

DATA SHEET

Modular SPD for Industrial Fieldbus Systems

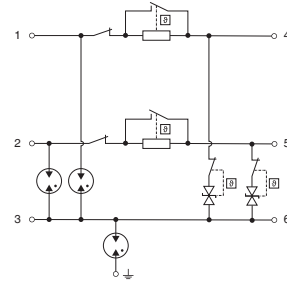
RayDat NSB-3 LF Series

D1 • C1 • C2 • C3



IEC/EN Category: D1/C1/C2/C3
 Voltages: 5, 12, 24, 48 V DC
 Frequency Range: up to 4 MHz
 Housing: Modular Design
 Compliance: IEC/EN 61643-21
 UL 497B 4th Edition

Configuration:



Technical Data

NSB-3 LF 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 μ s)	(Line-Line)	I_n 10 kA			
	(Line-Ground)	10 kA			
C2 Total Nominal Discharge Current (8/20 μ s)	I_n	10 kA			
C2 Voltage Protection Level (10kV/5kA)	(Line-Line)	U_p 80V	100V	160V	200V
	(Line-Ground)	1100V	1100V	1100V	1150V
C3 Voltage Protection Level (1 kV/ μ s)	(Line-Line)	U_p 48V	60V	120V	240V
	(Line-Ground)	650V	660V	680V	740V
D1 Impulse Current (10/350 μ s)	(Line-Line)	I_{imp} 2.5 kA			
	(Line-Ground)	2.5 kA			
D1 Total Impulse Current (10/350 μ s)	I_{imp}	2.5 kA			
Rated Spark Overvoltage	(Line-Line)	18V - 46V	32V - 62V	66V - 98V	120V - 158V
	(Line-Ground)	193V - 334V	200V - 354V	217V - 360V	244V - 390V
Response Time Overvoltage Protection	t_A	< 1 ns			
Thermal Protection		Yes			
Insulation Resistance of the Protection	(Line-Line) R_{iso}	> 340 k Ω	> 15 M Ω	> 30 M Ω	> 50 M Ω
Serial Resistance per Path	R	1 Ω			
Capacitance	(Line-Line) C	typ. 5 nF	typ. 2 nF	typ. 0.8 nF	typ. 0.4 nF
	(Line-Ground)	typ. 10 pF	typ. 10 pF	typ. 10 pF	typ. 10 pF
Maximum Frequency	f_G	550 kHz	1.2 MHz	2 MHz	4 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

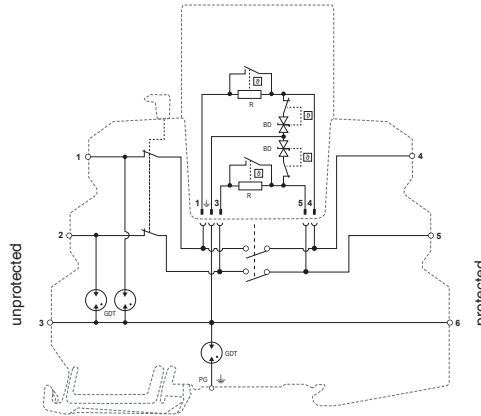
Order Code	5	12	24	48
NSB-3-xx LF	7088.15	7088.17	7088.19	7088.56
NSB-3-xxM LF (module)	7088.16	7088.18	7088.20	7088.57

RayDat NSB-3 LF Series

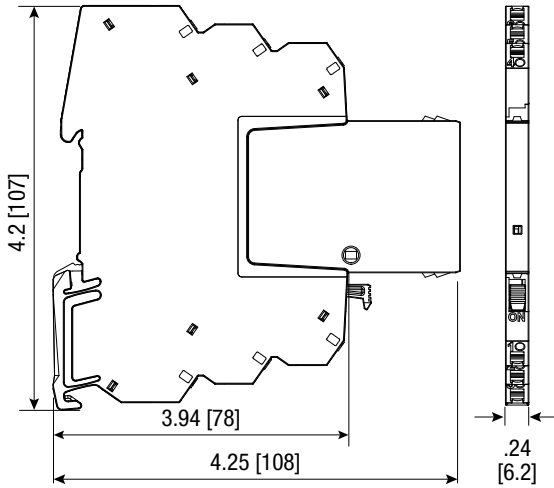
Configuration

Legend

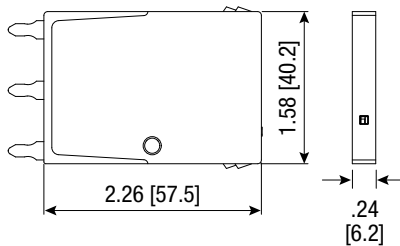
- BD Bi-directional TVS Diode
- GDT Gas Discharge Tube
- PG Protective Grounding
- R Resistor



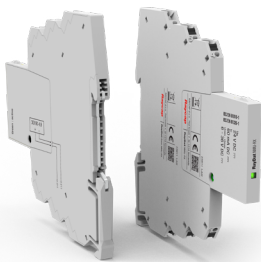
Dimensions & Packaging



NSB-3 LF Series	5	12	24	48
Dimensions				
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 LF Series	5	12	24	48
Dimensions				
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.

