

Single Pole SPD

SP...-S



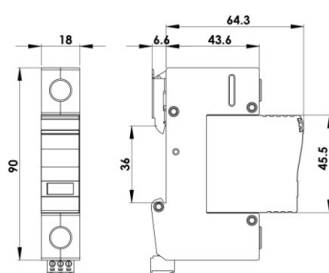
- KEMA certified T2 SPD with high energy MOV technology
- High reliability due to global patented thermally protected with special arc-extinguish device (TPAE technology).
- High surge current discharge capacity up to 40kA 8/20
- Pluggable module for easy replacement
- Degradation indication & optional remote signal contact.
- Comply with IEC/EN 61643-11, UL 1449 4th, IEEE C62.41, CSA C22.2



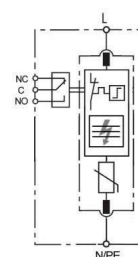
Model		SP150-S	SP275-S	SP320-S	SP385-S
Compliance		EN/IEC 61643-11, UL 1449 4 th			
Category IEC/EN/UL		Class II / T2 / Type 1ca			
Max. Continuous Operating Voltage (AC/DC)	U _c	150V / 200V	275V / 350V	320V / 420V	385V / 505V
Technology		High energy MOV technology TPAE technology (patented)			
Ports/Protection Mode		1 / L-PE or L-N or N-PE			
Nominal Discharge Current (8/20μs)	I _n	20kA			
Max. Discharge Current (8/20μs)	I _{max}	40kA			
Voltage Protection Rating 6kV/3kA UL 1449	VPR	≤0.7kV	≤1.0kV	≤1.2kV	≤1.5kV
Voltage Protection Level @I _n IEC61643	U _p	≤0.8kV	≤1.4kV	≤1.5kV	≤1.8kV
Temporary Overvoltage TOV —Withstand Mode	U _{toV}	174V/5s	337V/5s	337V/5s	403V/5s
Residual Current	I _{PE}	<0.1mA			
Short Circuit Current Rating per UL 1449	I _{scCR}	200kArms			
Short-Circuit Current Rating per IEC 61643	I _{sc}	10kArms			
Response Time	t _A	≤25ns			
Backup Fuse (only required if not already provided in mains)		125A gL/gG			
Environment		Temperature Range: - 40°C ~ +85°C; Humidity: ≤95%; Altitude: ≤2000m			
Cross-Section of Connection Wire		Single-strand 35mm ² ; multi-strand 25mm ²			
Mounting		35mm DIN-rail in accordance with EN 50022/DIN46277-3			
Enclosure Material		thermoplastic; extinguishing degree UL94 V-0			
Degree of Protection		IP20			
Installation Width		1 module, DIN 43880			
Failure Indication /Status		RED- Failure			
Remote Alarm Contact		Yes			
Approvals, certification		KEMA, CE			
Additional Data for Remote Alarm Contacts					
Remote Alarm Contact Type		Isolated Form C			
Switching Capability U _n /I _n		AC: 250V/0.5A; DC: 250V/0.1A; 125V/0.2A; 75V/0.5A			
Max. Size of Connecting Wire		Max. 1.5mm ² (or # 16AWG)			

Note: Please see Page 29 and 30 for prewired multi-pole combination.

■ Dimension Drawing



■ Basic Circuit Diagram



Single Pole SPD

▪ TPAE Patent ▪ VT Technology

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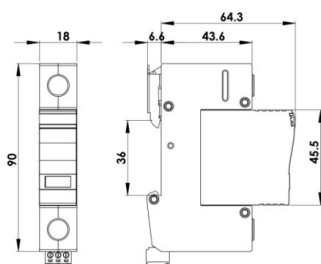
- KEMA certified T2 SPD with VT technology to eliminate leakage current & follow current
- High surge current discharge capacity up to 40kA 8/20μs
- Patented thermal-disconnector / arc-extinguish (TPAE) technology inside
- Plugable module for easy replacement
- Better reliability and robustness & TOV (temporary over-voltage) withstand performance
- Degradation indication & optional remote signal contact.
- Low voltage protection level
- Comply with IEC/EN 61643-11, UL 1449 4th, IEEE C62.41, CSA C22.2



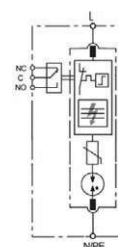
Model		SP275VT-S	SP320VT-S
Compliance		EN/IEC 61643-11, UL 1449 4 th	
Category IEC/EN/UL		Class II / T2 / Type 1ca	
Max. Continuous Operating Voltage (AC/DC)	U _c	275V / 350V	320V / 420V
Technology		VT technology TPAE technology(patented)	
Ports/Protection Mode		1 / L-PE or L-N or N-PE	
Nominal Discharge Current (8/20μs)	I _n	20kA	
Max. Discharge Current (8/20μs)	I _{max}	40kA	
Voltage Protection Level @I _n IEC61643	U _p	≤1.4kV	≤1.5kV
Temporary Overvoltage TOV —Withstand Mode	U _{TOV}	442V/120min	
Residual Current	I _{PE}	No	
Follow Current	I _f	No	
Short-Circuit Current Rating per IEC 61643	I _{sc}	10kArms	
Response Time	t _A	≤25ns	
Backup Fuse (only required if not already provided in mains)		125A gL/gG	
Environment		Temperature Range: - 40°C ~ +85°C; Humidity: ≤95%; Altitude: ≤2000m	
Cross-Section of Connection Wire		Single-strand 35mm ² ; multi-strand 25mm ²	
Mounting		35mm DIN-rail in accordance with EN 50022/DIN46277-3	
Enclosure Material		thermoplastic; extinguishing degree UL94 V-0	
Degree of Protection		IP20	
Installation Width		1 module, DIN 43880	
Failure Indication /Status		RED- Failure	
Remote Alarm Contact		Yes	
Approvals, certification		KEMA, CE	
Additional Data for Remote Alarm Contacts			
Remote Alarm Contact Type		Isolated Form C	
Switching Capability U _r /I _n		AC: 250V/0.5A; DC: 250V/0.1A; 125V/0.2A; 75V/0.5A	
Max. Size of Connecting Wire		Max. 1.5mm ² (or # 16AWG)	

Note: Please see Page 29 and 30 for prewired multi-pole combination.

■ Dimension Drawing



■ Basic Circuit Diagram



Single Pole SPD

SP...T-S



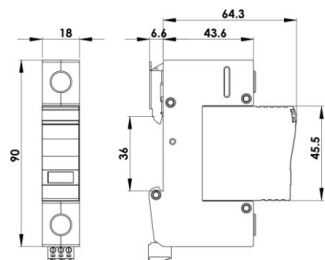
- KEMA certified Class II SPD for NPE protection
- High reliability due to global patented thermally protected with special arc-extinguish device (TPAE technology)
- High surge current discharge capacity up to 40kA 8/20μs
- Pluggable module for easy replacement
- Degradation failure indication & optional remote signal contact
- Comply with IEC/EN 61643-11, UL 1449 4th, IEEE C62.41, CSA C22.2



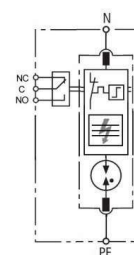
Model		SP255T-S
Compliance		EN/IEC 61643-11, UL 1449 4 th
Category IEC/EN/UL		Class II / T2 / Type 1ca
Max. Continuous Operating Voltage (AC/DC)	U _c	255V
Technology		GDT technology TPAE technology (patented)
Ports/Protection Mode		1 / N-PE
Nominal Discharge Current (8/20μs)	I _n	20kA
Max. Discharge Current (8/20μs)	I _{max}	50kA
Voltage Protection Rating @6kV/3kA UL 1449	VPR	≤0.9kV
Voltage Protection Level @1.2/50μs IEC61643	U _p	≤1.5kV
Temporary Overvoltage TOV —Withstand Mode	U _{tov}	1200V/200ms
Residual Current	I _{PE}	No
Follow Current Interrupt Rating	I _{fi}	100A@255Vac
Response Time	t _A	≤100ns
Environment		Temperature Range: -40°C ~ +85°C; Humidity: ≤95%; Altitude: ≤2000m
Cross-Section of Connection Wire		Single-strand 35mm ² ; multi-strand 25mm ²
Mounting		35mm DIN-rail in accordance with EN 50022/DIN46277-3
Enclosure Material		thermoplastic; extinguishing degree UL94 V-0
Degree of Protection		IP20
Installation Width		1 module, DIN 43880
Failure Indication /Status		RED- Failure
Remote Alarm Contact		Yes
Approvals, certification		KEMA, CE
Additional Data for Remote Alarm Contacts		
Remote Alarm Contact Type		Isolated Form C
Switching Capability U _r /I _n		AC: 250V/0.5A; DC: 250V/0.1A; 125V/0.2A; 75V/0.5A
Max. Size of Connecting Wire		Max. 1.5mm ² (or # 16AWG)

Note: Please see Page 29 and 30 for prewired multi-pole combination.

■ Dimension Drawing




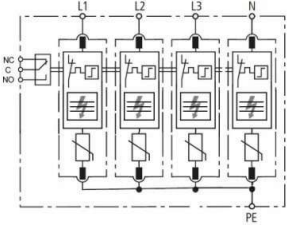
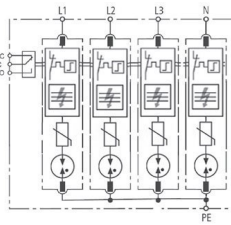
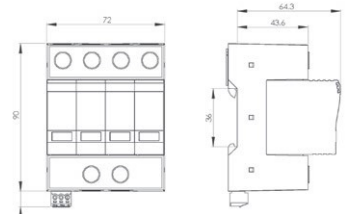

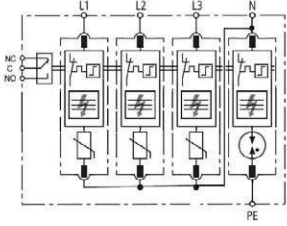
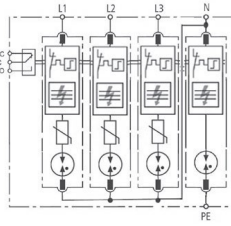
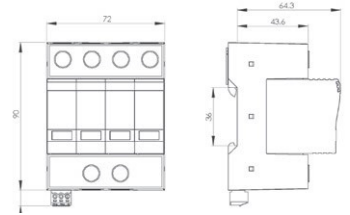

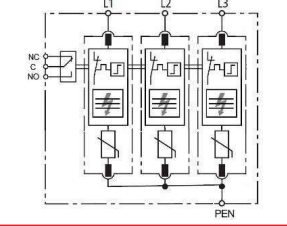
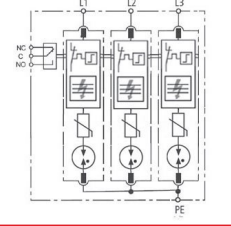
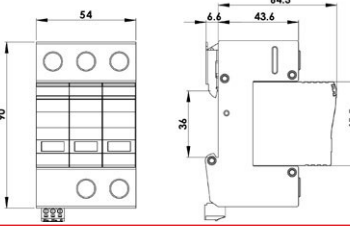

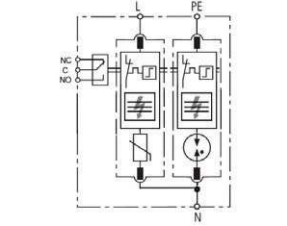
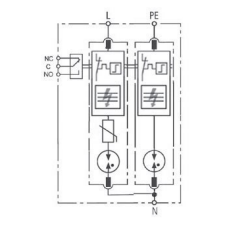
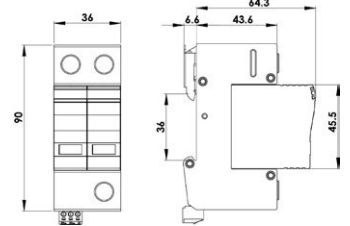
■ Basic Circuit Diagram



Prewired Multi-pole SPD

Part No.	Pole	Power System	Nominal Voltage (phase voltage) U_n	Max. Operating Voltage U_c	Max. Discharge Current (8/20 μ s) I_{max}	Voltage Protection Level U_p	Diagram
SP150/2P-S	2	Single phase 2W+G	120~127Vac	150Vac	40kA	L/N-G: 0.8kV	5
SP275/2P-S	2	Single phase 2W+G	220~230Vac	275Vac	40kA	L/N-G: 1.4kV	5
SP320/2P-S	2	Single phase 2W+G	240Vac	320Vac	40kA	L/N-G: 1.5kV	5
SP385/2P-S	2	Single phase 2W+G	240~277Vac	385Vac	40kA	L/N-G: 1.8kV	5
SP275VT/2P-S	2	Single phase 2W+G	220~230Vac	275Vac	40kA	L/N-G: 1.4kV	5
SP320VT/2P-S	2	Single phase 2W+G	240Vac	320Vac	40kA	L/N-G: 1.5kV	5
SP150/PN-S	2	Single phase 2W+G	120~127Vac	150Vac	40kA	L-N: 0.8kV, N-PE: 1.5kV	4
SP275/PN-S	2	Single phase 2W+G	220~230Vac	275Vac	40kA	L-N: 1.4kV, N-PE: 1.5kV	4
SP320/PN-S	2	Single phase 2W+G	240Vac	320Vac	40kA	L-N: 1.5kV, N-PE: 1.5kV	4
SP385/PN-S	2	Single phase 2W+G	240~277Vac	385Vac	40kA	L-N: 1.8kV, N-PE: 1.5kV	4
SP275VT/PN-S	2	Single phase 2W+G	220~230Vac	275Vac	40kA	L-N: 1.4kV, N-PE: 1.5kV	4
SP320VT/PN-S	2	Single phase 2W+G	240Vac	320Vac	40kA	L-N: 1.5kV, N-PE: 1.5kV	4
SP150/3P-S	3	Three phase 3W+G	120~127Vac	150Vac	40kA	L-G: 0.8kV	3
SP275/3P-S	3	Three phase 3W+G	220~230Vac	275Vac	40kA	L-G: 1.4kV	3
SP320/3P-S	3	Three phase 3W+G	240Vac	320Vac	40kA	L-G: 1.5kV	3
SP385/3P-S	3	Three phase 3W+G	240~277Vac	385Vac	40kA	L-G: 1.8kV	3
SP275VT/3P-S	3	Three phase 3W+G	220~230Vac	275Vac	40kA	L-G: 1.4kV	3
SP320VT/3P-S	3	Three phase 3W+G	240Vac	320Vac	40kA	L-G: 1.5kV	3
SP150/3PN-S	4	Three phase 4W+G	120~127Vac	150Vac	40kA	L-N: 0.8kV, N-PE: 1.5kV	2
SP275/3PN-S	4	Three phase 4W+G	220~230Vac	275Vac	40kA	L-N: 1.4kV, N-PE: 1.5kV	2
SP320/3PN-S	4	Three phase 4W+G	240Vac	320Vac	40kA	L-N: 1.5kV, N-PE: 1.5kV	2
SP385/3PN-S	4	Three phase 4W+G	240~277Vac	385Vac	40kA	L-N: 1.8kV, N-PE: 1.5kV	2
SP275VT/3PN-S	4	Three phase 4W+G	220~230Vac	275Vac	40kA	L-N: 1.4kV, N-PE: 1.5kV	2
SP320VT/3PN-S	4	Three phase 4W+G	240Vac	320Vac	40kA	L-N: 1.5kV, N-PE: 1.5kV	2
SP150/4P-S	4	Three phase 4W+G	120~127Vac	150Vac	40kA	L/N-G: 0.8kV	1
SP275/4P-S	4	Three phase 4W+G	220~230Vac	275Vac	40kA	L/N-G: 1.4kV	1
SP320/4P-S	4	Three phase 4W+G	240Vac	320Vac	40kA	L/N-G: 1.5kV	1
SP385/4P-S	4	Three phase 4W+G	240~277Vac	385Vac	40kA	L/N-G: 1.8kV	1
SP275VT/4P-S	4	Three phase 4W+G	220~230Vac	275Vac	40kA	L/N-G: 1.4kV	1
SP320VT/4P-S	4	Three phase 4W+G	240Vac	320Vac	40kA	L/N-G: 1.5kV	1

T1
T2
T3

Diagram	Basic Circuit Diagram (MOV/GDT technology)	Basic Circuit Diagram (VT technology)	Dimension Drawing
<p>1) 4+0</p> 			
<p>2) 3+1</p> 			
<p>3) 3+0</p> 			
<p>4) 1+1</p> 			
<p>5) 2+0</p> 