

Single Pole SPD

U_{oc} 20kV

V20...-S



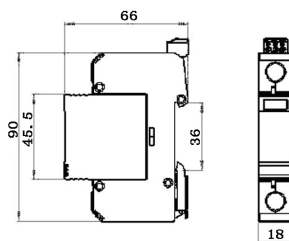
- T3 SPD with high energy MOV technology
- Max discharge current up to 20kA 8/20μs and open circuit voltage U_{oc} to 20kV.
- Pluggable module for easy replacement
- Reliable thermal disconnecter to be fail-safe.
- Degradation failure indication & optional remote signal contact.
- Comply with IEC/EN 61643-11, UL 1449 4th, IEEE C62.41, CSA C22.2



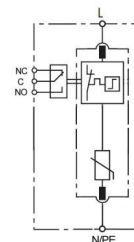
Model		V20/75-S	V20/150-S	V20/275-S	V20/320-S	V20/385-S	V20/420-S	V20/440-S	V20/550-S
Compliance		EN/IEC 61643-11/ UL 1449 4 th							
Category IEC/EN/UL		Class III / T3 / Type 1ca							
Max. Continuous Operating Voltage (AC/DC)	U _c	75V / 100V	150V / 200V	275V / 370V	320V / 420V	385V / 500V	420V / 560V	440V / 585V	550V / 710V
Technology		MOV Technology Thermal disconnecter							
Ports/Protection Mode		1 / L-PE or L-N or N-PE							
Nominal Discharge Current (8/20μs)	I _n	10kA							
Max. Discharge Current (8/20μs)	I _{max}	20kA							
Open Circuit Voltage (1.2/50μs)	U _{oc}	20kV							
Voltage Protection Rating 6kV/3kA UL 1449	VPR	≤0.4kV	≤0.7kV	≤1.0kV	≤1.0kV	≤1.2kV	≤1.3kV	≤1.4kV	≤1.8kV
Voltage Protection Level @I _n IEC 61643-11	U _p	≤0.4kV	≤0.7kV	≤1.2kV	≤1.3kV	≤1.4kV	≤1.6kV	≤1.6kV	≤2.0kV
Temporary Overvoltage TOV —Withstand Mode	U _{toV}	92V/5s	175V/5s	335V/5s	335V/5s	403V/5s	504V/5s	580V/5s	697V/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)		100A 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		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 35 and 36 for prewired multi-pole combination.

■ Dimension Drawing



■ Basic Circuit Diagram



T1

T2

T3

Single Pole SPD

■ N-PE Module ■ U_{oc} 20kV

T20... -S



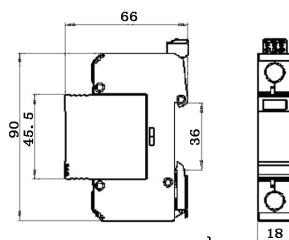
- T3 SPD for NPE mode protection with high energy GDT technology
- Max discharge current up to 20kA 8/20 μ s and open circuit voltage U_{oc} to 20kV.
- Pluggable module for easy replacement
- Reliable thermal disconnecter to be fail-safe.
- Degradation failure indication & optional remote signal contact.
- Comply with IEC/EN 61643-11, UL 1449 4th, IEEE C62.41



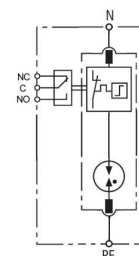
Model		T20/150-S	T20/255-S
Compliance		EN/IEC 61643-11, UL 1449 4 th	
Category IEC/EN/UL		Class III / T3 / Type 1ca	
Max. Continuous Operating Voltage (AC)	U _c	150V	255V
Technology		GDT technology Thermal disconnecter	
Ports/Protection Mode		1 / N-PE	
Nominal Discharge Current (8/20μs)	I _n	10kA	
Max. Discharge Current (8/20μs)	I _{max}	20kA	
Open Circuit Voltage (1.2/50μs)	U _{oc}	20kV	
Voltage Protection Rating @6kV/3kA UL 1449	VPR	≤0.8kV	≤1.0kV
Voltage Protection Level @1.2/50μs IEC 61643-11	U _p	≤0.8kV	≤1.5kV
Temporary Overvoltage TOV —Withstand Mode	U _{lov}	1200V/200ms	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		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 35 and 36 for prewired multi-pole combination.

■ Dimension Drawing



■ Basic Circuit Diagram



T1

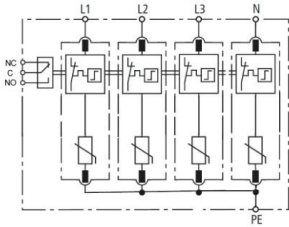
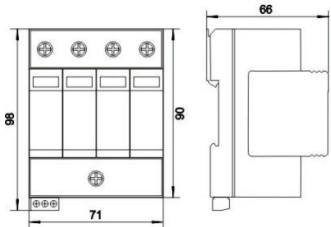
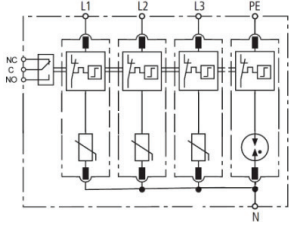
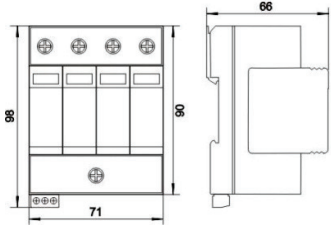
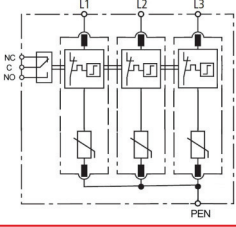
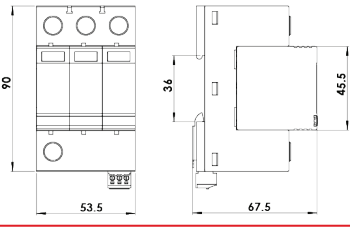
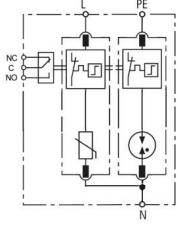
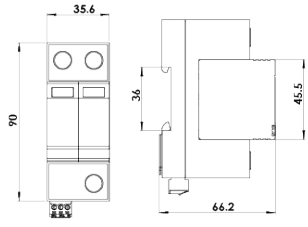
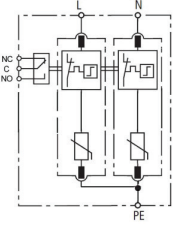
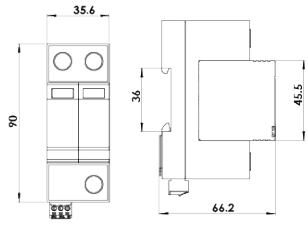
T2

T3

Prewired Multi-pole SPD

Part No.	Pole	Power System	Nominal Voltage (phase voltage) U_n	Max. Operating Voltage U_c	Open Circuit Voltage (1.2/50 μ s) U_{oc}	Voltage Protection Level U_p	Diagram
DS20/75-2V-S	2	Single phase 2W+G	60Vac	75Vac	20kV	L/N-G: 0.4kV	5
DS20/150-2V-S	2	Single phase 2W+G	120~127Vac	150Vac	20kV	L/N-G: 0.7kV	5
DS20/275-2V-S	2	Single phase 2W+G	220~230Vac	275Vac	20kV	L/N-G: 1.2kV	5
DS20/320-2V-S	2	Single phase 2W+G	240~277Vac	320Vac	20kV	L/N-G: 1.3kV	5
DS20/385-2V-S	2	Single phase 2W+G	240~277Vac	385Vac	20kV	L/N-G: 1.4kV	5
DS20/440-2V-S	2	Single phase 2W+G	347~400Vac	440Vac	20kV	L/N-G: 1.6kV	5
DS20/550-2V-S	2	Single phase 2W+G	480Vac	550Vac	20kV	L/N-G: 2.0kV	5
DS20/150-(V+T)-S	2	Single phase 2W+G	120~127Vac	150Vac	20kV	L-N: 0.7kV, N-PE: 0.8kV	4
DS20/275-(V+T)-S	2	Single phase 2W+G	220~230Vac	275Vac	20kV	L-N: 1.2kV, N-PE: 1.5kV	4
DS20/320-(V+T)-S	2	Single phase 2W+G	240~277Vac	320Vac	20kV	L-N: 1.3kV, N-PE: 1.5kV	4
DS20/385-(V+T)-S	2	Single phase 2W+G	240~277Vac	385Vac	20kV	L-N: 1.4kV, N-PE: 1.5kV	4
DS20/420-(V+T)-S	2	Single phase 2W+G	347Vac	420Vac	20kV	L-N: 1.6kV, N-PE: 1.5kV	4
DT20/75-3V-S	3	Three phase 3W+G	60Vac	75Vac	20kV	L-G: 0.4kV	3
DT20/150-3V-S	3	Three phase 3W+G	120~127Vac	150Vac	20kV	L-G: 0.7kV	3
DT20/275-3V-S	3	Three phase 3W+G	220~230Vac	275Vac	20kV	L-G: 1.2kV	3
DT20/320-3V-S	3	Three phase 3W+G	240~277Vac	320Vac	20kV	L-G: 1.3kV	3
DT20/385-3V-S	3	Three phase 3W+G	240~277Vac	385Vac	20kV	L-G: 1.4kV	3
DT20/440-3V-S	3	Three phase 3W+G	347~400Vac	440Vac	20kV	L-G: 1.6kV	3
DT20/550-3V-S	3	Three phase 3W+G	480Vac	550Vac	20kV	L-G: 2.0kV	3
DT20/150-(3V+T)-S	4	Three phase 4W+G	120~127Vac	150Vac	20kV	L-N: 0.7kV, N-PE: 0.8kV	2
DT20/275-(3V+T)-S	4	Three phase 4W+G	220~230Vac	275Vac	20kV	L-N: 1.2kV, N-PE: 1.5kV	2
DT20/320-(3V+T)-S	4	Three phase 4W+G	240~277Vac	320Vac	20kV	L-N: 1.3kV, N-PE: 1.5kV	2
DT20/385-(3V+T)-S	4	Three phase 4W+G	240~277Vac	385Vac	20kV	L-N: 1.4kV, N-PE: 1.5kV	2
DT20/420-(3V+T)-S	4	Three phase 4W+G	347Vac	420Vac	20kV	L-N: 1.6kV, N-PE: 1.5kV	2
DT20/75-4V-S	4	Three phase 4W+G	60Vac	75Vac	20kV	L/N-G: 0.4kV	1
DT20/150-4V-S	4	Three phase 4W+G	120~127Vac	150Vac	20kV	L/N-G: 0.7kV	1
DT20/275-4V-S	4	Three phase 4W+G	220~230Vac	275Vac	20kV	L/N-G: 1.2kV	1
DT20/320-4V-S	4	Three phase 4W+G	240~277Vac	320Vac	20kV	L/N-G: 1.3kV	1
DT20/385-4V-S	4	Three phase 4W+G	240~277Vac	385Vac	20kV	L/N-G: 1.4kV	1
DT20/440-4V-S	4	Three phase 4W+G	347~400Vac	440Vac	20kV	L/N-G: 1.6kV	1
DT20/550-4V-S	4	Three phase 4W+G	480Vac	550Vac	20kV	L/N-G: 2.0kV	1

T1
T2
T3

Diagram	Basic Circuit diagram	Dimension Drawing
1) 4+0 		
2) 3+1 		
3) 3+0 		
4) 1+1 		
5) 2+0 		

Single Pole SPD

■ 18mm Single Phase ■ U_{oc} 20kV

MDSS 20/...



- 18mm compact T3 SPD for single phase or two hot lines protection.
- Max discharge current up to 20kA 8/20μs and open circuit voltage U_{oc} to 20kV.
- Pluggable module for easy replacement
- Reliable thermal disconnecter to be fail-safe.
- Degradation failure indication & optional remote signal contact.
- Comply with IEC/EN 61643-11, UL 1449 4th, IEEE C62.41, CSA C22.2



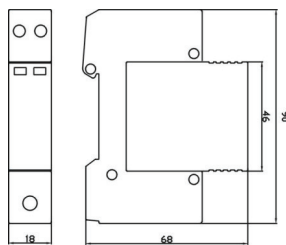
Model		MDSS10/12-2V-S	MDSS10/24-2V-S	MDSS20/36-2V-S	MDSS20/48-2V-S	MDSS20/60-2V-S	MDSS20/110-2V-S
Compliance		EN/IEC 61643-11, UL 1449 4 th					
Category IEC/EN/UL		Class III / T3 / Type 1ca					
Max. Continuous Operating Voltage (AC/DC)	U _c	30V / 38V	35V / 45V	50V / 65V	60V / 81V	75V / 100V	130V / 170V
Technology		MOV Technology Thermal disconnecter					
Ports/Protection Mode		1 / L-PE, N-PE					
Nominal Discharge Current (8/20μs)	I _n	5kA	5kA	10kA	10kA	10kA	10kA
Max. Discharge Current (8/20μs)	I _{max}	10kA	10kA	20kA	20kA	20kA	20kA
Open Circuit Voltage (1.2/50μs)	U _{oc}	10kV	10kV	20kV	20kV	20kV	20kV
Voltage Protection Level	U _p	≤160V	≤180V	≤330V	≤370V	≤460V	≤700V
Temporary Overvoltage TOV —Withstand Mode	U _{tov}	34V/5s	40V/5s	70V/5s	78V/5s	90V/5s	160V/5s
Residual Current	I _{PE}	<0.1mA					
Response Time	t _A	≤25ns					
Backup Fuse (only required if not already provided in mains)		32A gL/gG					
Environment		Temperature Range: -40°C ~ +80°C; Humidity: ≤95%; Altitude: ≤2000m					
Cross-Section of Connection Wire		Single-strand 10mm ² ; multi-strand 6mm 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		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)					

(more models in next page...)

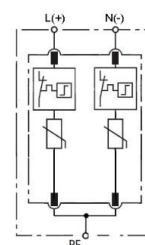
(more models of MDSS 20/...)

Model		MDSS20/150-2V-S	MDSS20/175-2V-S	MDSS20/275-2V-S	MDSS20/320-2V-S	MDSS20/385-2V-S	MDSS20/420-2V-S
Compliance		EN/IEC 61643-11, UL 1449 4 th					
Category IEC/EN/UL		Class III / T3 / Type 1ca					
Max. Continuous Operating Voltage (AC/DC)	U _c	150V / 200V	175V / 225V	275V / 350V	320V / 420V	385V / 505V	420V / 560V
Technology		MOV Technology Thermal disconnecter					
Ports/Protection Mode		1 / L-PE , N-PE					
Nominal Discharge Current (8/20μs)	I _n	10kA	10kA	10kA	10kA	10kA	10kA
Max. Discharge Current (8/20μs)	I _{max}	20kA	20kA	20kA	20kA	20kA	20kA
Open Circuit Voltage (1.2/50μs)	U _{oc}	20kV	20kV	20kV	20kV	20kV	20kV
Voltage Protection Level	U _p	≤0.8kV	≤0.9kV	≤1.2kV	≤1.3kV	≤1.4kV	≤1.6kV
Temporary Overvoltage TOV —Withstand Mode	U _{toV}	175V/5s	228V/5s	335V/5s	335V/5s	403V/5s	504V/5s
Residual Current	I _{PE}	<0.1mA					
Response Time	t _A	≤25ns					
Backup Fuse (only required if not already provided in mains)		32A gL/gG					
Environment		Temperature Range: -40°C ~ +80°C; Humidity: ≤95%; Altitude: ≤2000m					
Cross-Section of Connection Wire		Single-strand 10mm ² ; multi-strand 6mm 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		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)					

■ Dimension Drawing



■ Basic Circuit Diagram

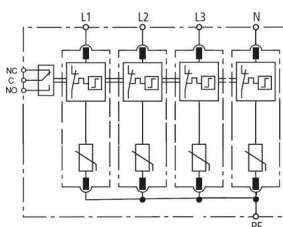


Prewired Multi-pole SPD

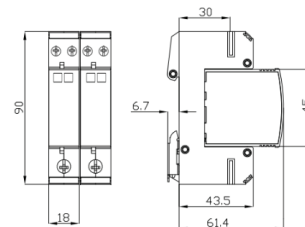
1) 4+0



■ Dimension Drawing



■ Basic Circuit Diagram



Single Pole SPD

■ 18mm Single Phase ■ U_{oc} 10kV

MDS10/...-F

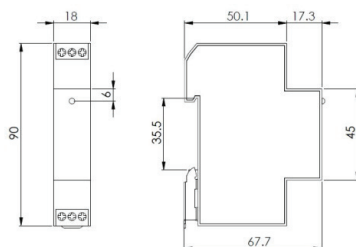


- 18mm monoblock T3 SPD for single phase protection.
- "1+1" protection circuit for TN-S and TT network systems
- Rated nominal current 10A
- Max discharge current up to 20kA 8/20μs and open circuit voltage U_{oc} to 10kV
- Terminal connection module.
- Thermal protection & LED failure indicator.
- Comply with IEC/EN 61643-11, UL 1449 4th, IEEE C62.41, CSA C22.2



Model		MDS10/150-(V+T)-F	MDS10/175-(V+T)-F	MDS10/275-(V+T)-F	MDS10/300-(V+T)-F	MDS10/320-(V+T)-F
Compliance		EN/IEC 61643-11, UL 1449 4 th				
Category IEC/EN/UL		Class III / T3 / Type 1ca				
Max. Continuous Operating Voltage (AC/DC)	U_c	150V / 200V	175V / 225V	275V / 350V	300V / 385V	320V / 420V
Technology		MOV+GDT technology Thermally protected				
Ports/Protection Mode		1 / L-N, N-PE				
Nominal Discharge Current (8/20μs)	I_n	5kA				
Max. Discharge Current (8/20μs)	I_{max}	10kA				
Open Circuit Voltage (1.2/50μs)	U_{oc}	10kV				
Voltage Protection Level @ I_n L-N	U_p	≤0.8kV	≤0.8kV	≤1.3kV	≤1.4kV	≤1.5kV
Voltage Protection Level @1.2/50μs N-PE	U_p	≤0.8kV	≤0.8kV	≤1.5kV	≤1.5kV	≤1.5kV
Temporary Overvoltage TOV L-N —Withstand Mode	U_{tov}	175V/5s	228V/5s	335V/5s	335V/5s	335V/5s
Temporary Overvoltage TOV N-PE —Withstand Mode	U_{tov}	1200V/200ms	1200V/200ms	1200V/200ms	1200V/200ms	1200V/200ms
Residual Current	I_{PE}	<0.1mA				
Nominal Load current	I_L	10A				
Short-Circuit Current Rating per IEC 61643	I_{sc}	6kArms				
Response Time	t_A	≤25ns				
Environment		Temperature Range: - 40°C ~ +70°C; Humidity: ≤95%; wAltitude: ≤2000m				
Cross-Section of Connection Wire		Single-strand 4mm ² ; multi-strand 2.5 mm 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				
Approvals, certification		CE				

■ Dimension Drawing



■ Basic Circuit Diagram

