

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

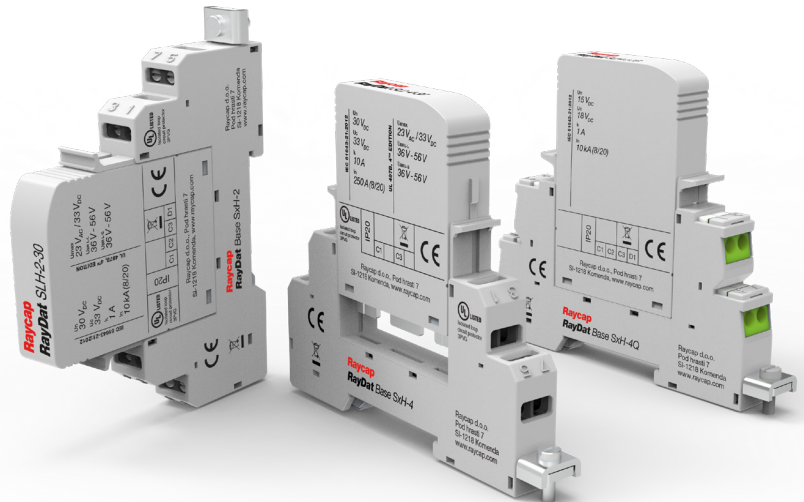
### RayDat SL Series

#### Special features:

- Very high surge ratings
- The connection lines remain enabled during module replacement
- High density – up to 4 protected lines at only 12mm width
- Equipped with Screw or Quick connect (spring loaded) terminals

RayDat SLH-2\*  
RayDat SLH-4\*  
RayDat SSH-3\*  
RayDat SLL-4\*  
RayDat SUI-4\*

\*UL Listed



#### Symbol Legend:



DIN Rail Mounting



Screw Connect Terminals



Quick Connect Terminals



Modular design



Shield Directly Grounded



Shield Indirectly Grounded

These efficient overvoltage barriers (except RayDat SLL) contain both, coarse and fine protection stages, and provide longitudinal and a transverse surge protection, while RayDat SLL contains fine protection stage only.

The initial protection stage comprises a three-pole gas discharge tube (GDT) that is designed to divert the primary surge energy. The subsequent fine protection stage is carried out using fast bi-directional silicon avalanche diodes (SAD). Care is taken in the design of the fine protection stage to avoid capacitive line loading, 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 a surge incident. To protect against the hazards of electric shock and fire, which often results when power frequency (or lines 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 from the base, the connection lines remain enabled.

# DATA SHEET

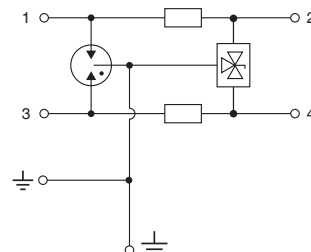
## Modular SPD for Single Pair RayDat SLH-2 Series D1 • C1 • C2 • C3

\*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

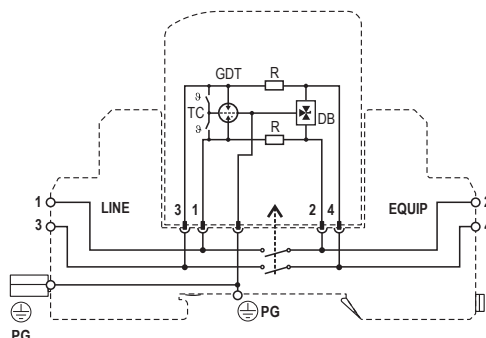
| SLH-2 Series                               |                  | 5                | 12      | 15                                            | 24      | 30 *    | 48      | 60      |
|--------------------------------------------|------------------|------------------|---------|-----------------------------------------------|---------|---------|---------|---------|
| Electrical                                 |                  |                  |         |                                               |         |         |         |         |
| Lines Protected                            |                  | 1 (2 Conductors) |         |                                               |         |         |         |         |
| Nominal Operating Voltage (DC)             | U <sub>n</sub>   | 5V               | 12V     | 15V                                           | 24V     | 30V     | 48V     | 60V     |
| Maximum Continuous Operating Voltage (DC)  | U <sub>c</sub>   | 6V               | 15V     | 18V                                           | 28V     | 33V     | 52V     | 64V     |
| Rated Load Current at 25°C                 | I <sub>L</sub>   | 1 A              |         |                                               |         |         |         |         |
| C2 Nominal Discharge Current (8/20µs)      | I <sub>n</sub>   | 10kA             |         |                                               |         |         |         |         |
| Maximum Discharge Current (8/20µs)         | I <sub>max</sub> | 20kA             |         |                                               |         |         |         |         |
| D1 Impulse Current (10/350µs)              | I <sub>imp</sub> | 2.5kA            |         |                                               |         |         |         |         |
| Residual Voltage at 5kA (8/20µs)           | U <sub>res</sub> | <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 <sub>A</sub>   | < 1 ns           |         |                                               |         |         |         |         |
| Thermal Protection                         |                  | Yes              |         |                                               |         |         |         |         |
| Insulation Resistance of the Protection    | R <sub>iso</sub> | ≥ 6 KΩ           | ≥ 15 MΩ | ≥ 18 MΩ                                       | ≥ 28 MΩ | ≥ 33 MΩ | ≥ 52 MΩ | ≥ 64 MΩ |
| Serial Resistance per Path                 | R                | 1.6-2.0Ω         |         |                                               |         |         |         |         |
| Transverse Capacitance                     | C                | 50pF             |         |                                               |         |         |         |         |
| Cut-off Frequency                          | f <sub>G</sub>   | 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 [0.5Nm]                            |         |         |         |         |
| 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                                |         |         |         |         |
| Order Information                          |                  |                  |         |                                               |         |         |         |         |
| Order Code                                 |                  | 5                | 12      | 15                                            | 24      | 30 *    | 48      | 60      |
| SLH-2-xxx                                  |                  | 7086.33          | 7086.34 | 7086.35                                       | 7086.36 | 7082.80 | 7086.37 | 7086.38 |
| SLH-2-xxxQ (Quick Connect Terminals)       |                  | 7085.05          | 7085.06 | 7085.07                                       | 7085.08 | 7085.09 | 7085.10 | 7085.11 |
| SLH-2-xxxM (module)                        |                  | 7086.40          | 7086.41 | 7086.42                                       | 7086.43 | 7082.81 | 7086.44 | 7086.45 |

## RayDat SLH-2 Series

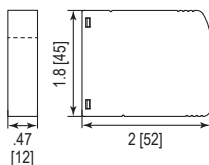
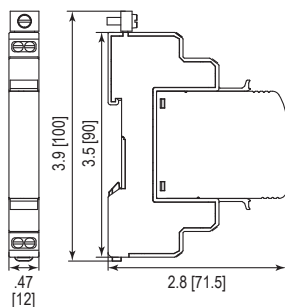
### Internal Configuration

#### Legend

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



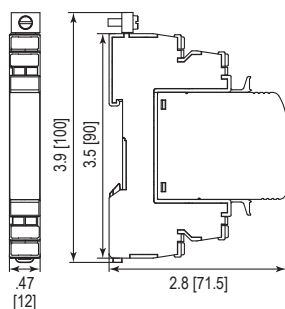
### Dimensions & Packaging



| SLH-2 Series                       | 5                                 | 12 | 15 | 24 | 30 | 48 | 60 |
|------------------------------------|-----------------------------------|----|----|----|----|----|----|
| <b>Dimensions</b>                  |                                   |    |    |    |    |    |    |
| Weight per Unit                    | 1.83 oz [52 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                         |    |    |    |    |    |    |

| SLH-2-xxxM Series                  | 5                                 | 12 | 15 | 24 | 30 | 48 | 60 |
|------------------------------------|-----------------------------------|----|----|----|----|----|----|
| <b>Dimensions</b>                  |                                   |    |    |    |    |    |    |
| 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



| SLH-2-xxxQ Series                  | 5                                 | 12 | 15 | 24 | 30 | 48 | 60 |
|------------------------------------|-----------------------------------|----|----|----|----|----|----|
| <b>Dimensions</b>                  |                                   |    |    |    |    |    |    |
| Weight per Unit                    | 1.90 oz [54 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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# DATA SHEET

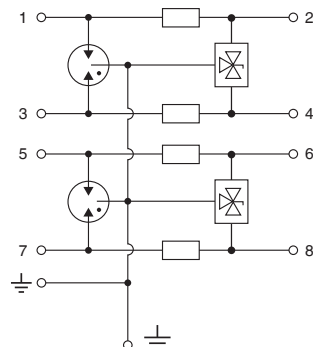
## Modular SPD for Two Pair RayDat SLH-4 Series D1 • C1 • C2 • C3

\*UL Listed



IEC/EN Category: D1/C1/C2/C3  
Surge Discharge Ratings:  $I_n$ : 10 kA,  $I_{max}$ : 20 kA,  $I_{imp}$ : 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

#### SLH-4 Series

5 12 15 24 30\* 48 60

#### Electrical

|                                           |               |                  |         |         |         |         |         |         |
|-------------------------------------------|---------------|------------------|---------|---------|---------|---------|---------|---------|
| Lines Protected                           |               | 2 (4 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)             | $I_{imp}$     | 5 kA             |         |         |         |         |         |         |
| Residual Voltage at 5 kA (8/20µs)         | $U_{res}$     | <22V             | <42V    | <48V    | <70V    | <80V    | <140V   | <160V   |
| Rated Spark Overvoltage                   | (Line-Ground) | 7-10V            | 17-21V  | 21-25V  | 31-37V  | 36-44V  | 57-69V  | 68-84V  |
|                                           | (Line-Line)   | 7-10V            | 17-21V  | 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                                |  |  |  |  |  |  |  |

#### Order Information

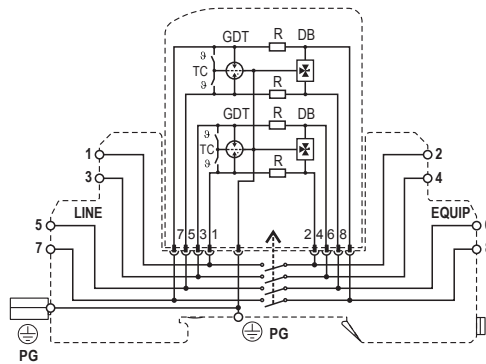
|                                      |         |         |         |         |         |         |         |
|--------------------------------------|---------|---------|---------|---------|---------|---------|---------|
| Order Code                           | 5       | 12      | 15      | 24      | 30*     | 48      | 60      |
| SLH-4-xxx                            | 7086.47 | 7086.48 | 7086.49 | 7086.50 | 7082.78 | 7086.51 | 7086.52 |
| SLH-4-xxxQ (Quick Connect Terminals) | 7085.13 | 7085.14 | 7085.15 | 7085.16 | 7085.17 | 7085.18 | 7085.19 |
| SLH-4-xxxM (module)                  | 7086.54 | 7086.55 | 7086.56 | 7086.57 | 7082.79 | 7086.58 | 7086.59 |

## RayDat SLH-4 Series

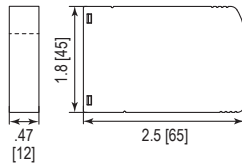
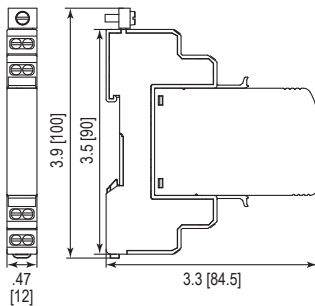
### Internal Configuration

#### Legend

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



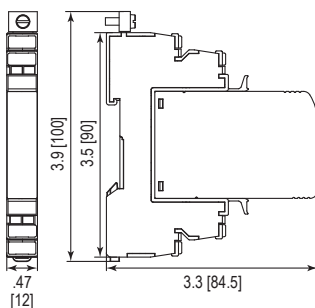
### Dimensions & Packaging



| SLH-4 Series                       | 5                                 | 12 | 15 | 24 | 30 | 48 | 60 |
|------------------------------------|-----------------------------------|----|----|----|----|----|----|
| <b>Dimensions</b>                  |                                   |    |    |    |    |    |    |
| Weight per Unit                    | 2.32 oz [66 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                         |    |    |    |    |    |    |

| SLH-4-xxxM Series                  | 5                                 | 12 | 15 | 24 | 30 | 48 | 60 |
|------------------------------------|-----------------------------------|----|----|----|----|----|----|
| <b>Dimensions</b>                  |                                   |    |    |    |    |    |    |
| Weight per Unit                    | 1.05 oz [30 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



| SLH-4-xxxQ Series                  | 5                                 | 12 | 15 | 24 | 30 | 48 | 60 |
|------------------------------------|-----------------------------------|----|----|----|----|----|----|
| <b>Dimensions</b>                  |                                   |    |    |    |    |    |    |
| Weight per Unit                    | 2.32 oz [66 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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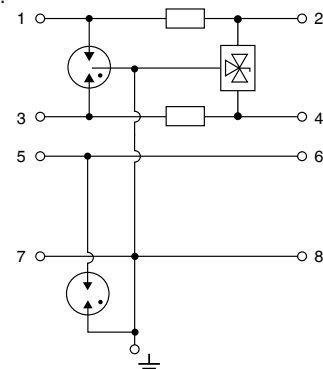
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G29-00-686 201120



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\*, 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

### SSH-3 Series

#### Electrical

|                                                         |                            | 5*               | 12*     | 15      | 24      | 30*     | 48      | 60      |
|---------------------------------------------------------|----------------------------|------------------|---------|---------|---------|---------|---------|---------|
| 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 5 kA (8/20µs)                       | (Line-Line) $U_{res}$      | <22V             | <42V    | <48V    | <70V    | <80V    | <140V   | <160V   |
| Rated Spark Overvoltage                                 | (Shield-Ground)            | 184-276V         |         |         |         |         |         |         |
|                                                         | (Line-Line), (Line-Ground) | 7-10V            | 16-21V  | 20-24V  | 30-36V  | 35-43V  | 55-68V  | 67-85V  |
| Response Time Overvoltage Protection (Shield-Ground)    | $t_A$                      | <100ns           |         |         |         |         |         |         |
|                                                         | (Line-Line), (Line-Ground) | <1 ns            |         |         |         |         |         |         |
| Insulation Resistance of the Protection (Shield-Ground) | $R_{iso}$                  | > 1 GΩ/100V      |         |         |         |         |         |         |
|                                                         | (Line-Line), (Line-Ground) | ≥ 6 KΩ           | ≥ 15 MΩ | ≥ 18 MΩ | ≥ 28 MΩ | ≥ 33 MΩ | ≥ 52 MΩ | ≥ 64 MΩ |
| Serial Resistance per Path                              | $R$                        | 1.6-2.0Ω         |         |         |         |         |         |         |
| Transverse Capacitance (Shield-Ground)                  | $C$                        | 5 pF             |         |         |         |         |         |         |
|                                                         | (Line-Line), (Line-Ground) | 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                                |

#### Order Information

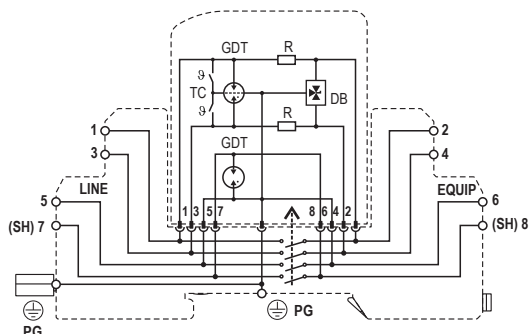
| Order Code                           | 5*      | 12*     | 15      | 24      | 30*     | 48      | 60      |
|--------------------------------------|---------|---------|---------|---------|---------|---------|---------|
| SSH-3-xxx                            | 7086.01 | 7086.02 | 7086.03 | 7086.04 | 7086.05 | 7086.06 | 7086.07 |
| SSH-3-xxxQ (Quick Connect Terminals) | 7086.90 | 7086.91 | 7086.92 | 7086.93 | 7086.94 | 7086.95 | 7086.96 |
| SSH-3-xxxM (module)                  | 7086.09 | 7086.10 | 7086.11 | 7086.12 | 7086.13 | 7086.14 | 7086.15 |

## RayDat SSH-3 Series

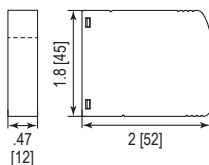
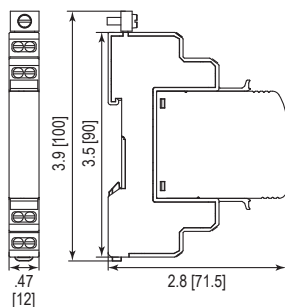
### Internal Configuration

#### Legend

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



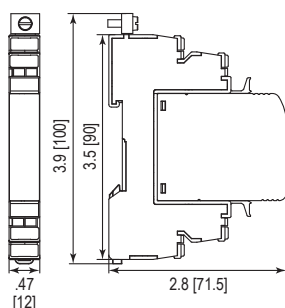
### Dimensions & Packaging



| SSH-3 Series                       | 5                                 | 12 | 15 | 24 | 30 | 48 | 60 |
|------------------------------------|-----------------------------------|----|----|----|----|----|----|
| <b>Dimensions</b>                  |                                   |    |    |    |    |    |    |
| 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                         |    |    |    |    |    |    |

| SSH-3-xxxM Series                  | 5                                 | 12 | 15 | 24 | 30 | 48 | 60 |
|------------------------------------|-----------------------------------|----|----|----|----|----|----|
| <b>Dimensions</b>                  |                                   |    |    |    |    |    |    |
| Weight per Unit                    | .91 oz [26 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



| SSH-3-xxxQ Series                  | 5                                 | 12 | 15 | 24 | 30 | 48 | 60 |
|------------------------------------|-----------------------------------|----|----|----|----|----|----|
| <b>Dimensions</b>                  |                                   |    |    |    |    |    |    |
| Weight per Unit                    | 2.18 oz [62 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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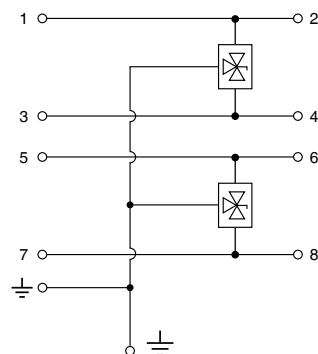
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G29-00-691 201120



IEC/EN Category: C1/C3  
 Surge Discharge Ratings:  $I_n$ : 250 A  
 Voltages: 30 V DC  
 Frequency Range: 30 MHz  
 Housing: Modular Design  
 Compliance: IEC/EN 61643-21  
 UL 497B 4th Edition

Configuration:



## Technical Data

### SLL-4 Series

30

#### Electrical

|                                           |                       |                  |
|-------------------------------------------|-----------------------|------------------|
| Lines Protected                           |                       | 2 (4 Conductors) |
| Nominal Operating Voltage (DC)            | $U_n$                 | 30 V             |
| Maximum Continuous Operating Voltage (DC) | $U_c$                 | 33 V             |
| Rated Load Current at 25°C                | $I_L$                 | 10 A             |
| C1 Nominal Discharge Current (8/20 μs)    | $I_n$                 | 250 A            |
| Residual Voltage at 5 kA (8/20 μs)        | (Line-Line) $U_{res}$ | < 80 V           |
| Rated Spark Overvoltage                   | (Line-Line)           | 36-44 V          |
|                                           | (Line-Ground)         | 36-44 V          |
| Response Time Overvoltage Protection      | (Line-Line) $t_A$     | < 1 ns           |
|                                           | (Line-Ground)         | < 1 ns           |
| Insulation Resistance of the Protection   | (Line-Line) $R_{iso}$ | ≥ 33 MΩ          |
|                                           | (Line-Ground)         | ≥ 33 MΩ          |
| Serial Resistance per Path                | $R$                   | 0.1 Ω            |
| Transverse Capacitance                    | (Line-Line) $C$       | 50 pF            |
|                                           | (Line-Line)           | 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                                |

#### Order Information

|                                     |         |
|-------------------------------------|---------|
| Order Code                          | 30      |
| SLL-4-xx                            | 7082.92 |
| SLL-4-xxQ (Quick Connect Terminals) | 7085.27 |
| SLL-4-xxM (module)                  | 7082.93 |

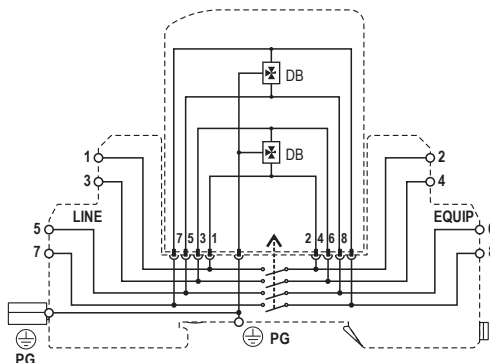


## RayDat SLL-4 Series

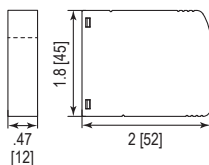
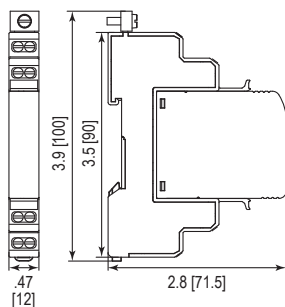
### Internal Configuration

#### Legend

DB Diode Block  
PG Protective Grounding



### Dimensions & Packaging



#### SLL-4 Series

30

##### Dimensions

|                                    |                                   |
|------------------------------------|-----------------------------------|
| Weight per Unit                    | 1.97 oz [56 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                         |

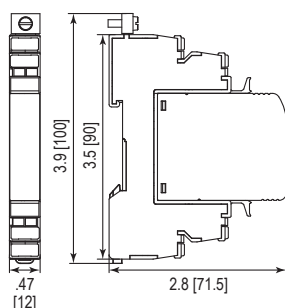
#### SLL-4-xxM Series

30

##### Dimensions

|                                    |                                   |
|------------------------------------|-----------------------------------|
| Weight per Unit                    | .77 oz [22 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



#### SLL-4-xxQ Series

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                         |

inches  
[mm]

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# DATA SHEET

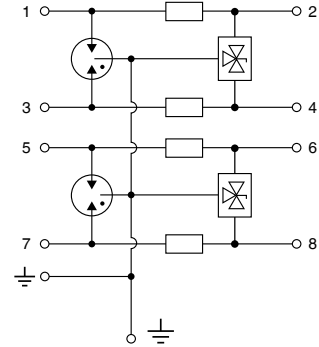
## SPD for Two Pair Exposed Lines RayDat SUI-4 Series D1 • C1 • C2 • C3

\*UL Listed



IEC/EN Category: D1/C1/C2/C3  
Surge Discharge Ratings:  $I_n$ : 20 kA,  $I_{max}$ : 30 kA,  $I_{imp}$ : 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

#### SUI-4 Series

5 12 15 24 30\* 48 60

#### Electrical

| Lines Protected                           |               | 2 (4 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)     | $I_n$         | 20 kA            |         |         |         |         |         |         |
| Maximum Discharge Current (8/20µs)        | $I_{max}$     | 30 kA            |         |         |         |         |         |         |
| D1 Impulse Current (10/350µs)             | $I_{imp}$     | 5 kA             |         |         |         |         |         |         |
| Residual Voltage at 5 kA (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 mm <sup>2</sup> ]                   |  |  |  |  |  |  |  |
| 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                                |  |  |  |  |  |  |  |

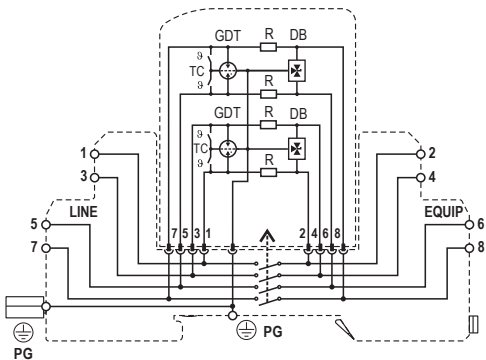
#### Order Information

| Order Code          | 5       | 12      | 15      | 24      | 30*     | 48      | 60      |
|---------------------|---------|---------|---------|---------|---------|---------|---------|
| SUI-4-xxx           | 7083.21 | 7083.22 | 7083.23 | 7083.24 | 7083.25 | 7083.26 | 7083.27 |
| SUI-4-xxxM (module) | 7083.29 | 7083.30 | 7083.31 | 7083.32 | 7083.33 | 7083.34 | 7083.35 |

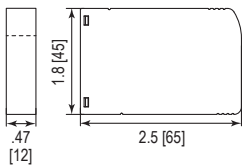
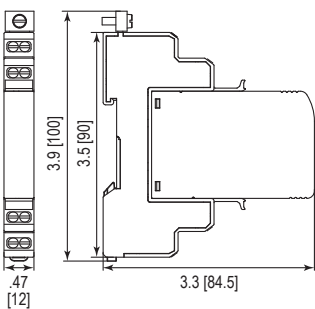
RayDat SUI-4 Series

Internal Configuration

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



Dimensions & Packaging



| SUI-4 Series                       | 5                                 | 12 | 15 | 24 | 30 | 48 | 60 |
|------------------------------------|-----------------------------------|----|----|----|----|----|----|
| Dimensions                         |                                   |    |    |    |    |    |    |
| Weight per Unit                    | 2.46 oz [70 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                         |    |    |    |    |    |    |

| SUI-4-xxxM Series                  | 5                                 | 12 | 15 | 24 | 30 | 48 | 60 |
|------------------------------------|-----------------------------------|----|----|----|----|----|----|
| Dimensions                         |                                   |    |    |    |    |    |    |
| Weight per Unit                    | 1.05 oz [30 g]                    |    |    |    |    |    |    |
| 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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