

# SPD with Single Protection Mode

## RayDat SCL-1 Series

### C1 • C3

IM-VF Series



IEC/EN Category: C1/C3  
 Mode of Protection: Transverse  
 Fine Protection: MOV  
 Voltages: 12, 24V DC  
 Frequency Range: 0.5 MHz  
 Surge Discharge Ratings:  $I_n$ : 500 A  
 Series Load Current: 10 A  
 Enclosure: DIN 43880 1/3 TE, DIN Rail Mount  
 Terminals: Stranded to 4 mm<sup>2</sup>  
 Housing: Compact Design  
 Compliance: IEC/EN 61643-21

The RayDat SCL-1 Series has been developed to protect data transmission circuits or low voltage alarm circuits such as fire or security.

The unit provides fine protection using a MOV.

Where necessary, the SCL-1 may be used with a higher energy coarse protection unit such as the SUR-2 110 Series.

### Technical Data

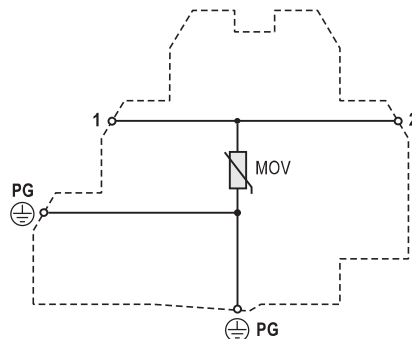
SCL-1 Series		12V	24V
<b>Electrical</b>			
Lines Protected		1 Conductor	
Nominal Operating Voltage (DC)	$U_n$	12V	24V
Maximum Continuous Operating Voltage (DC)	$U_c$	22V	38V
Rated Load Current at 25°C	$I_L$	10 A	
C1 Nominal Discharge Current (8/20 μs)	$I_n$	500 A	
Residual Voltage at $I_n$ (8/20 μs)	$U_{res}$	< 48V	< 87V
Rated Spark Overvoltage		24-30V	42-52V
Response Time Overvoltage Protection	$t_A$	< 25 ns	
Insulation Resistance of the Protection	$R_{iso}$	≥ 1.5 MΩ	≥ 3.0 MΩ
Serial Resistance per Path	R	< 0.1 Ω	
Transverse Capacitance	C	< 10 nF	< 6.0 nF
Cut-off Frequency	$f_G$	0.5 MHz	
<b>Mechanical</b>			
Temperature Range		-40 °C to +80 °C	
Terminal Cross Section		Stranded to 4 mm <sup>2</sup>	
Terminal Screw Torque		0.5 Nm	
Degree of Protection IEC/EN 60529		IP 20	
Housing Material		Thermoplastic; Beige; Extinguishing Degree V-0	
Mounting IEC/EN 60715		35 mm DIN Rail	
<b>Order Information</b>			
Order Code		12V	24V
SCL-1-xx		704 552	704 553

## RayDat SCL-1 Series

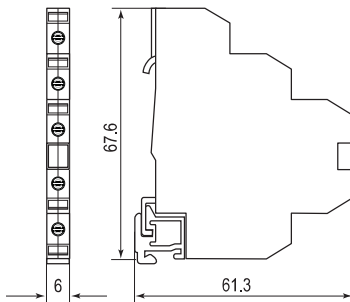
### Internal Configuration

#### Legend

MOV Metal Oxide Varistor  
PG Protective Grounding



### Dimensions & Packaging



SCL-1 Series	12V	24V
<b>Dimensions</b>		
Weight per Unit	28 g	
Dimensions DIN 43880	1/3 TE	
Packaging Dimensions (Single Unit)	90 × 150 × 8 mm	
Minimum Package Quantity	40 pieces	

# SPD with Single Protection Mode

## RayDat SCL-2 Series

C1 • C2 • C3

IM-DF Series



IEC/EN Category: C1/C2/C3 (see Technical Data)  
 Mode of Protection: Transverse  
 Fine Protection: Bi-directional TVS Diode  
 Voltages: 5, 12, 24, 60V DC  
 Frequency Range: Up to 1.4MHz  
 Surge Discharge Ratings:  $I_n$ : up to 500A  
 Series Load Current: 10A  
 Enclosure: DIN 43880 1/3TE, DIN Rail Mount  
 Terminals: Stranded to 4 mm<sup>2</sup>  
 Housing: Compact Design  
 Compliance: IEC/EN 61643-21

The RayDat SCL-2 Series has been developed to protect data transmission circuits or low voltage alarm circuits such as fire or security.

They only provide fine protection using a high speed, bi-directional, silicon stage.

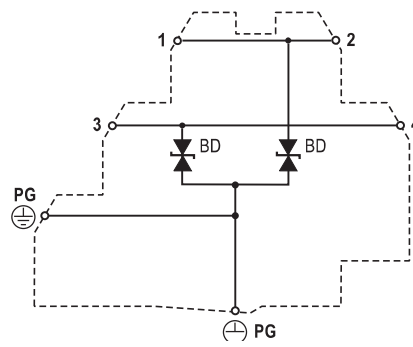
Where necessary, the SCL-2 may be used with a higher energy coarse protection unit such as the SUR-2-110 series.

### Technical Data

SCL-2 Series		5V	12V	24V	60V
<b>Electrical</b>					
Type per IEC/EN 61643-21		C1/C2/C3	C1/C3	C1/C3	C3
Lines Protected		1 (2 Conductors)			
Nominal Operating Voltage (DC)	$U_n$	5V	15V	24V	60V
Maximum Continuous Operating Voltage (DC)	$U_c$	6V	15V	28V	64V
Rated Load Current at 25°C	$I_L$	10A			
Nominal Discharge Current (8/20 $\mu$ s)	$I_n$	500A	500A	250A	100A
Residual Voltage at $I_{nv}$ (8/20 $\mu$ s)	$U_{res}$	<20V	<39V	<65V	<150V
Rated Spark Overvoltage	(Line-Ground)	8-10V	15-19V	30-36V	67-85V
	(Line-Line)	16-20V	30-38V	60-72V	134-170V
Response Time Overvoltage Protection	$t_A$	< 1 ns			
Insulation Resistance of the Protection	$R_{iso}$	$\geq 6 K\Omega$	$\geq 15 M\Omega$	$\geq 28 M\Omega$	$\geq 64 M\Omega$
Serial Resistance per Path	R	<0.1 $\Omega$			
Transverse Capacitance	C	<7,0 nF	<3,0 nF	<1,0 nF	<0,5 nF
Cut-off Frequency	$f_G$	0,6 MHz	0,9 MHz	1,4 MHz	3 MHz
<b>Mechanical</b>					
Temperature Range		-40 °C to +80 °C			
Terminal Cross Section Multi-strand		4 mm <sup>2</sup>			
Terminal Screw Torque		0.5 Nm			
Degree of Protection IEC/EN 60529		IP 20			
Housing Material		Thermoplastic; Beige; Extinguishing Degree V-0			
Mounting IEC/EN 60715		35 mm DIN Rail			
<b>Order Information</b>					
Order Code		5V	12V	24V	60V
SCL-2-xx		7045.16	7045.17	7045.18	7045.19

## RayDat SCL-2 Series

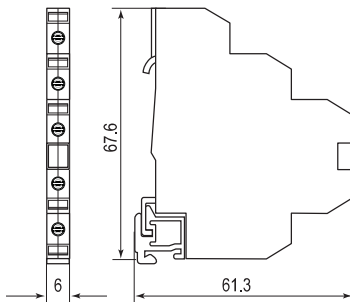
### Internal Configuration



#### Legend

BD Bi-directional TVS Diode  
PG Protective Grounding

### Dimensions & Packaging



SCL-2 Series	5V	12V	24V	60V
<b>Dimensions</b>				
Weight per Unit		26g		
Dimensions DIN 43880		1/3 TE		
Packaging Dimensions (Single Unit)		90 × 150 × 8 mm		
Minimum Package Quantity		40 pieces		