

DATA SHEET

Modular SPD for Industrial Fieldbus Systems

RayDat NSB-3 Series

D1 • C1 • C2 • C3



IEC/EN Category: D1/C1/C2/C3

Voltages: 5, 12, 24, 48 V DC

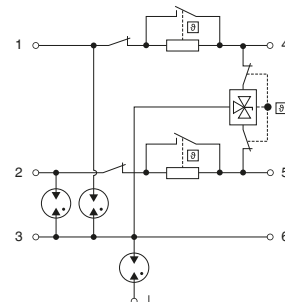
Frequency Range: 120 MHz

Housing: Modular Design

Compliance: IEC/EN 61643-21

UL 497B 4th Edition

Configuration:



Technical Data

NSB-3 Series

5 12 24 48

Electrical

Lines Protected		1 (3 Conductors)			
Nominal Operating Voltage (DC)	U_n	5V	12V	24V	48V
Maximum Continuous Operating Voltage (DC)	U_c	8.5V	15V	30V	54V
Rated Load Current at 40 °C	I_L	800 mA			
Rated Load Current at 70 °C	I_L	600 mA			
C2 Nominal Discharge Current (8/20 μs)	(Line-Line) I_n	10 kA			
	(Line-Ground)	10 kA			
C2 Total Nominal Discharge Current (8/20 μs)	I_n	10 kA			
C2 Voltage Protection Level (10 kV/5 kA)	(Line-Line) U_p	140V	150V	170V	210V
	(Line-Ground)	1100V	1100V	1100V	1150V
C3 Voltage Protection Level (1 kV/μs)	(Line-Line) U_p	24V	36V	70V	130V
	(Line-Ground)	650V	660V	680V	740V
D1 Impulse Current (10/350 μs)	(Line-Line) I_{imp}	2.5 kA			
	(Line-Ground)	2.5 kA			
D1 Total Impulse Current (10/350 μs)	I_{imp}	2.5 kA			
Rated Spark Overvoltage	(Line-Line)	9V - 25V	16V - 33V	33V - 51V	60V - 81V
	(Line-Ground)	193V - 311V	200V - 319V	217V - 337V	244V - 367V
Response Time Overvoltage Protection	t_A	< 1 ns			
Thermal Protection		Yes			
Insulation Resistance of the Protection	(Line-Line) R_{iso}	> 170 kΩ	> 7.5 MΩ	> 15 MΩ	> 27 MΩ
Serial Resistance per Path	R	1 Ω			
Capacitance	(Line-Line) C	typ. 25 pF			
	(Line-Ground)	typ. 10 pF			
Maximum Frequency	f_G	120 MHz			

Mechanical

Temperature Range	-40 °F to +176 °F [-40 °C to +80 °C]
Conductor Cross Section (max.)	12 AWG / 4 mm ² (solid) 14 AWG / 2.5 mm ² (flexible)
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
Operating State / Fault Indication	Green Flag / Red Flag

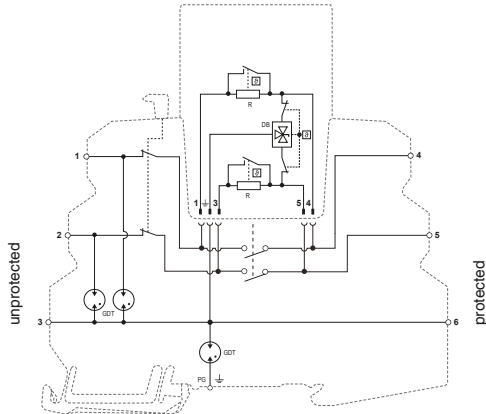
Order Information

Order Code	5	12	24	48
NSB-3-xx	7088.09	7088.11	7088.13	7088.54
NSB-3-xxM (module)	7088.10	7088.12	7088.14	7088.55

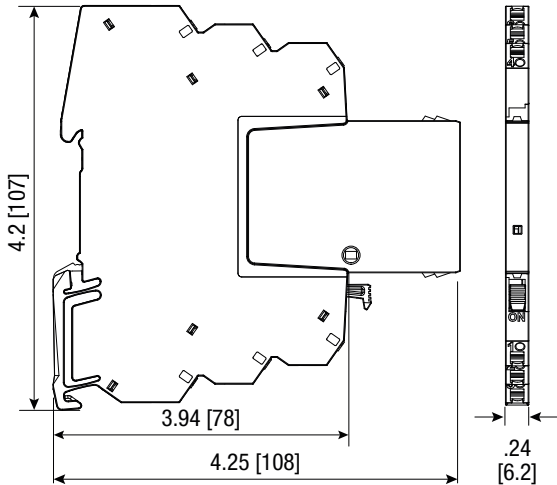
RayDat NSB-3 Series

Configuration

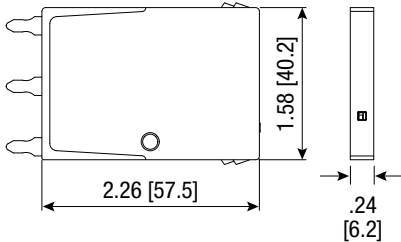
- Legend
- DB Diode Block
 - GDT Gas Discharge Tube
 - PG Protective Grounding
 - R Resistor



Dimensions & Packaging



NSB-3 Series	5	12	24	48
Dimensions				
Weight per Unit	2.12 oz [60g]			
Dimensions DIN 43880	.24" [6.2mm]			
Packaging Dimensions (Single Unit)	4.45×4.37×0.43" [113×111×11 mm]			
Minimum Package Quantity	15 pieces			



NSB-3-xxxM Series	5	12	24	48
Dimensions				
Weight per Unit	0.56 oz [16g]			
Packaging Dimensions (Single Unit)	4.45×4.37×0.43" [113×111×11 mm]			
Minimum Package Quantity	15 pieces			



Monitoring Unit
Transmitter
& Receiver
available for all
product variants.

inches
[mm]

