

Modular SPD for Single Pair  
**RayDat SLH-2 Series**  
 D1 • C1 • C2 • C3



IEC/EN Category: D1/C1/C2/C3  
 Mode of Protection: Longitudinal, Transverse  
 Coarse Protection: 3 Terminal GDT  
 Voltages: 5, 12, 15, 24, 30, 48, 60, 110V DC  
 Frequency Range: 30 MHz  
 Surge Discharge Ratings:  $I_n$ : 10 kA,  $I_{max}$ : 20 kA,  $I_{imp}$ : 2.5 kA  
 Series Load Current: 1 A  
 Enclosure: DIN 43880 2/3 TE, DIN Rail Mount  
 Terminals: Stranded to 4 mm<sup>2</sup>  
 Housing: Modular Design  
 Compliance: IEC/EN 61643-21

These efficient overvoltage barriers contain both coarse and fine protection stages and provide longitudinal and a transverse surge 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 carried out using fast bi-directional silicon avalanche diodes. Care is taken in the design of this fine protection stage to avoid capacitive line loading and thereby ensuring a low insertion loss and wide operating frequency range.

Series line impedances ensure energy coordination between the

coarse and a fine protection stages at all levels of the incident surge. To protect against the hazards of electric shock and fire which often results when power frequency contact occurs between power and communication lines, often called mains incursion, a thermo-clip is included on the primary protection stage 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 out of the base, the connection lines remain enabled.

**Technical Data**

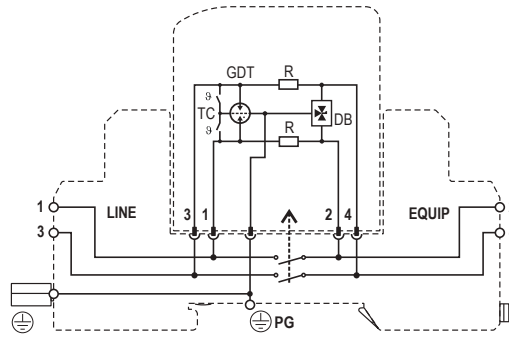
SLH-2 Series		5V	12V	15V	24V	30V	48V	60V	110V
<b>Electrical</b>									
Lines Protected		1 (2 Conductors)							
Nominal Operating Voltage (DC)	$U_n$	5V	12V	15V	24V	30V	48V	60V	110V
Maximum Continuous Operating Voltage (DC)	$U_c$	6V	15V	18V	28V	33V	52V	64V	170V
Rated Load Current at 25°C	$I_L$	1 A							
C2 Nominal Discharge Current (8/20µs)	$I_n$	10 kA							
Maximum Discharge Current (8/20µs)	$I_{max}$	20 kA							
D1 Impulse Current (10/350µs)	$I_{imp}$	2.5 kA							
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							
<b>Mechanical</b>									
Temperature Range		-40 °C to +80 °C							
Terminal Cross Section Multi-strand		4 mm <sup>2</sup> , 2.5 mm <sup>2</sup> Q Version							
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							
<b>Order Information</b>									
Order Code		5V	12V	15V	24V	30V	48V	60V	110V
SLH-2-xxx		7086.33	7086.34	7086.35	7086.36	7082.80	7086.37	7086.38	7086.39
SLH-2-xxxQ (Quick Connect Terminals)		7085.05	7085.06	7085.07	7085.08	7085.09	7085.10	7085.11	7085.12
SLH-2-xxxM (module)		7086.40	7086.41	7086.42	7086.43	7082.81	7086.44	7086.45	7086.46

# RayDat SLH-2 Series

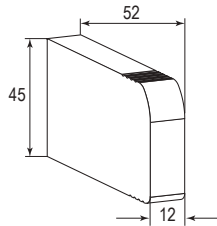
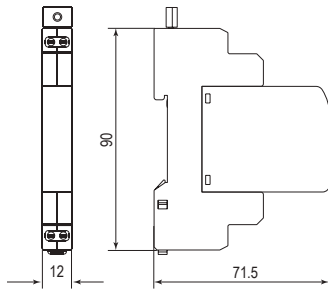
## Internal Configuration

### Legend

- DB Diode Block
- GDT Gas Discharge Tube
- PG Protective Grounding
- R Resistor
- TC Thermo-clip



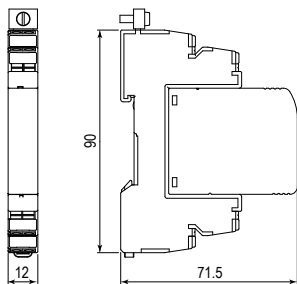
## Dimensions & Packaging



SLH-2 Series	5V	12V	15V	24V	30V	48V	60V	110V
<b>Dimensions</b>								
Weight per Unit	52 g							
Dimensions DIN 43880	2/3 TE							
Packaging Dimensions (Single Unit)	87 × 15 × 102 mm							
Minimum Package Quantity	15 pieces							

SLH-2-xxxM Series	5V	12V	15V	24V	30V	48V	60V	110V
<b>Dimensions</b>								
Weight per Unit	24 g							
Packaging Dimensions (Single Unit)	87 × 15 × 102 mm							
Minimum Package Quantity	15 pieces							

## Quick Connect Terminals



SLH-2-xxxQ Series	5V	12V	15V	24V	30V	48V	60V	110V
<b>Dimensions</b>								
Weight per Unit	54 g							
Dimensions DIN 43880	2/3 TE							
Packaging Dimensions (Single Unit)	87 × 15 × 102 mm							
Minimum Package Quantity	15 pieces							



Bases with Quick Connect Terminals enable faster installation and have built-in contacts to enhance vibration resistance.

