

DATA SHEET

SPD with Single Protection Mode

RayDat SUR-2 Series

D1 • C1 • C2 • C3



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 2/3 TE, DIN Rail Mount
Terminals:	Stranded to 4 mm ²
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

110

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	< 100ns
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 °F to +176 °F [-40 °C to +80 °C]
Terminal Cross Section Multi-strand (max.)	12 AWG [4 mm ²]
Terminal Screw Torque	4.5 lbf-in [0.5 Nm]
Degree of Protection IEC/EN 60529	IP20 (built-in)
Housing Material	Thermoplastic; Grey; Extinguishing Degree V-0
Mounting IEC/EN 60715	35 mm DIN Rail

Order Information

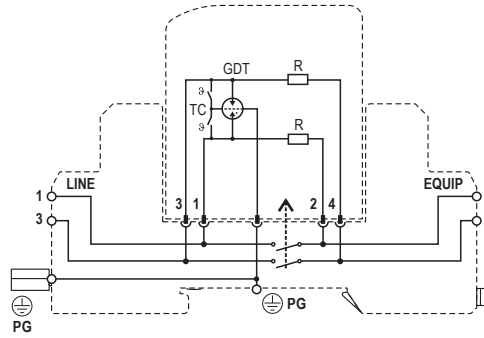
Order Code	110
SUR-2-xxx	7086.77
SUR-2-xxxM (module)	7086.78

RayDat SUR-2 Series

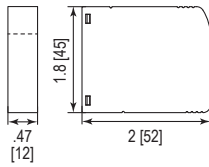
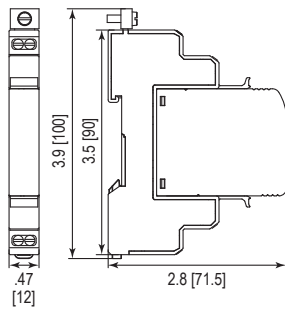
Internal Configuration

Legend

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



Dimensions & Packaging



SUR-2 Series	110
Dimensions	
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

SUR-2-xxxM Series	110
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

inches
[mm]

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

