

# DATA SHEET

## Modular SPD for Industrial Fieldbus Systems

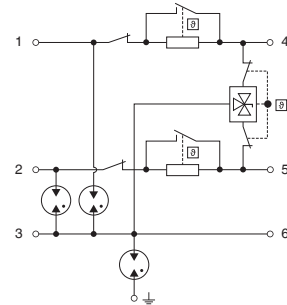
### RayDat NSB-3 Series

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

		1 (3 Conductors)			
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 (10kV/5kA)	(Line-Line)	140V	150V	170V	210V
	(Line-Ground)	1100V	1100V	1100V	1150V
C3 Voltage Protection Level (1 kV/μs)	(Line-Line)	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 <sup>2</sup> (solid)			
		14 AWG / 2.5 mm <sup>2</sup> (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

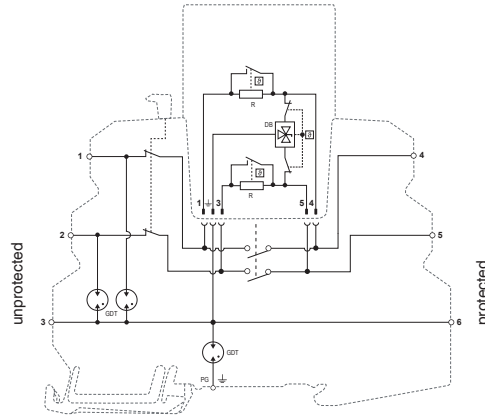
Order Code	5	12	24	48
NSB-3-xx	7088.09	7088.11	7088.13	7088.54
NSB-3-xxM (module)	7088.10	7088.12	7088.14	7088.55

# RayDat NSB-3 Series

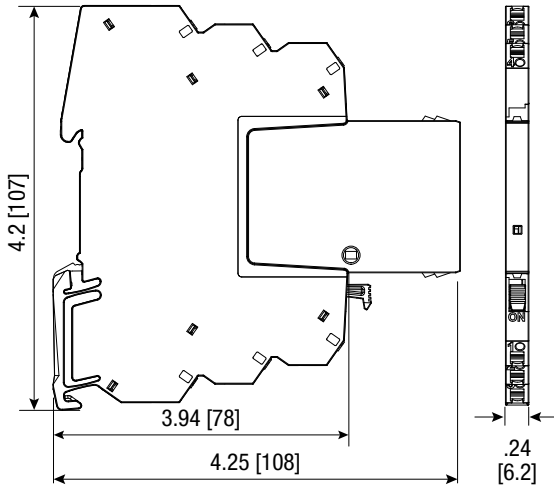
## Configuration

### Legend

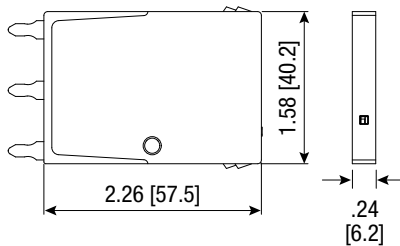
- DB Diode Block
- GDT Gas Discharge Tube
- PG Protective Grounding
- R Resistor



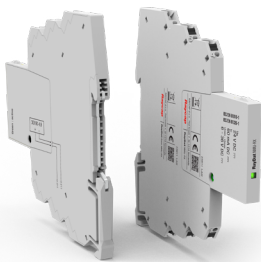
## Dimensions & Packaging



NSB-3 Series	5	12	24	48
<b>Dimensions</b>				
Weight per Unit	2.12 oz [60g]			
Dimensions DIN 43880	.24" [6.2mm]			
Packaging Dimensions (Single Unit)	4.72×4.33×0.39" [120×110×10mm]			
Minimum Package Quantity	15 pieces			



NSB-3-xxxM Series	5	12	24	48
<b>Dimensions</b>				
Weight per Unit	0.56 oz [16g]			
Packaging Dimensions (Single Unit)	4.72×4.33×0.39" [120×110×10mm]			
Minimum Package Quantity	15 pieces			



Monitoring Unit  
Transmitter  
& Receiver  
available for all  
product variants.

inches  
[mm]

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

