

Modular Surge Protective Devices (SPDs) for Data & Signal Lines



RayDat SRH Series

RayDat SRH-2*
RayDat SRH-2L*

*UL Listed

Special features:

- Very high surge ratings
- The connection lines remain enabled during module replacement
- Version available with potential free contact for fault detection
- Version available with LED visual indication for fault detection



Symbol Legend:



DIN Rail Mounting



Screw Connect Terminals



Quick Connect Terminals



Modular design



Shield Directly Grounded

These efficient overvoltage barriers contain both, coarse and fine protection stages and provide longitudinal and a transverse surge protection.

These products also feature an additional set of voltage free contacts which can be used for remote signalization and monitoring of the device's status. If the unit fails, the contacts change state.

The initial protection stage comprises a three-pole gas discharge tube (GDT) and is designed to divert the primary surge energy. The subsequent fine protection stage is carried out using fast bi-directional silicon avalanche diodes (SAD).

The design of the fine protection stage enables the product to avoid capacitive line loading and ensures 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 a surge incident. 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.

DATA SHEET

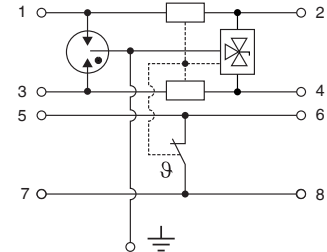
SPD with Remote Contacts RayDat SRH-2 Series D1 • C1 • C2 • C3

*UL Listed



IEC/EN Category: D1/C1/C2/C3
Surge Discharge Ratings: I_n : 10 kA, I_{max} : 20 kA, I_{imp} : 2.5 kA
Voltages: 5*, 12*, 15, 24*, 30*, 48, 60 V DC
Frequency Range: 30 MHz
Housing: Modular Design
Compliance: IEC/EN 61643-21
UL 497B 4th Edition

Configuration:



Technical Data

| SRH-2 Series | | 5* | 12* | 15 | 24* | 30* | 48 | 60 |
|---|---------------|------------------|---------|---------|---------|---------|---------|---------|
| Electrical | | | | | | | | |
| Lines Protected | | 1 (2 Conductors) | | | | | | |
| Nominal Operating Voltage (DC) | U_n | 5V | 12V | 15V | 24V | 30V | 48V | 60V |
| Maximum Continuous Operating Voltage (DC) | U_c | 6V | 15V | 18V | 28V | 33V | 52V | 64V |
| 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 |
| Rated Spark Overvoltage | (Line-Ground) | 7-10V | 16-21V | 21-25V | 31-37V | 36-44V | 57-69V | 68-84V |
| | (Line-Line) | 7-10V | 16-21V | 21-25V | 31-37V | 36-44V | 57-69V | 68-84V |
| 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 |
| Serial Resistance per Path | R | 1.6-2.0 Ω | | | | | | |
| Transverse Capacitance | C | 50 pF | | | | | | |
| Cut-off Frequency | f_G | 30 MHz | | | | | | |

Mechanical

| | | | | | | | | |
|--|---|--|--|--|--|--|--|--|
| Temperature Range | -40 °F to +176 °F [-40 °C to +80 °C] | | | | | | | |
| Terminal Cross Section Multi-strand (max.) | 12 AWG [4 mm², 2.5 mm² Q Version] | | | | | | | |
| Terminal Screw Torque | 4.5 lbf-in [0.5 Nm] | | | | | | | |
| Degree of Protection IEC/EN 60529 | IP 20 (built-in) | | | | | | | |
| Housing Material | Thermoplastic; Grey; Extinguishing Degree V-0 | | | | | | | |
| Mounting IEC/EN 60715 | 35 mm DIN Rail | | | | | | | |
| Remote Contacts Ratings | AC 250V/0.5 A, DC 50V/1 A | | | | | | | |

Order Information

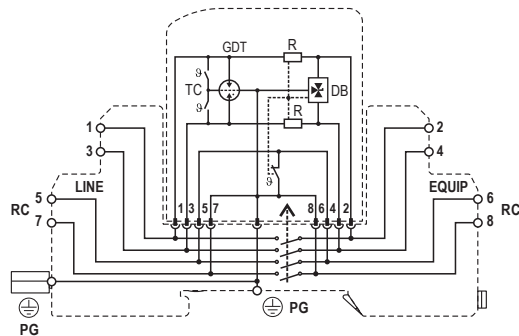
| Order Code | 5* | 12* | 15 | 24* | 30* | 48 | 60 |
|--------------------------------------|---------|---------|---------|---------|---------|---------|---------|
| SRH-2-xxx | 7086.17 | 7086.18 | 7086.19 | 7086.20 | 7086.21 | 7086.22 | 7086.23 |
| SRH-2-xxxQ (Quick Connect Terminals) | 7085.33 | 7085.34 | 7085.35 | 7085.36 | 7085.37 | 7085.38 | 7085.39 |
| SRH-2-xxxM (module) | 7086.25 | 7086.26 | 7086.27 | 7086.28 | 7086.29 | 7086.30 | 7086.31 |

RayDat SRH-2 Series

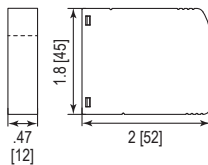
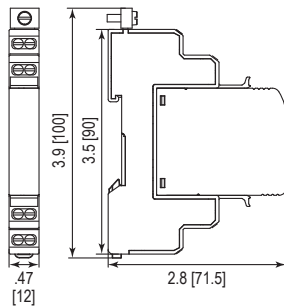
Internal Configuration

Legend

- DB Diode Block
- GDT Gas Discharge Tube
- PG Protective Grounding
- R Resistor
- RC Remote Control (NC)
- TC Thermo-clip



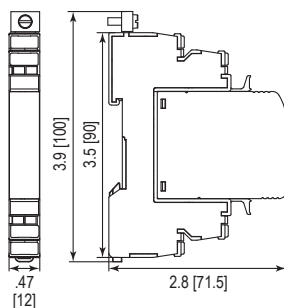
Dimensions & Packaging



| SRH-2 Series | 5 | 12 | 15 | 24 | 30 | 48 | 60 |
|------------------------------------|-----------------------------------|----|----|----|----|----|----|
| Dimensions | | | | | | | |
| Weight per Unit | 2.04 oz [58 g] | | | | | | |
| Dimensions DIN 43880 | 2/3 TE | | | | | | |
| Packaging Dimensions (Single Unit) | 3.4 x .59 x 4" [87 x 15 x 102 mm] | | | | | | |
| Minimum Package Quantity | 15 pieces | | | | | | |

| SRH-2-xxxM Series | 5 | 12 | 15 | 24 | 30 | 48 | 60 |
|------------------------------------|-----------------------------------|----|----|----|----|----|----|
| Dimensions | | | | | | | |
| Weight per Unit | .84 oz [24 g] | | | | | | |
| Packaging Dimensions (Single Unit) | 3.4 x .59 x 4" [87 x 15 x 102 mm] | | | | | | |
| Minimum Package Quantity | 15 pieces | | | | | | |

Quick Connect Terminals



| SRH-2-xxxQ Series | 5 | 12 | 15 | 24 | 30 | 48 | 60 |
|------------------------------------|-----------------------------------|----|----|----|----|----|----|
| Dimensions | | | | | | | |
| Weight per Unit | 2.11 oz [60 g] | | | | | | |
| Dimensions DIN 43880 | 2/3 TE | | | | | | |
| Packaging Dimensions (Single Unit) | 3.4 x .59 x 4" [87 x 15 x 102 mm] | | | | | | |
| Minimum Package Quantity | 15 pieces | | | | | | |

inches
[mm]

Information contained in this document is subject to change at any time without notice.



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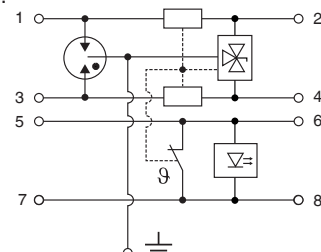
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G29-00-692 201120



IEC/EN Category: D1/C1/C2/C3
 Surge Discharge Ratings: I_n : 10 kA, I_{max} : 20 kA, I_{imp} : 2.5 kA
 Voltages: 5, 12, 24, 30 V DC
 Frequency Range: 30 MHz
 Housing: Modular Design
 Compliance: IEC/EN 61643-21
 UL 497B 4th Edition

Configuration:



Technical Data

SRH-2L Series

5 12 24 30

Electrical

| | | | | | |
|---|---------------|------------------|---------|---------|---------|
| Lines Protected | | 1 (2 Conductors) | | | |
| Nominal Operating Voltage (DC) | U_n | 5V | 12V | 24V | 30V |
| Maximum Continuous Operating Voltage (DC) | U_c | 6V | 15V | 28V | 33V |
| 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 | < 70V | < 80V |
| Rated Spark Overvoltage | (Line-Ground) | 7-10V | 16-21V | 31-37V | 36-44V |
| | (Line-Line) | 7-10V | 16-21V | 31-37V | 36-44V |
| Response Time Overvoltage Protection | t_A | < 1 ns | | | |
| Thermal Protection | | Yes | | | |
| Insulation Resistance of the Protection | R_{iso} | ≥ 6 KΩ | ≥ 15 MΩ | ≥ 28 MΩ | ≥ 33 MΩ |
| Serial Resistance per Path | R | 1.6-2.0 Ω | | | |
| Transverse Capacitance | C | 50 pF | | | |
| Cut-off Frequency | f_G | 30 MHz | | | |

Mechanical

| | | | | | |
|--|---|--|--|--|--|
| Temperature Range | -40 °F to +176 °F [-40 °C to +80 °C] | | | | |
| Terminal Cross Section Multi-strand (max.) | 12 AWG [4 mm²] | | | | |
| Terminal Screw Torque | 4.42 lbf-in [0.5 Nm] | | | | |
| Degree of Protection IEC/EN 60529 | IP 20 (built-in) | | | | |
| Housing Material | Thermoplastic; Grey; Extinguishing Degree V-0 | | | | |
| Mounting IEC/EN 60715 | 35 mm DIN Rail | | | | |
| Remote Contacts Ratings | AC 250V/0.5 A, DC 50V/1 A | | | | |

Order Information

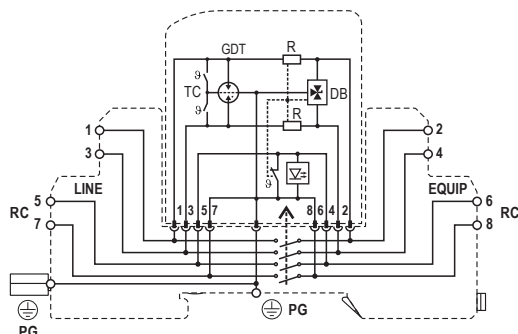
| | | | | |
|----------------------|---------|---------|---------|---------|
| Order Code | 5 | 12 | 24 | 30 |
| SRH-2-xxxL | 7085.44 | 7085.46 | 7085.48 | 7085.42 |
| SRH-2-xxxLM (module) | 7085.45 | 7085.47 | 7085.49 | 7085.43 |
| SRH-2-xxxLQ | 7085.56 | 7085.58 | 7085.60 | 7085.62 |

RayDat SRH-2L Series

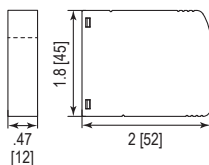
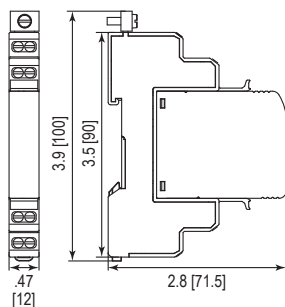
Internal Configuration

Legend

- DB Diode Block
- GDT Gas Discharge Tube
- PG Protective Grounding
- R Resistor
- RC Remote Control (NC)
- TC Thermo-clip



Dimensions & Packaging



SRH-2L Series 5 12 24 30

Dimensions

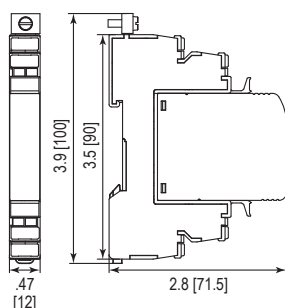
| | |
|------------------------------------|-----------------------------------|
| Weight per Unit | 2.04 oz [58 g] |
| Dimensions DIN 43880 | 2/3 TE |
| Packaging Dimensions (Single Unit) | 3.4 x .59 x 4" [87 x 15 x 102 mm] |
| Minimum Package Quantity | 15 pieces |

SRH-2-xxxLM Series 5 12 24 30

Dimensions

| | |
|------------------------------------|-----------------------------------|
| Weight per Unit | .85 oz [24 g] |
| Packaging Dimensions (Single Unit) | 3.4 x .59 x 4" [87 x 15 x 102 mm] |
| Minimum Package Quantity | 15 pieces |

Quick Connect Terminals



SRH-2LQ Series 5 12 24 30

Dimensions

| | |
|------------------------------------|-----------------------------------|
| Weight per Unit | 2.11 oz [60 g] |
| Dimensions DIN 43880 | 2/3 TE |
| Packaging Dimensions (Single Unit) | 3.4 x .59 x 4" [87 x 15 x 102 mm] |
| Minimum Package Quantity | 15 pieces |

inches
[mm]

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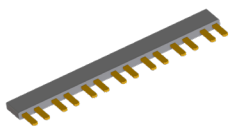
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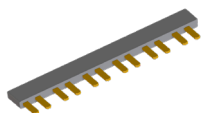
SPD with Visual Indication

RayDat SRH-2L Accessories**D1 • C1 • C2 • C3****RayDat PSU-14****RayDat PSU-14****127 621****Electrical**

| | | |
|-----------------|-----------|---------------------|
| Input Voltage | U_{out} | 21.5V DC ... 28V DC |
| Output Voltage | | max. 28V DC |
| Output Current | I_{out} | 2x2mA |
| Input Terminals | | 3 (+), 1 (-) |

RayDat PSU-PB-7P**RayDat PSU-PB-7P****127 622****Electrical**

| | |
|-----------------|---|
| Number of Poles | 7 |
|-----------------|---|

RayDat PSU-PB-6P**RayDat PSU-PB-6P****127 623****Electrical**

| | |
|-----------------|---|
| Number of Poles | 6 |
|-----------------|---|