DATA SHEET

SPD for Explosive Environments

RayDat Ex-2 Series

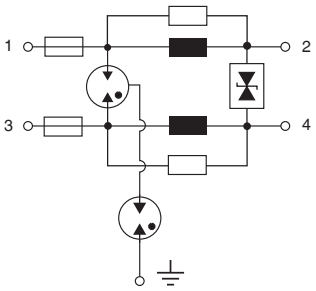
D1 • C1 • C2 • C3

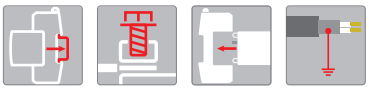
IEC/EN Category: D1/C1/C2/C3
Surge Discharge Ratings: I_n: 5 kA, I_{max}: 10 kA, I_{imp}: 1 kA
Voltages: 12, 24 V DC
Max. Operating Voltage: U_c: 15, 28 V DC
Terminals: Stranded to 4 mm²
Housing: Modular Design
Compliance: IIEC/EN 61643-21

CE 1180
IEC 60079-0:2011
IEC 60079-11:2011

Ex
EN 60079-0:2012+A11:2013
EN 60079-11:2012

Configuration:





	Input Power Pi	Temperature Class	Maximum Ambient
$U_o = U_i$	Pi=1W	T6	50 °C
$I_o = I_i$	Pi=1.3W	T5	55 °C
$P_o = P_i$	Pi=2W	T4	60 °C

Technical Data

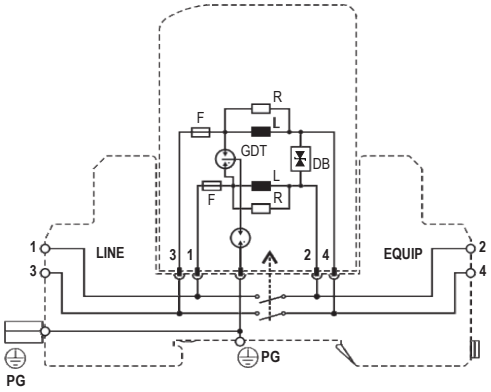
Ex-2 Series		12	24
Type			
Intrinsic Safety Parameters			
Explosion Protected		II 1G Ex ia IIC T* Ga (-40 °C ≤ Ta ≤ *°C)	
Maximum Input Voltage	U_i	16 V	29 V
Maximum Input Current	I_i	500 mA	
Maximum Input Power	P_i	2 W	
Maximum Internal Capacitance	C_i	10 nF	
Maximum Internal Inductance	L_i	0.11 mH	
Number of Protected Pairs		1 (2 Conductors)	
Electrical			
Nominal Operating Voltage (DC)	U_n	12 V	24 V
Maximum Continuous Operating Voltage (DC)	U_c	15 V	28 V
Rated Load Current at 25°C	I_L	500 mA	
Nominal Discharge Current (8/20 µs)	I_n	5 kA	
Maximum Discharge Current (8/20 µs)	I_{max}	10 kA	
D1 Impulse Current (10/350 µs)	I_{imp}	1 kA	
Residual Voltage at 5 kA (8/20 µs)	U_{res}	< 145 V	
Rated Spark Overvoltage (Line-Line)		16-21 V	31-37 V
(Line-Ground)		584-876 V	
Response Time Overvoltage Protection	t_A	< 1 ns	
Insulation Resistance at U_c	R_{iso}	≥ 15 MΩ	≥ 28 MΩ
Insulation Resistance at 500 V DC (Line-Ground)		> 1 GΩ	
Serial Resistance per Path	R	<1 Ω	
Transverse Capacitance	C	<10 pF	
Cut-off Frequency	f_G	3 MHz	
Mechanical			
Terminal Cross Section Multi-strand (max.)		12 AWG [4 mm²]	
Terminal Screw Torque		4.5 lbf·in [0.5 Nm]	
Degree of Protection IEC/EN 60529		IP 20 (built-in)	
Housing Material		Thermoplastic; Grey; Extinguishing Degree V-0	
Mounting IEC/EN 60715		35 mm DIN Rail	
Order Information			
Order Code		**12**	**24**
Ex-2-xx		704 120	704 121

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

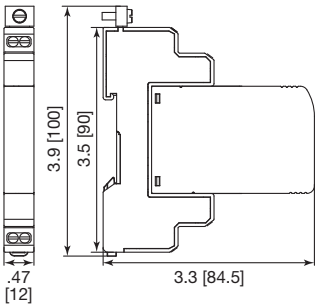
Internal Configuration

Legend

DB	*Diode Block*
F	*Fuse*
GDT	*Gas Discharge Tube*
L	*Inductor*
PG	*Protective Grounding*
R	*Resistor*



Dimensions & Packaging



Ex-2 Series	12	24
Dimensions		
Weight per Unit	3.10 oz [88 g]	
Dimensions DIN 43880	2/3 TE	
Packaging Dimensions (Single Unit)	3.4 × .59 × 4" [87 × 15 × 102 mm]	
Minimum Package Quantity	15 pieces	

inches
[mm]

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

RoHS COMPLIANT

© 2020 Raycap All rights reserved.