SMI2 Series

SPD for Two Pair Exposed Lines **RayDat SUI-4 Series**

D1 • C1 • C2 • C3



IEC/EN Category: D1/C1/C2/C3

Mode of Protection: Longitudinal, Transverse

Voltages: 5, 12, 15, 24, 30, 48, 60, 110 V DC

Frequency Range: 30 MHz

Surge Discharge Ratings: In: 20 kA, I_{max}: 30 kA, I_{imp}: 5 kA

Series Load Current: 1A

Enclosure: DIN 43880 2/3TE, DIN Rail Mount

Terminals: Stranded to 4 mm² Housing: Modular Design Compliance: IEC/EN 61643-21

The RayDat SUI-2 Series provides the same electrical performance as the SLH-4 Series but with a greater surge withstand level or impulse current 10kA, 5kA per line. It is intended for operation in electrical environments where higher exposure to the effects of direct or partially direct lightning currents may be experienced. These include wind turbines and PV installations where lightning exposures are more severe, but where protection of sensitive electronics, such as environmental sensors, is just as crucial. These barriers provide both coarse and fine protection stages and offer longitudinal and transverse protection.

The initial protection stage comprises a three-pole gas discharge tube and is designed to divert the primary surge energy. The subsequent fine protection stage is implemented using fast bidirectional silicon avalanche diodes. Special design techniques have been employed in the design of the fine protection stage to

avoid capacitive line loading and thereby ensure a low insertion loss and wide operating frequency range. Series line impedance is used to ensure energy coordination between the coarse and fine protection stages irrespective of the magnitude of the incident surge. When power frequency contact occurs between power and communication lines, the hazard of electric shock and fire is increased. To prevent such risk, a thermo-clip is included in the primary protection stage of this device to divert the power frequency current to ground.

The plug-in module/base design facilitates replacement of a failed module without the need to remove system wiring

If the module is unplugged from the base, the through-connection is maintained, allowing continued operations while a replacement module is ordered.

30V

48V

60 V

110V

Technical Data

SUI-4 Series

| out-4 Series | | | ٥v | 120 | 151 | 24 V | 30 V | 40 V | 00 V | 1100 | | | | | | | |
|---|---------------|------------------|---------|---------|-------------------|---------------|--------------|-----------------------------|---------|-----------|--|--|--|--|--|--|--|
| Electrical | | | | | | | | | | | | | | | | | |
| Lines Protected | | | | | | 2 (4 Cor | ductors) | | | | | | | | | | |
| Nominal Operating Voltage (DC) | | Un | 5V | 12V | 15V | 24V | 30 V | 48 V | 60 V | 110V | | | | | | | |
| Maximum Continuous Operating Volta | ige (DC) | U _c | 6V | 15V | 18V | 28V | 33V | 52V | 64 V | 170V | | | | | | | |
| Rated Load Current at 25°C | | IL | | | | 1 | A | | | | | | | | | | |
| C2 Nominal Discharge Current (8/20) | ıs) | In | 20 kA | | | | | | | | | | | | | | |
| Maximum Discharge Current (8/20 µs |) | I _{max} | 30 kA | | | | | | | | | | | | | | |
| D1 Impulse Current (10/350 µs) | | I _{imp} | 5kA | | | | | | | | | | | | | | |
| Residual Voltage at 5 kA (8/20 µs) | | U _{res} | <22V | <42V | <48V | <70 V | <80 V | <140 V | <160V | <450 V | | | | | | | |
| Rated Spark Overvoltage | (Line-Ground) | | 7-10V | 16-21 V | 21-25V | 31-37V | 36-44V | 57-69V | 68-84V | 184-264 V | | | | | | | |
| | (Line-Line) | | 7-10V | 16-21 V | 21-25V | 31-37V | 36-44V | 57-69 V | 68-84V | 184-264 V | | | | | | | |
| Response Time Overvoltage Protection | on | t _A | | | | <1 | ns | -44V 57-69V 68-84V 184-264V | | | | | | | | | |
| Thermal Protection | | | | | | Ye | <1 ns Yes | | | | | | | | | | |
| Insulation Resistance of the Protection | | R _{iso} | ≥ 6KΩ | ≥ 15MΩ | ≥ 18MΩ | ≥ 28 MΩ | ≥ 33 MΩ | ≥ 52 MΩ | ≥ 64 MΩ | ≥ 170 MΩ | | | | | | | |
| Serial Resistance per Path | | R | | | | 1.6-2 | 2.0Ω | | | | | | | | | | |
| Transverse Capacitance | | С | | 50 pF | | | | | | | | | | | | | |
| Cut-off Frequency | | f_G | | 30 MHz | | | | | | | | | | | | | |
| /lechanical | | | | | | | | | | | | | | | | | |
| Temperature Range | | | | | -40 °C to +80 °C | | | | | | | | | | | | |
| Terminal Cross Section Multi-strand | | | | | 4 mm ² | | | | | | | | | | | | |
| Terminal Screw Torque | | | | | 0.5 Nm | | | | | | | | | | | | |
| Degree of Protection IEC/EN 60529 | | | | | | IP | 20 | | | | | | | | | | |
| Housing Material | | | | | Thermopla | stic; Grey; E | xtinguishing | Degree V-0 | | | | | | | | | |
| Mounting IEC/EN 60715 | | | | | | 35 mm I | OIN Rail | | | | | | | | | | |
| Order Information | | | | | | | | | | | | | | | | | |
| Order Code | | | 5V | 12V | 15V | 24V | 30V | 48V | 60V | 110V | | | | | | | |
| SUI-4-xxx | | | 7083,21 | 7083,22 | 7083,23 | 7083,24 | 7083,25 | 7083,26 | 7083,27 | 7083,28 | | | | | | | |
| | | | | | | | | | | | | | | | | | |

12V

15V

24V

RayDat SUI-4 Series

Internal Configuration

Legend

DB Diode Block

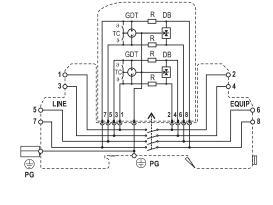
GDT Gas Discharge Tube

PG Protective Grounding

R Resistor

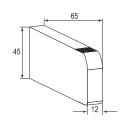
TC Thermo-clip

Dimensions & Packaging



| © 0 0 0 0 0 | | | 0 | |
|-------------------|----|---|------|--|
| | 06 | | 0 | |
| 69 | | 8 | | |
| 12 | | _ | 84.5 | |

| SUI-4 Series | 5V | 12V | 15V | 24V | 30V | 48V | 60V | 110V | | |
|------------------------------------|----|------------------|-----|-------|------|-----|-----|------|--|--|
| Dimensions | | | | | | | | | | |
| Weight per Unit | | 70 g | | | | | | | | |
| Dimensions DIN 43880 | | 2/3 TE | | | | | | | | |
| Packaging Dimensions (Single Unit) | | 87 × 15 × 102 mm | | | | | | | | |
| Minimum Package Quantity | | | | 15 pi | eces | | | | | |
| | | | | | | | | | | |



| SUI-4-xxxM Series | 5V | 12V | 15V | 24V | 30V | 48V | 60V | 110V |
|------------------------------------|------------------|-----|-----|-----|-----|-----|-----|------|
| Dimensions | | | | | | | | |
| Weight per Unit | 30 g | | | | | | | |
| Packaging Dimensions (Single Unit) | 87 × 15 × 102 mm | | | | | | | |
| Minimum Package Quantity | 15 pieces | | | | | | | |