

SPD

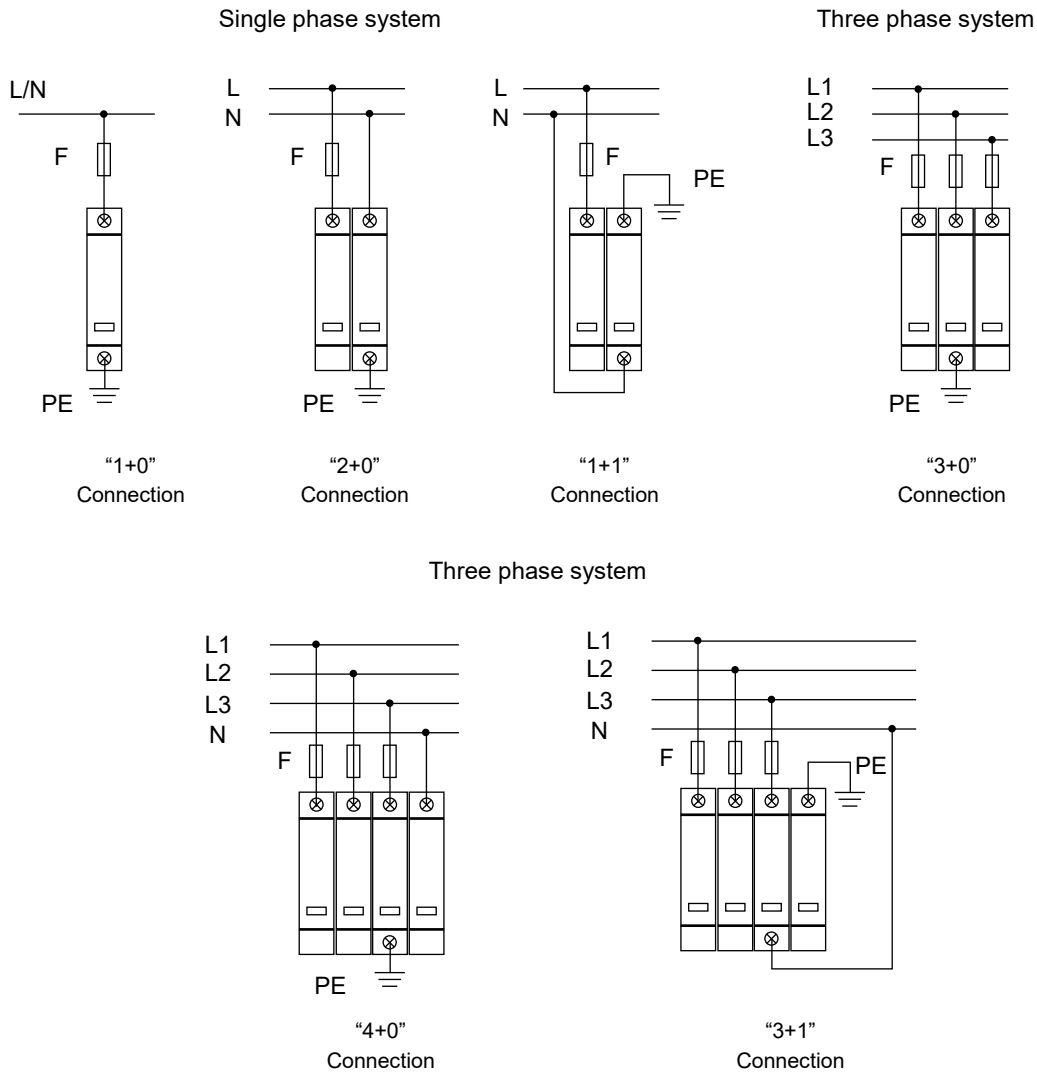
Surge Protective Device

SPD Connected to LV Power Supply System

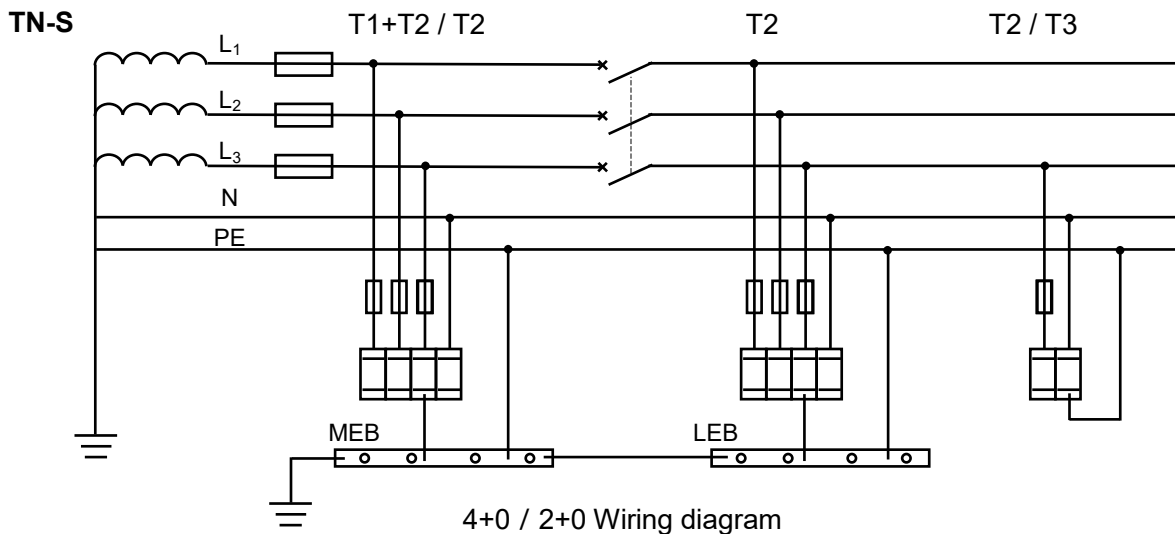


- AC / DC Power System
- New Energy
- Residential Building
- Telecommunications
- Internet Data Center (IDC)
- Distribution System

Wiring Diagram

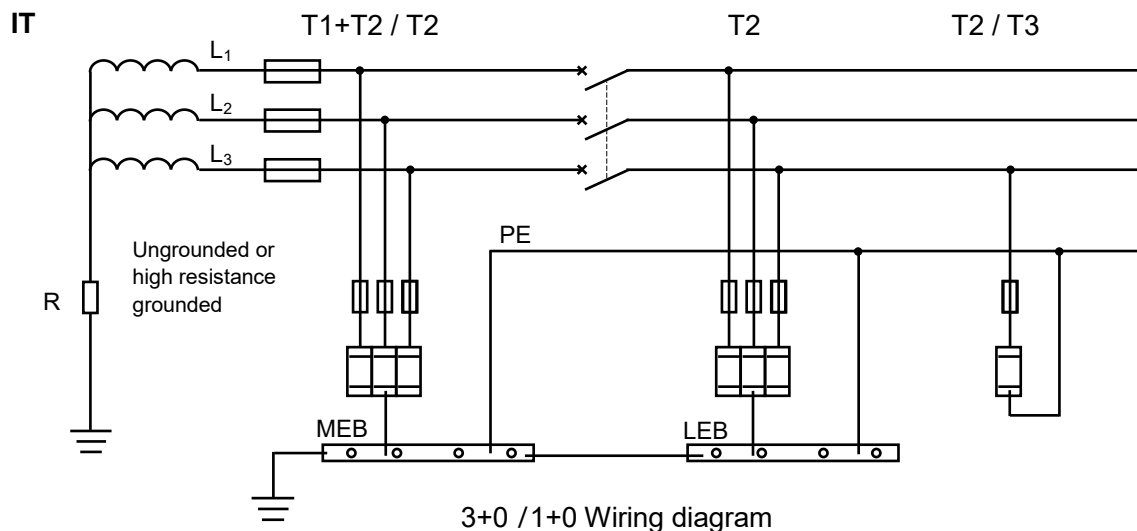
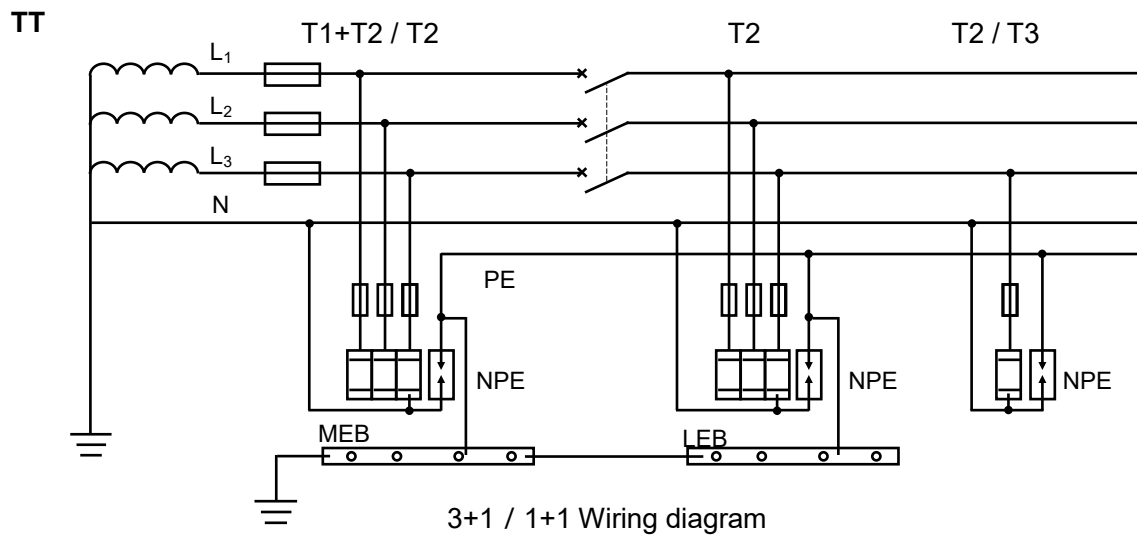
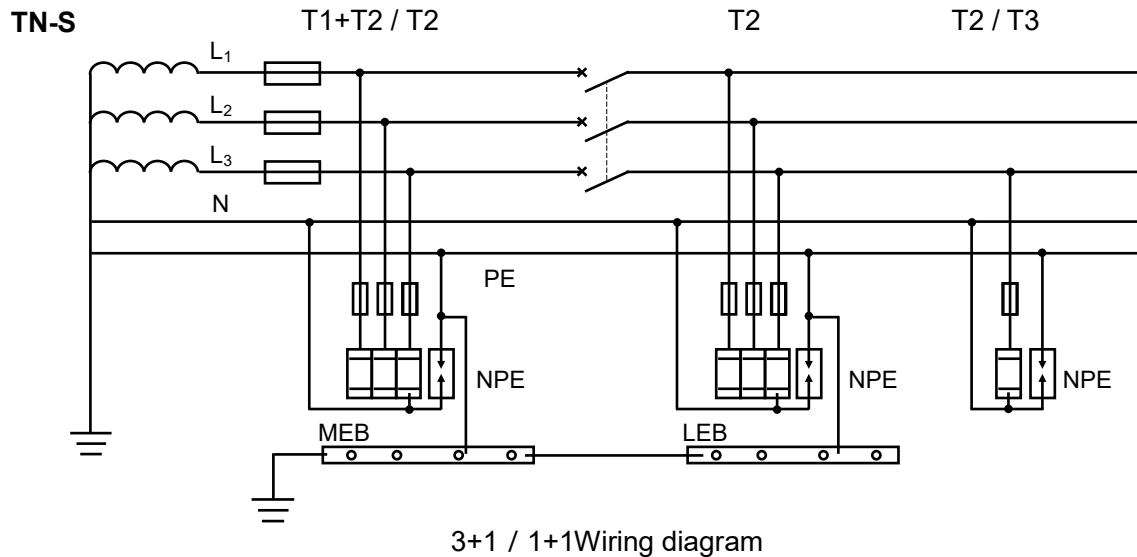


Connection of SPD in networks



SPD

Surge Protective Device

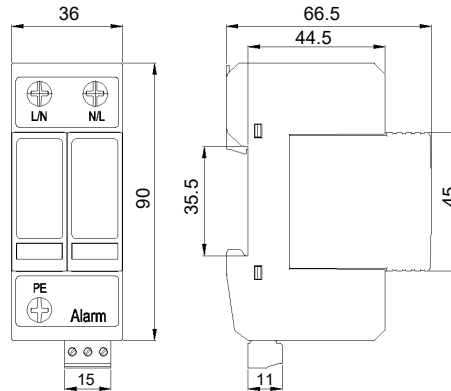


Glossary

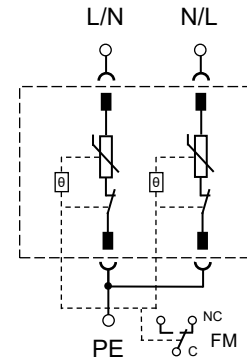
Item	Description
U_p	Voltage Protection Level Maximum voltage to be expected at the SPD terminals due to an impulse stress with defined voltage steepness and an impulse stress with a discharge current with given amplitude and wave shape. — (IEC 61643-11)
8/20 μ s	8/20 Current Impulse Current impulse with a nominal virtual front time of 8 μ s and a nominal time to half-value of 20 μ s. — (IEC 61643-11)
1.2/50 μ s	1.2/50 Voltage Impulse Voltage impulse with a nominal virtual front time of 1.2 μ s and a nominal time to half-value of 50 μ s. — (IEC 61643-11)
U_c	Maximum Continuous Operating Voltage Maximum r.m.s. voltage, which may be continuously applied to the SPD's mode of protection. — (IEC 61643-11)
I_n	Nominal Discharge Current Crest value of the current through the SPD having a current waveshape of 8/20 μ s. — (IEC 61643-11)
I_{max}	Maximum Discharge Current Crest value of a current through the SPD having an 8/20 μ s waveshape and magnitude according to the manufacturers specification. I_{max} is equal to or greater than I_n . — (IEC 61643-11)
Modes of Protection	Modes of Protection An intended current path, between terminals that contains protective components, e.g. line-to-line, line-to-earth, line-to-neutral, neutral-to-earth. — (IEC 61643-11)
IP	Degrees of Protection Provided by Enclosure (IP Code) Classification preceded by the symbol IP indicating the extent of protection provided by an enclosure against access to hazardous parts, against ingress of solid foreign objects and possibly harmful ingress of water.



Dimensions (mm)



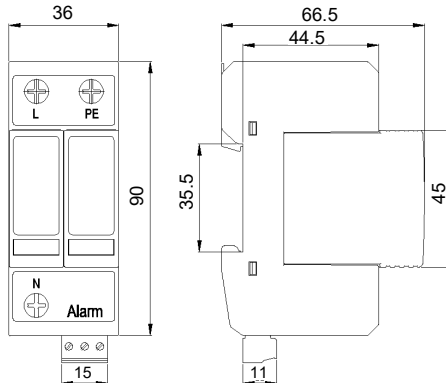
Schematics



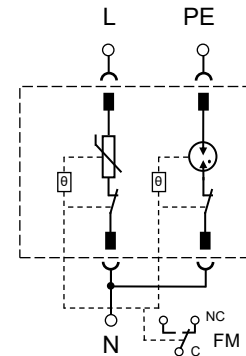
- For Single-phase System
- MOV Module Tripping Ability: 800 V, 100 A
- High Environmental Adaptability
- With Remote Signaling and Failure Indicator

Features	Specifications	
Model	SD20R230L205	SD30R230L205
Nominal System Voltage (U_n)	230 VAC	230 VAC
Maximum Continuous Operating Voltage (U_c)	L / N - PE: 385 VAC	L / N - PE: 385 VAC
Nominal Discharge Current (8/20 μ s) (I_n)	20 kA	30 kA
Maximum Discharge Current (8/20 μ s) (I_{max})	40 kA	60 kA
Voltage Protection Rating (U_p)	L / N - PE: 1.8 kV	L / N - PE: 2.0 kV
Protection Mode	2+0 (L / N - PE)	2+0 (L / N - PE)
Max. Main-side Overcurrent Protection	125 A gL/gG	160 A gL/gG
Short Current Rating I_{SCCR}	25 kA	
According to Standard	IEC/EN 61643-11 Class II, UL 1449 Type 4CA	
Degrees of Protection	IP20	
Wiring Ability	(1.5 to 25) mm ² (Flexible) / 35 mm ² (Rigid)	
Installation	35 mm DIN rail	
Alarm	Remote + Indicator	
Operating State / Fault Indication	Green / Red	
Remote Indication Contacts	AC: 250 V / 0.5 A, DC: 250 V / 0.1 A	
Altitude	0 ~ 4000 m	
Operational Temperature Range	(-40 to 85) °C	

Dimensions (mm)



Schematics

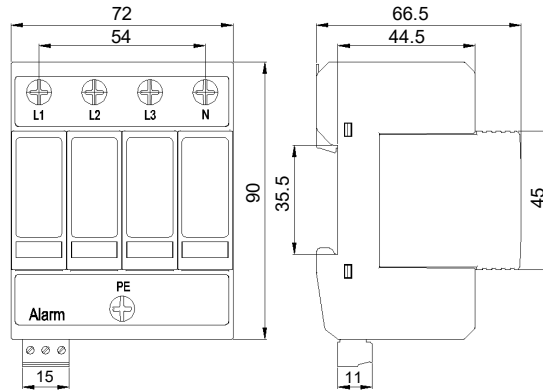


- For Single-phase System
- MOV Module Tripping Ability: 800 V, 100 A
- High Environmental Adaptability
- With Remote Signaling and Failure Indicator

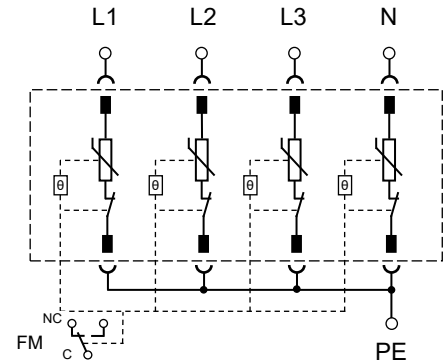
Features	Specifications	
Model	SD20R230A203	SD30R230A203
Nominal System Voltage (U_n)	230 VAC	230 VAC
Maximum Continuous Operating Voltage (U_c)	L - N: 385 VAC; N - PE: 255 VAC	L - N: 385 VAC; N - PE: 255 VAC
Nominal Discharge Current (8/20 μ s) (I_n)	20 kA	30 kA
Maximum Discharge Current (8/20 μ s) (I_{max})	40 kA	60 kA
Voltage Protection Rating (U_p)	L - N: 1.8 kV; N - PE: 1.0 kV	L - N: 2.0 kV; N - PE: 1.5 kV
Protection Mode	1+1 (L - N, N - PE)	1+1 (L - N, N - PE)
Max. Main-side Overcurrent Protection	125 A gL/gG	160 A gL/gG
Short Current Rating I_{SCCR}	25 kA	
According to Standard	IEC/EN 61643-11 Class II, UL 1449 Type 4CA	
Degrees of Protection	IP20	
Wiring Ability	(1.5 to 25) mm ² (Flexible) / 35 mm ² (Rigid)	
Installation	35 mm DIN rail	
Alarm	Remote + Indicator	
Operating State / Fault Indication	Green / Red	
Remote Indication Contacts	AC: 250 V / 0.5 A, DC: 250 V / 0.1 A	
Altitude	0 ~ 4000 m	
Operational Temperature Range	(-40 to 85) °C	



Dimensions (mm)



Schematics

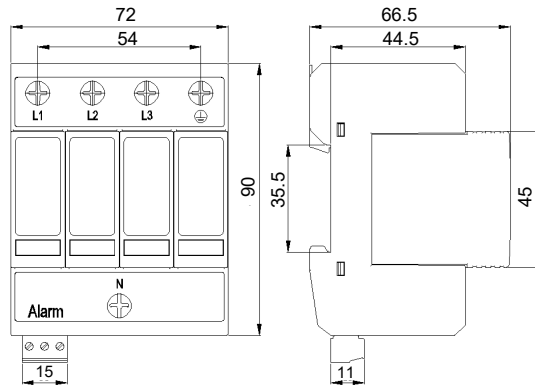


- For AC Three-phase System
- MOV Module Tripping Ability: 800 V, 100 A
- High Environmental Adaptability
- With Remote Signaling and Failure Indicator

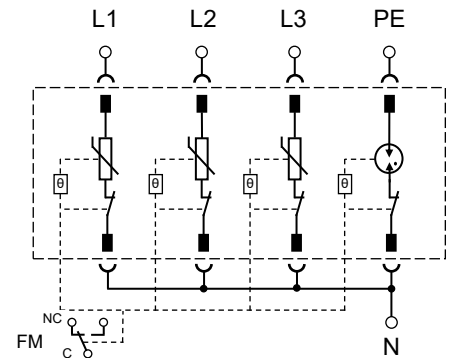
Features	Specifications	
Model	SD20R230L405	SD30R230L405
Nominal System Voltage (U_n)	230 VAC	230 VAC
Maximum Continuous Operating Voltage (U_c)	L / N - PE: 385 VAC	L / N - PE: 385 VAC
Nominal Discharge Current (8/20 μ s) (I_n)	20 kA	30 kA
Maximum Discharge Current (8/20 μ s) (I_{max})	40 kA	60 kA
Voltage Protection Rating (U_p)	L / N - PE: 1.8 kV	L / N - PE: 2.0 kV
Protection Mode	4+0 (L / N - PE)	4+0 (L / N - PE)
Max. Main-side Overcurrent Protection	125 A gL/gG	160 A gL/gG
Short Current Rating I_{SCCR}	25 kA	
According to Standard	IEC/EN 61643-11 Class II, UL 1449 Type 4CA	
Degrees of Protection	IP20	
Wiring Ability	(1.5 to 25) mm ² (Flexible) / 35 mm ² (Rigid)	
Installation	35 mm DIN rail	
Alarm	Remote + Indicator	
Operating State / Fault Indication	Green / Red	
Remote Indication Contacts	AC: 250 V / 0.5 A, DC: 250 V / 0.1 A	
Altitude	0 ~ 4000 m	
Operational Temperature Range	(-40 to 85) °C	



Dimensions (mm)

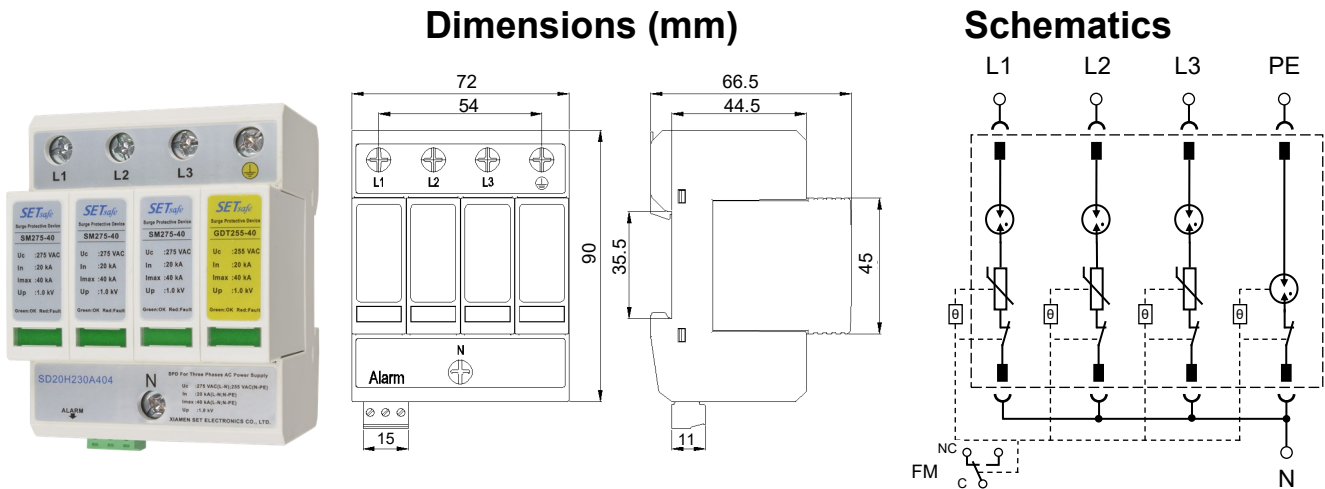


Schematics



- For AC Three-phase System
- MOV Module Tripping Ability: 800 V, 100 A
- High Environmental Adaptability
- With Remote Signaling and Failure Indicator
- SD20R230A404 Comply with UL/TUV/CE/CQC/TLC Certification

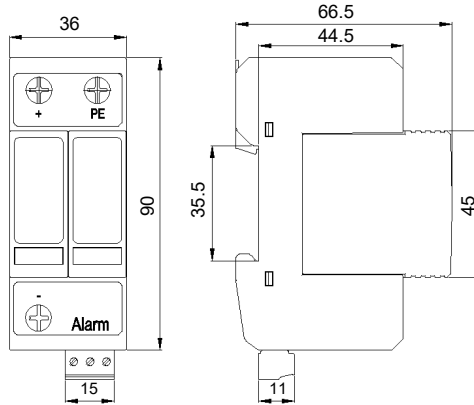
Features	Specifications	
Model	SD20R230A404	SD30R230A404
Nominal System Voltage (U_n)	230 VAC	230 VAC
Maximum Continuous Operating Voltage (U_c)	L - N: 385 VAC; N - PE: 255 VAC	L - N: 385 VAC; N - PE: 255 VAC
Nominal Discharge Current (8/20 μ s) (I_n)	20 kA	30 kA
Maximum Discharge Current (8/20 μ s) (I_{max})	40 kA	60 kA
Voltage Protection Rating (U_p)	L - N: 1.8 kV; N - PE: 1.0 kV	L - N: 2.0 kV; N - PE: 1.5 kV
Protection Mode	3+1 (L - N, N - PE)	3+1 (L - N, N - PE)
Max. Main-side Overcurrent Protection	125 A gL/gG	160 A gL/gG
Short Current Rating I_{SCCR}	25 kA	
According to Standard	IEC/EN 61643-11 Class II, UL 1449 Type 4CA	
Degrees of Protection	IP20	
Wiring Ability	(1.5 to 25) mm ² (Flexible) / 35 mm ² (Rigid)	
Installation	35 mm DIN rail	
Alarm	Remote + Indicator	
Operating State / Fault Indication	Green / Red	
Remote Indication Contacts	AC: 250 V / 0.5 A, DC: 250 V / 0.1 A	
Altitude	0 ~ 4000 m	
Operational Temperature Range	(-40 to 85) °C	



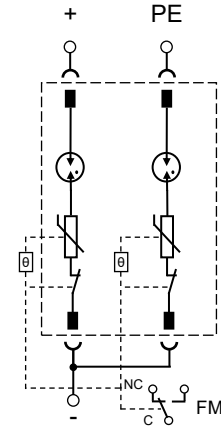
- For AC Three-phase System
- Pluggable Module for Easy Replacement
- Low Residual Voltage, No Leakage Current

Features	Specifications
Model	SD20H230A404
Nominal System Voltage (U_n)	230 VAC
Maximum Continuous Operating Voltage (U_c)	L - N: 275 VAC; N - PE: 255 VAC
Nominal Discharge Current (8/20 μ s) (I_n)	20 kA
Maximum Discharge Current (8/20 μ s) (I_{max})	40 kA
Voltage Protection Rating (U_p)	1.0 kV
Protection Mode	3+1 (L - N, N - PE)
Max. Main-side Overcurrent Protection	125 A gL/gG
Short Current Rating I_{SCCR}	25 kA
According to Standard	IEC/EN 61643-11 Class II
Degrees of Protection	IP20
Wiring Ability	(1.5 to 25) mm ² (Flexible) / 35 mm ² (Rigid)
Installation	35 mm DIN rail
Alarm	Remote + Indicator
Operating State / Fault Indication	Green / Red
Remote Indication Contacts	AC: 250 V / 0.5 A, DC: 250 V / 0.1 A
Altitude	0 ~ 4000 m
Operational Temperature Range	(-40 to 85) °C

Dimensions (mm)



Schematics



- For DC System
- Pluggable Module for Easy Replacement
- Low Residual Voltage, No Leakage Current

Features	Specifications
Model	SD20H270A203-DC
Nominal System Voltage (U_n)	270 VDC
Maximum Continuous Operating Voltage (U_c)	300 VDC
Nominal Discharge Current (8/20 μ s) (I_n)	20 kA
Maximum Discharge Current (8/20 μ s) (I_{max})	40 kA
Voltage Protection Rating (U_p)	1.0 kV
Protection Mode	+ — -, - — PE
Short Current Rating I_{SCCR}	1000 A
According to Standard	IEC/EN 61643-31 Class II
Degrees of Protection	IP20
Wiring Ability	(1.5 to 25) mm ² (Flexible) / 35 mm ² (Rigid)
Installation	35 mm DIN rail
Alarm	Remote + Indicator
Operating State / Fault Indication	Green / Red
Remote Indication Contacts	AC: 250 V / 0.5 A, DC: 250 V / 0.1 A
Altitude	0 ~ 4000 m
Operational Temperature Range	(-40 to 85) °C



ATTENTION

Usage

1. Frequency range is from 47 Hz to 63 Hz.
2. The voltage applied continuously to the SPD must not exceed its maximum continuous operating voltage U_c .
3. When atmosphere press is from 80 kPa to 106 kPa, the related altitude shall be from 2000 m to - 500 m.
4. Do not touch the product body or wires directly when power is on, to avoid electric shock.

Replacement

As SPD is a non-repairable product, for safety sake, please use the same type of SPD for replacement.

Storage

Do not store SPD at high temperature, high humidity or corrosive gas environment, to avoid oxidation of the wires. Use them up within 1 year after receiving the goods.

Installation

1. Installation and startup may only be carried out by qualified personnel. The relevant country-specific regulations must be observed.
2. Check the device for external damage before installation. If the device is defective, it must not be used.
3. Pay attention to risk of electric shock. Please cutoff all electrical power before installation or service.
4. Lay the output cables to the surge protective devices (SPDs) as short as possible, without loops.
5. Please install proper backup protection devices in front of SPD.
6. Do not apply mechanical stress to the SPD body during or after the installation.

Maintenance

1. Check SPD status according to instructions before and after the thunderstorm season each year.
2. If the indicator of "failure state" appears, the SPD is damaged. Replace the SPD with same type.
3. Ensure electrical connections and mountings are correct before energizing the circuit.
4. SPD's quality is well controlled and strictly inspected before delivery. If non-functional ones are found during operation, please contact us early enough.