

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

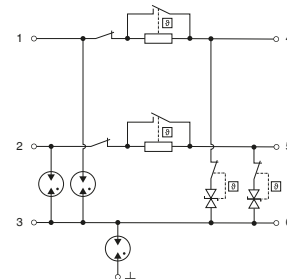
Frequency Range: up to 4 MHz

Housing: Modular Design

Compliance: IEC/EN 61643-21

UL 497B 4th Edition

Configuration:



Technical Data

NSB-3 LF Series

Electrical

		5	12	24
Lines Protected		1 (3 Conductors)		
Nominal Operating Voltage (DC)	U_n	5V	12V	24V
Maximum Continuous Operating Voltage (DC)	U_c	8.5V	15V	30V
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	80V	100V	160V
	(Line-Ground)	1100V	1100V	1100V
C3 Voltage Protection Level (1 kV/μs)	(Line-Line) U_p	48V	60V	120V
	(Line-Ground)	650V	660V	680V
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)	18V - 46V	32V - 62V	66V - 98V
	(Line-Ground)	193V - 334V	200V - 354V	217V - 360V
Response Time Overvoltage Protection	t_A		< 1 ns	
Thermal Protection			Yes	
Insulation Resistance of the Protection	(Line-Line) R_{iso}	> 340 kΩ	> 15 MΩ	> 30 MΩ
Serial Resistance per Path	R		1 Ω	
Capacitance	(Line-Line) C	typ. 5 nF	typ. 2 nF	typ. 0.8 nF
	(Line-Ground)	typ. 10 pF	typ. 10 pF	typ. 10 pF
Maximum Frequency	f_G	550 kHz	1.2 MHz	2 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

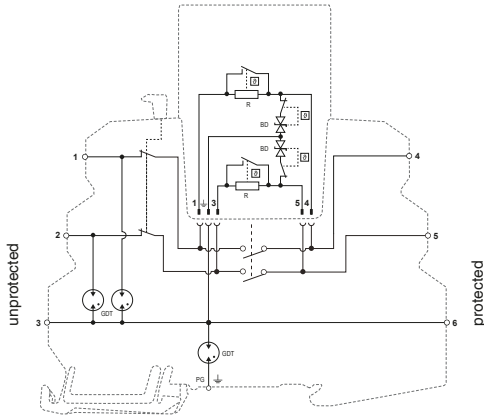
Order Information

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

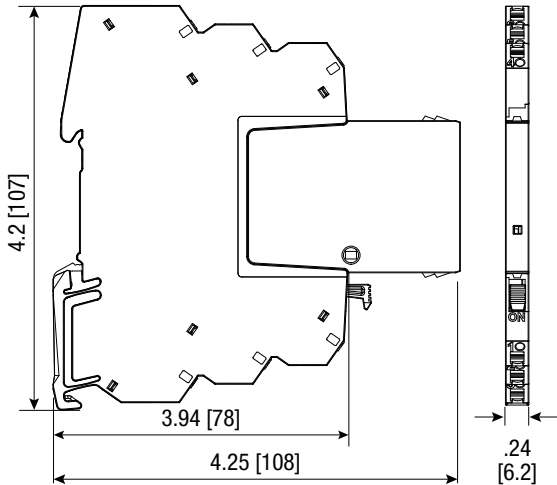
RayDat NSB-3 LF Series

Configuration

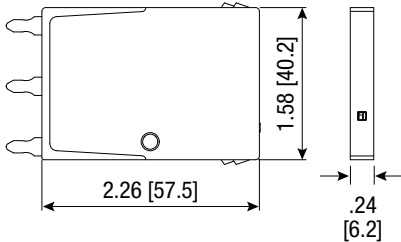
- Legend
- BD Bi-directional TVS Diode
 - GDT Gas Discharge Tube
 - PG Protective Grounding
 - R Resistor



Dimensions & Packaging



NSB-3 LF Series	5	12	24
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 LF Series	5	12	24
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]

