

SPD for Two Pair Exposed Lines

RayDat SUI-4 Series

D1 • C1 • C2 • C3

SMI2 Series



IEC/EN Category: D1/C1/C2/C3
 Mode of Protection: Longitudinal, Transverse
 Voltages: 5, 12, 15, 24, 30, 48, 60, 110V DC
 Frequency Range: 30MHz
 Surge Discharge Ratings: I_n : 20kA, I_{max} : 30kA, I_{imp} : 5kA
 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 bi-directional 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.

Technical Data

SUI-4 Series		5V	12V	15V	24V	30V	48V	60V	110V
Electrical									
Lines Protected		2 (4 Conductors)							
Nominal Operating Voltage (DC)	U_n	5V	12V	15V	24V	30V	48V	60V	110V
Maximum Continuous Operating Voltage (DC)	U_c	6V	15V	18V	28V	33V	52V	64V	170V
Rated Load Current at 25°C	I_L	1 A							
C2 Nominal Discharge Current (8/20µs)	I_n	20kA							
Maximum Discharge Current (8/20µs)	I_{max}	30kA							
D1 Impulse Current (10/350µs)	I_{imp}	5kA							
Residual Voltage at 5kA (8/20µs)	U_{res}	<22V	<42V	<48V	<70V	<80V	<140V	<160V	<450V
Rated Spark Overvoltage	(Line-Ground)	7-10V	16-21V	21-25V	31-37V	36-44V	57-69V	68-84V	184-264V
	(Line-Line)	7-10V	16-21V	21-25V	31-37V	36-44V	57-69V	68-84V	184-264V
Response Time Overvoltage Protection	t_A	< 1 ns							
Thermal Protection		Yes							
Insulation Resistance of the Protection	R_{iso}	≥ 6 KΩ	≥ 15 MΩ	≥ 18 MΩ	≥ 28 MΩ	≥ 33 MΩ	≥ 52 MΩ	≥ 64 MΩ	≥ 170 MΩ
Serial Resistance per Path	R	1.6-2.0Ω							
Transverse Capacitance	C	50 pF							
Cut-off Frequency	f_G	30 MHz							
Mechanical									
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		IP20							
Housing Material		Thermoplastic; Grey; Extinguishing Degree V-0							
Mounting IEC/EN 60715		35 mm DIN 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
SUI-4-xxxM (module)		7083,29	7083,30	7083,31	7083,32	7083,33	7083,34	7083,35	7083,36

