376 g	205 g	376 g

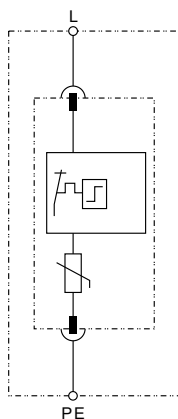
Dimensions



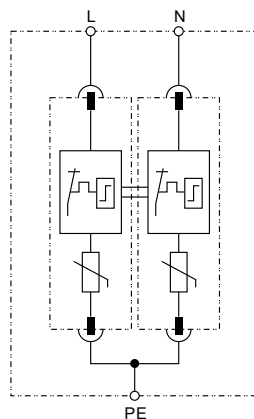
RSP-T2-AC/...

1,2,3,4-pole lightning and surge arresters, $I_{max} = 40 \text{ kA/pole}$

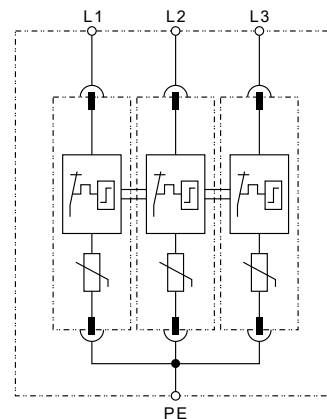
Connection diagrams



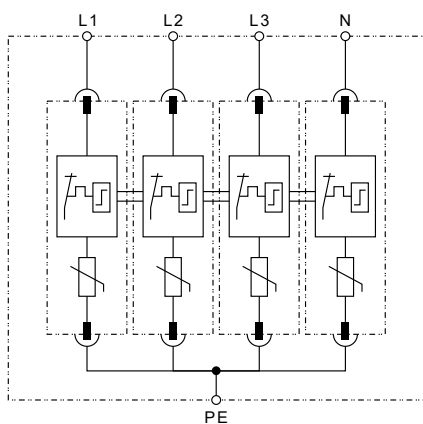
RSP-T2-AC/1P



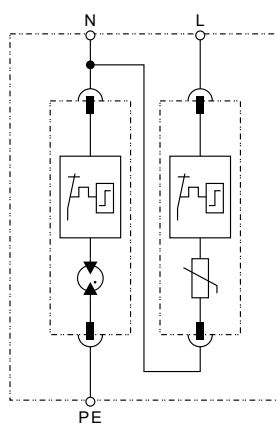
RSP-T2-AC/2P



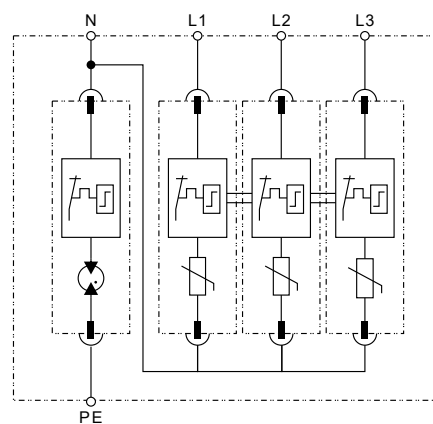
RSP-T2-AC/3P



RSP-T2-AC/4P



RSP-T2-AC/1+NPE



RSP-T2-AC/3+NPE

Applications:

- for protecting low voltage equipment against lightning and surge damages,
- for installation in conformity with the lightning protection zones concept at LPZ 0-1,
- designed according to IEC 61643-11:2011.

Features:

- class II SPDs have adopted hermetical GDT technology, high follow current extinguishing capability,
- extremely low voltage protection level,
- double terminals for parallel or series (V-shape) connection,
- multifunctional connection for conductors and busbars.

Series description:

- **RSP-T2-AC/...** is the class II SPD for low voltage power supply system,
- mainly installed at main distribution cabinet,
- it can discharging lightning current, there is no external spark thanks to the sealed sparkgap technology,
- it has strong follow current extinguishing capability, at 2 kA 255 V fuse 32 A will not be triggered,
- note: all SPD used in power supply system should always add backup fuse or CCT breaker.

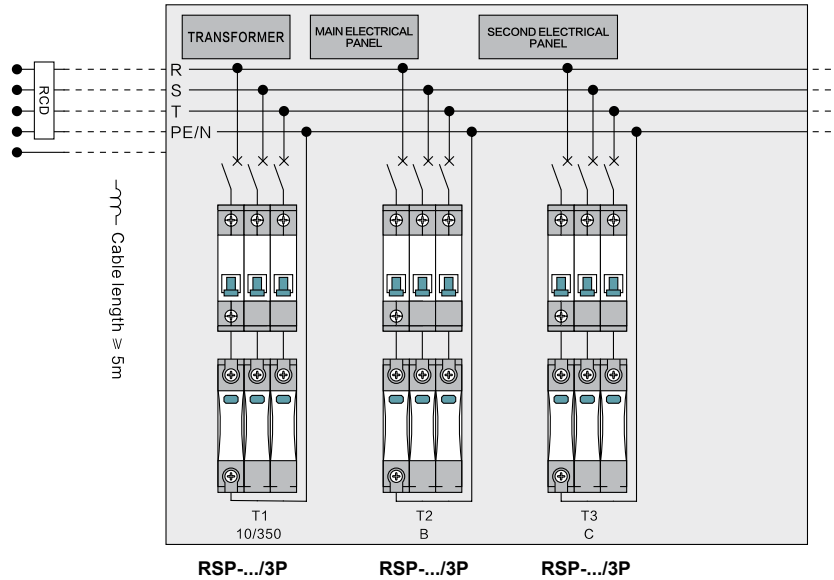
Types for reference:

- **RSP-.../1P**: combined SPD for single-phase TN-C systems and TN-C-S systems (if the PEN connection is established within 0,5 m),
- **RSP-.../2P**: combined SPD for single-phase TN-S systems,
- **RSP-.../3P**: combined SPD for three-phase TN-C systems and TN-C-S systems (if the PEN connection is established within 0,5 m),
- **RSP-.../4P**: combined SPD for three-phase TN-S systems,
- **RSP-.../1+NPE**: combined SPD for single-phase TT systems,
- **RSP-.../3+NPE**: combined SPD for three-phase TT systems.

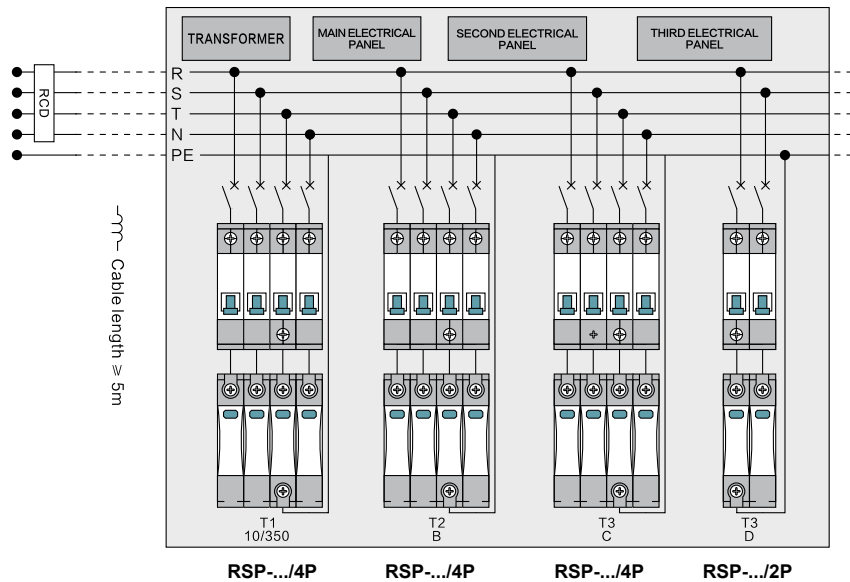
RSP-T2-AC/...

1,2,3,4-pole lightning and surge arresters, $I_{max} = 40 \text{ kA/pole}$

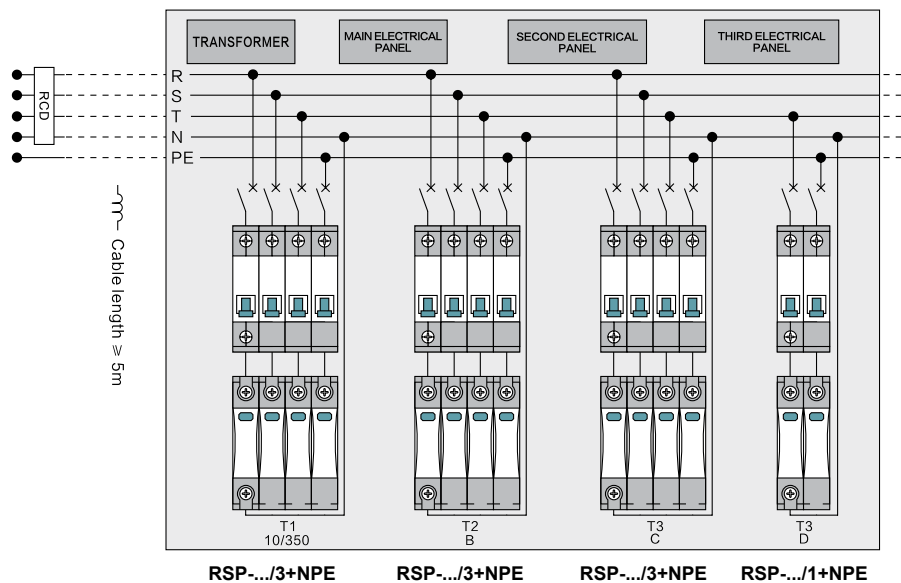
TN-C system



TN-S system



TT system



RSP-T...-DC.../...

2,3-pole surge arresters for photovoltaic systems, $I_{max} = 40, 50 \text{ kA/pole}$

RSP-T1T2-DC 9/3P



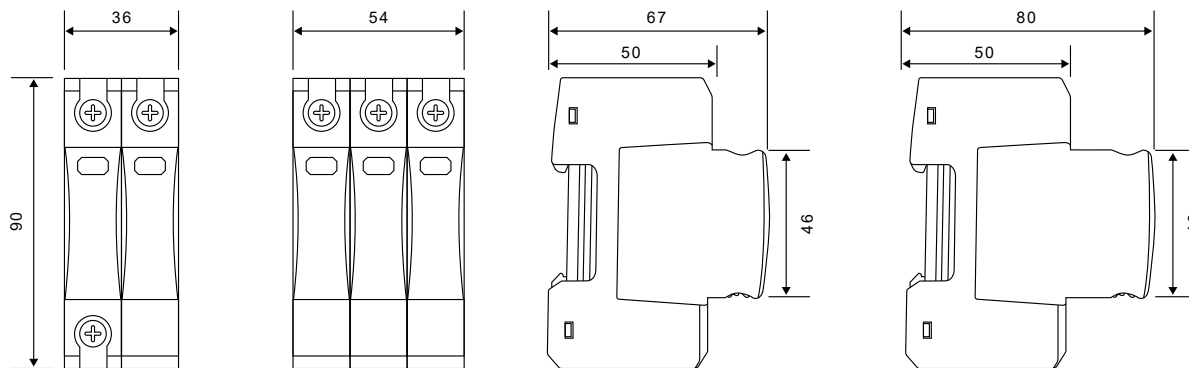
RSP-T2-DC/2P



- Category IEC / EN / VDE: class I+II, II / type 1+2, 2 / B+C, C photovoltaic systems (connection box, inverter)
- Location of use: (+)-PE, (-)-PE, (+)-(-)
- Modes of protection: MOV
- Protection elements: modular (replaceable module)
- Cover: green/red flag
- Mechanical status indicator: IEC 61643-31:2018, ISO 9001, CE, RoHS
- Compliance with standards:

Type of arrester		RSP-T1T2 -DC 9/3P	RSP-T1T2 -DC 6.25/3P	RSP-T2 -DC/2P	RSP-T2 -DC/3P
Electrical data					
Number of poles		3	3	2	3
Max. continuous operating voltage	U _c	1000 V DC			
Nom. discharge current (8/20 μs)	I _n	20 kA		20 kA	
Max. discharge current (8/20 μs)	I _{max}	50 kA		40 kA	
Lightning impulse current (10/350 μs)	I _{imp}	7 kA		–	
Impulse discharge current (10/350 μs)	I _{imp}	9 kA	6,25 kA	–	
Total current (10/350 μs)	I _{total}	18 kA	12,5 kA	–	
Voltage protection level	U _p	4,5 kV		4 kV	
Response time	t _A	≤ 100 ns		≤ 25 ns	
Max. backup fuse (L) (L-L')		200 A gL/gG 125 A gL/gG		– 125 A gL/gG	
General data					
Ambient temperature (operating)	T _a	-40...+80 °C (parallel wiring) / -40...+60 °C (through wiring)		-40...+80 °C	
Cross section of cables connected to terminals		35 mm ² (solid) / 50 mm ² (flexible)		1,5...25 mm ² (solid) / 35 mm ² (flexible)	
Terminal tightening moment		max. 4,5 Nm			
Mounting		direct mounting on 35 mm rail mount (EN 60715)			
Cover protection category		IP 20 (EN 60529)			
Cover material		thermoplastic; extinguishing degree UL 94 V-0			
Dimensions (L x W x H) [mm]		90 x 54 x 80	90 x 54 x 67	90 x 36 x 67	90 x 54 x 67
Weight		288 g	288 g	206 g	283 g

Dimensions



RSP-T2-DC/2P

RSP-T1T2-DC 9/3P
RSP-T1T2-DC 6.25/3P
RSP-T2-DC/3P

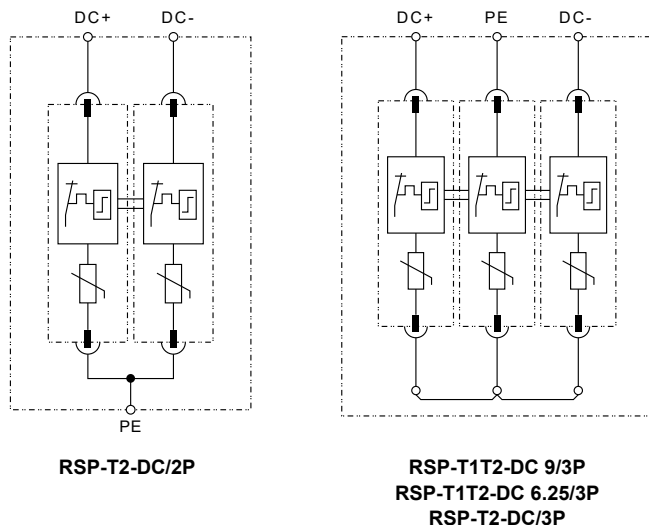
RSP-T1T2-DC 6.25/3P
RSP-T2-DC/2P
RSP-T2-DC/3P

RSP-T1T2-DC 9/3P

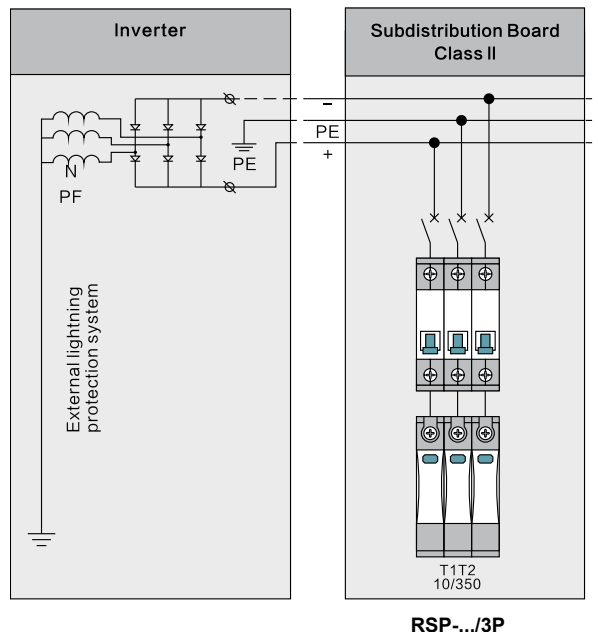
RSP-T...-DC.../...

2,3-pole surge arresters for photovoltaic systems, $I_{max} = 40, 50 \text{ kA/pole}$

Connection diagrams



TN-S system



Applications:

- for protecting low voltage equipment against lightning and surge damages,
- for installation in conformity with the lightning protection zones concept at LPZ 0-1,
- designed according to IEC 61643-31:2018.

Features:

- surge protective devices protect against lightning surge voltages in solar system (photovoltaic power supply system),
- these units must be installed in parallel on the DC networks to be protected and provide common and different modes protection,
- its installed location are recommended at both ends of the DC power supply line (solar panel side and inverter/converter side), especially if the line routing is external and long.

Series description:

- **RSP-T...-DC.../...** is the class I+II, II SPD for low voltage power supply system,
- mainly installed at main distribution cabinet,
- SPD are equipped with high energy MOVs equipped with specific thermal disconnectors and related failure indicators,
- note: all SPD used in power supply system should always add backup fuse or CCT breaker.

Important notes:

- the device may only be connected and installed by an electrically skilled person conforming to notional standards and safety regulations,
- fous fuse must be installed at the upstream of the SPD or the lightning arrester for power supply system to make sure that the protected system has double protection,
- the value of the fuse used in a SPD system should be conformed to:
 - the value of the fuse should not be larger than the max. withstand capacity of the SPD's backup fuse value,
 - under the status of the max. current in the power supply & close loop circuit available current, the fuse should aable to disconnect when overloaded or short-circuited,
 - thken the above into consideration, the fuse should be able to conduct the maximum surge discharge of the SPD,
- most fuse & circuit breaker manufacturers can quote/have quoted 8/20 μs and/or 10/35 μs current specification, therefore, installers can specify the type accordingly with the SPD surge & lightning current requirement.