# Surge Devices

## Technical Product Specification

# SDT23C4P

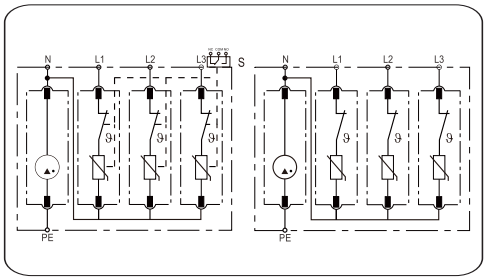
### SPD-Type 2+3

For TT/TN-S systems

(“3+1" circuit )




Basic circuit diagram:




## • Technical data

| | | | | | | |
|---|---|---|---|---|---|---|
| IEC Electrical | | 150 | 275 | 320 | 385 | 440 |
| Nominal AC Voltage(50/60Hz) | | 120V | 230V | 230V | 230V | 400V |
| Maximum Continuous Operating Voltage(AC) | (L-N)$U_c$ | 150V | 275V | 320V | 385V | 440V |
| | (N-PE)$U_c$ | 255V | | | | |
| Nominal Discharge Current (8/20 μs) | (L-N)/(N-PE)$I_n$ | 20 kA/20 kA | | | | |
| Maximum Discharge Current(8/20 μs) | (L-N)/(N-PE)$I_{max}$ | 40 kA/40kA | | | | |
| Impulse Discharge Current(10/350 μs) | (L-N)/(N-PE)$I_{imp}$ | 7kA/25 kA | | | | |
| Voltage Protection Level | (L-N)/(N-PE)$U_p$ | 1.0KV/1.5KV 1.5KV/1.5KV 1.6KV/1.5KV 1.8kV/1.5KV 2.0KV/1.5KV | | | | |
| Follow Current Interrupt Rating | (N-PE)$I_fi$ | 100Aas | | | | |
| Response Time | (L-N)/(N-PE)$t_A$ | <25ns/<100 ns | | | | |
| Back-Up Fuse(max) | | 63AgL/gG | | | | |
| Short-Circuit Current Rating(AC) | (L-N)$I_{SCCR}$ | 25kA | | | | |
| TOV Withstand 5s | (L-N)$U_T$ | 180V | 335V | 335V | 335V | 580V |
| TOV 120min | (L-N)$U_T$ | 230V | 440V | 440V | 440V | 765V |
| | mode | Wthstand | Safe Fail | Safe Fail | Safe Fail | Safe Fail |
| TOV Withstand 200ms | (N-PE)$U_T$ | 1200V | | | | |
| Mechanical &Environmental | | | | | | |
| Operating Temperature Range | $T_a$ | -40°F to+158°F-40°C to+70°C] | | | | |
| Pemissible Operating Humidity | RH | 5%⋯95% | | | | |
| Atmospheric pressure and altitude | | 80k Pa...106k Pa/-500 m⋯⋯2000 m | | | | |
| Terminal Screw Torque | (L,N)$M_{max}$ | | | | | |
| | (PE)$M_{max}$ | 39.9 lbfin [4.5 Nm] | | | | |
| Conductor Cross Section | (L,N) | 5 AWG (Solid,Stranded)/7 AWG(Flexible) | | | | |
| | | 16mm²(Solid,Stranded)/10 mm²(Flexible) | | | | |
| | (PE) | 2 AWG (Solid,Stranded)/4 AWG (Flexible) | | | | |
| | | 35mm²(Solid,Stranded)/25mm²(Flexible) | | | | |
| Mounting | | 35 mm DIN Rail,EN60715 | | | | |
| Degree of Protection | | IP20(built-in) | | | | |
| Housing Material | | Thermoplastic:Extinguishing Degree UL94V-0 | | | | |
| Thermal Protection | | Yes | | | | |
| Operating State /Fault Indication | | Green ok/Red defect | | | | |
| Remote Contacts(RC)<br>RC Switching Capacity<br>RC Conductor Cross Section(max)<br>RC Terminal Screw Torque | | Optional<br>AC: 250V / 0.5 A; DC: 250V / 0.1 A; 125 V / 0.2 A; 75 V / 0.5 A<br>16 AWG (Solid) / 1.5 mm²(Solid)<br>2.2 lbf·in [0.25 Nm] | | | | |

© Copyright Surge Devices 2025



## • Product introduction

### 1. Summary

**SDT23C4P** is for installation at LPZ $0_B$-1 or higher, protecting low voltage equipment from surge. Specially designed for TT/TN-S system ("3+1" circuit). Applied in pulggable SPD type 2+3 for three-phase power supply system. Designed according to IEC 61643-11; and BS EN61643-11.

### 3. Application

**SDT23C4P** is applied in three-phase TT and TN-S system (“3+1” circuit). proving type 2 lightning protection.

## • Installation instruction

According to lightning protection zones concept, for installation at LPZ $0_B$-1 or higher. This surge protective device is usually installed in distribution-box or feeder bus of UPS, protecting devices or equipment downstream.

Fuse must be installed at the upstream of the SPD or the lightning arrester to make sure that the protected system has double protection. The value of the fuse used in a SPD system should be conformed to:

1. The value of FUSE should not be larger than the max. withstand capacity of the SPD's backup fuse value.
2. Under the status of the max. current in the power supply & close loop circuit available current, the fuse should be able to disconnect when overloaded or short-circuited.
3. Take 1 & 2 into consideration, the fuse should be as large as possible to allow the maximum surge discharge of SPD.

### 2. Main character

- Pluggable module, easy for installation and maintenance
- High discharge capacity, quick response
- Double thermal disconnector devices, providing more reliable protection
- Green window will change to red when fault and also provide remote alarm control at the same time
- Protect equipment against temporary over voltages(TOVs).

### 4. Application environment

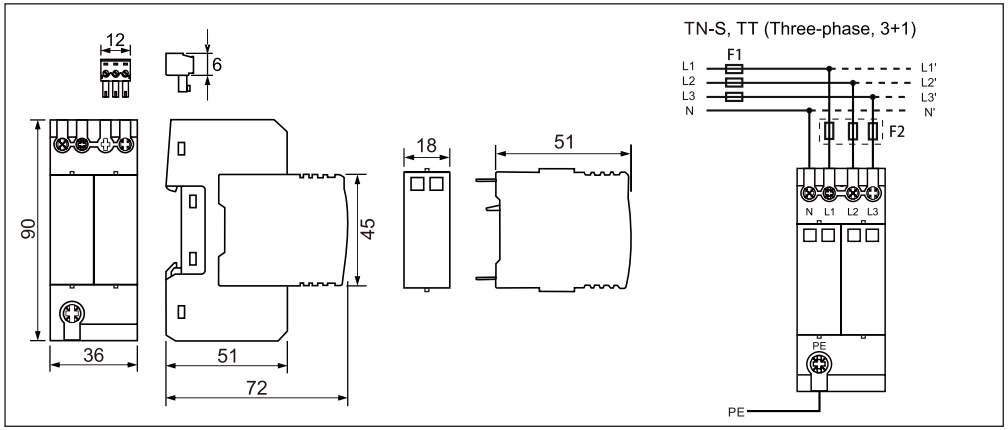
- Temperature: -40°C ~ +80°C
- Relative humidity: ≤ 95% (25°C)

## • Installation steps

1. Check the product for integrity of the package; make sure the product window not indicates red.
2. Mount the SPD on the 35mm DIN rail.
3. Connect conductors, the cross-sectional area of cable must be larger than 6mm². The withstand voltage value of cable is not smaller than AC500V; ensure wiring reliable.
4. If need remote alarm, it should be connected signal lines to remote signal terminal 1 and 2, or 2 and 3 (normal, 1 and 2 open, 2 and 3 close; when fault, the state is reversed).
5. After above, switch on the power supply and turn on the circuit breaker, if the SPD's window does not appear red, this indicates the unit is operating normally.

**Regularly inspect the operating status, especially after lightning. Once the fuse upstream break, or the SPD's window indicates red, electrician should check/replace the SPD.**

**SDT23C4P installation diagram:**




**WARNING:**

1. **The device must be installed by electrically skilled person, conforming to national standards and safety regulations.**
2. **It is recommended that installation should be done under power off condition.**