

SPD with Single Protection Mode

RayDat SUR-2 Series

D1 • C1 • C2 • C3

SMH-TDR Series



IEC/EN Category: D1/C1/C2/C3
 Mode of Protection: Longitudinal, Transverse
 Coarse Protection: 3 Terminal GDT
 Voltage: 110V DC
 Maximum Operating Voltage: 170V DC
 Serial Resistance per Path: 9-11 Ω
 Frequency Range: 16MHz
 Surge Discharge Ratings: I_n : 10kA, I_{max} : 20kA, I_{imp} : 2.5kA
 Series Load Current: 300mA
 Enclosure: DIN 43880 2/3TE, DIN Rail Mount
 Terminals: Stranded to 4 mm²
 Housing: Modular Design
 Compliance: IEC/EN 61643-21

The RayDat SUR-2 has been developed as a generic protector for use on data transmission circuits.

Coarse protection is provided by a three terminal gas discharge tube.

Internal thermal disconnectors are used to reduce the hazards of thermal runaway during fault conditions, or if mains incursion onto the low voltage data circuit occurs.

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.

If the module is unplugged out of the base, the connection lines remain enabled.

Technical Data

SUR-2 Series

110V

Electrical

Lines Protected		1 (2 Conductors)
Nominal Operating Voltage (DC)	U_n	110V
Maximum Continuous Operating Voltage (DC)	U_c	170V
Rated Load Current at 25°C	I_L	300mA
C2 Nominal Discharge Current (8/20 μ s)	I_n	10kA
Maximum Discharge Current (8/20 μ s)	I_{max}	20kA
D1 Impulse Current (10/350 μ s)	I_{imp}	2.5kA
Residual Voltage at 5kA (8/20 μ s)	U_{res}	<500V
Rated Spark Overvoltage	(Line-Ground)	184-276V
	(Line-Line)	184-550V
Response Time Overvoltage Protection	t_A	< 100 ns
Thermal Protection		Yes
Insulation Resistance of the Protection	R_{iso}	> 1 G Ω
Serial Resistance per Path	R	9-11 Ω
Transverse Capacitance	C	10pF
Cut-off Frequency	f_G	16MHz

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	IP 20
Housing Material	Thermoplastic; Grey; Extinguishing Degree V-0
Mounting IEC/EN 60715	35mm DIN Rail

Order Information

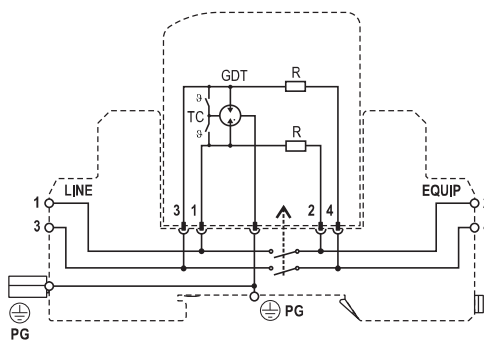
Order Code	110V
SUR-2-xxx	7086.77
SUR-2-xxxM (module)	7086.78

RayDat SUR-2 Series

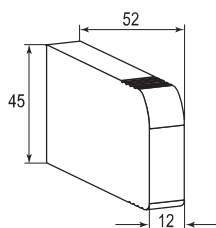
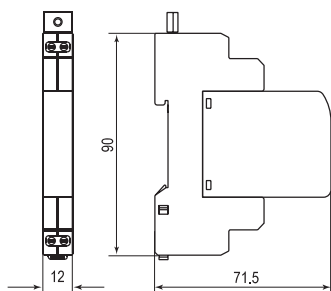
Internal Configuration

Legend

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



Dimensions & Packaging



SUR-2 Series

110V

Dimensions

Weight per Unit	52g
Dimensions DIN 43880	2/3 TE
Packaging Dimensions (Single Unit)	87 x 15 x 24 mm
Minimum Package Quantity	15 pieces

SUR-2-xxxM Series

110V

Dimensions

Weight per Unit	24g
Packaging Dimensions (Single Unit)	87 x 15 x 24 mm
Minimum Package Quantity	15 pieces

SPD for Two Pair with Single Protection Mode

RayDat SUR-4 Series

D1 • C1 • C2 • C3

SMH2-TDR Series



IEC/EN Category: D1/C1/C2/C3
 Mode of Protection: Longitudinal, Transverse
 Coarse Protection: 3 Terminal GDT
 Voltage: 110V DC
 Maximum Operating Voltage: 170V DC
 Serial Resistance per Path: 9-11 Ω
 Frequency Range: 16MHz
 Surge Discharge Ratings: I_n : 10kA, I_{max} : 20kA, I_{imp} : 5kA
 Series Load Current: 300mA
 Enclosure: DIN 43880 2/3TE, DIN Rail Mount
 Terminals: Stranded to 4 mm²
 Housing: Modular Design
 Compliance: IEC/EN 61643-21

The RayDat SUR-4 has been developed as a generic protector for use on data transmission circuits.

Coarse protection is provided by a three terminal gas discharge tube.

Internal thermal disconnectors are used to reduce the hazards of thermal runaway during fault conditions, or if mains incursion onto the low voltage data circuit occurs.

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.

If the module is unplugged out of the base, the connection lines remain enabled.

Technical Data

SUR-4 Series

110V

Electrical

Lines Protected		2 (4 Conductors)
Nominal Operating Voltage (DC)	U_n	110V
Maximum Continuous Operating Voltage (DC)	U_c	170V
Rated Load Current at 25°C	I_L	300mA
C2 Nominal Discharge Current (8/20 μ s)	I_n	10kA
Maximum Discharge Current (8/20 μ s)	I_{max}	20kA
D1 Impulse Current (10/350 μ s)	I_{imp}	5kA
Residual Voltage at 5kA (8/20 μ s)	U_{res}	<500V
Rated Spark Overvoltage	(Line-Ground)	184-276V
	(Line-Line)	184-550V
Response Time Overvoltage Protection	t_A	< 100 ns
Thermal Protection		Yes
Insulation Resistance of the Protection	R_{iso}	> 1 G Ω
Serial Resistance per Path	R	9-11 Ω
Transverse Capacitance	C	10pF
Cut-off Frequency	f_G	16MHz

Mechanical

Temperature Range	-40 °C to +80 °C
Terminal Cross Section	4 mm ²
Terminal Screw Torque	0.5 Nm
Degree of Protection IEC/EN 60529	IP 20
Housing Material	Thermoplastic; Grey; Extinguishing Degree V-0
Mounting IEC/EN 60715	35 mm DIN Rail

Order Information

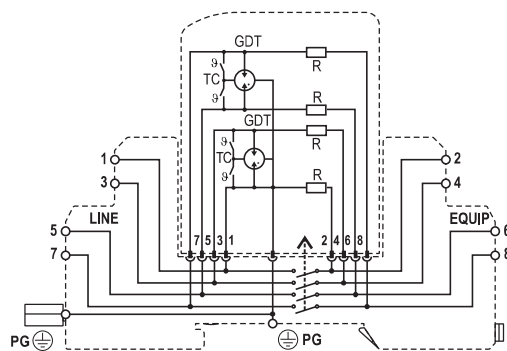
Order Code	110V
SUR-4-xxx	7086.79
SUR-4-xxxM (module)	7086.80

RayDat SUR-4 Series

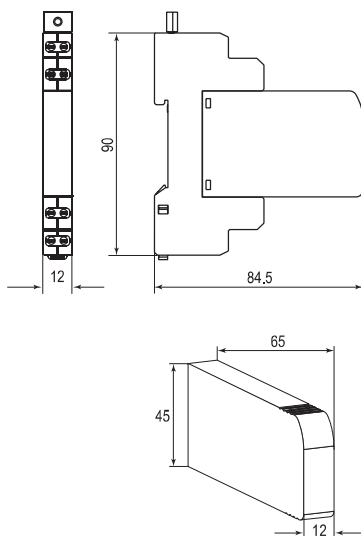
Internal Configuration

Legend

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



Dimensions & Packaging



SUR-4 Series

110V

Dimensions

Weight per Unit	66g
Dimensions DIN 43880	2/3 TE
Packaging Dimensions (Single Unit)	87 × 15 × 102mm
Minimum Package Quantity	15 pieces

SUR-4-xxxM Series

110V

Dimensions

Weight per Unit	24g
Packaging Dimensions (Single Unit)	87 × 15 × 102mm
Minimum Package Quantity	15 pieces