

DATA SHEET

Modular SPD for Industrial Fieldbus Systems

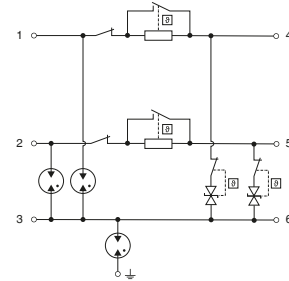
RayDat NSB-3 LF Series

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

Electrical

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 (10kV/5kA)	(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

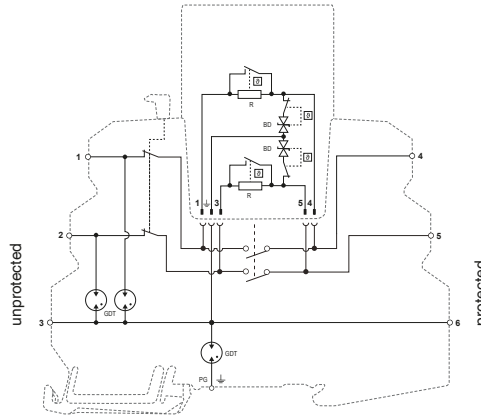
Order Code	5	12	24
NSB-3-xx LF	7088.15	7088.17	7088.19
NSB-3-xxM LF (module)	7088.16	7088.18	7088.20

RayDat NSB-3 LF Series

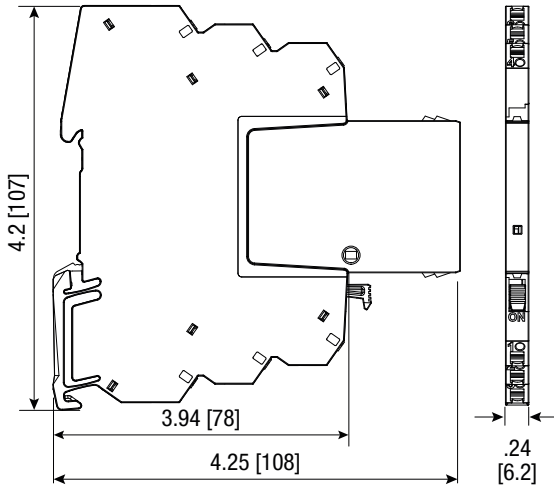
Configuration

Legend

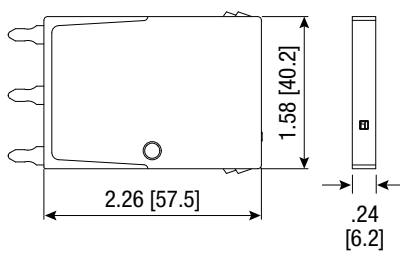
- BD Bi-directional TVS Diode
- GDT Gas Discharge Tube
- PG Protective Grounding
- R Resistor



Dimensions & Packaging



NSB-3 LF Series	5	12	24
Dimensions			
Weight per Unit	2.12 oz [60g]		
Dimensions DIN 43880	.24" [6.2 mm]		
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]

