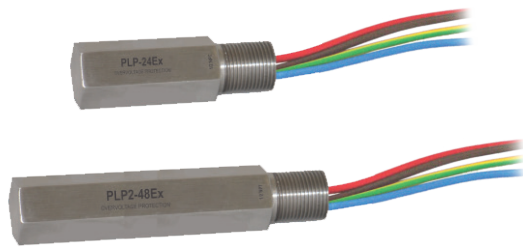


# DATA SHEET

## SPD for Explosive Environments RayDat PLP Ex Series D1 • C1 • C2 • C3



IEC/EN Category: D1/C1/C2/C3  
 Mode of Protection: Longitudinal, Transverse  
 Coarse Protection: 3 Terminal GDT  
 Voltages: 24, 48, 24/5 V DC  
 Maximum Operating Voltage:  $U_c$ : 33, 54, 33/7.5 VDC  
 Frequency Range: 30 MHz  
 Surge Discharge Ratings:  $I_n$ : 10 kA,  $I_{max}$ : 20 kA,  $I_{imp}$ : 2.0 kA  
 Enclosure: Stainless Steel IP67  
 Terminals: Connecting Cables 1 mm<sup>2</sup>, 250 mm length  
 Housing: In-line 1/2" Conduit Fitting  
 Compliance: IEC/EN 61643-21



The RayDat PLP Ex Series is intended to provide protection to low voltage signal and data circuits located in potentially explosive environments.

It is intended for use on inherently safe circuits in accordance with ATEX directive. The protection module should be located as close to the end-user equipment being protected as possible.

The circuit consists of a multi-stage protector providing both

common (longitudinal) mode and differential (transverse) mode protection.

Coarse protection is provided using a three terminal gas discharge tube while fine protection is provided using a high speed bi-directional silicon stage. Care is taken to ensure coordination between these two stages without voltage or surge current blind spots occurring.

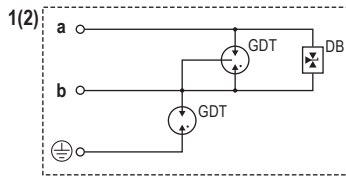
### Technical Data

PLPEx		PLP-24Ex	PLP2-24Ex	PLP2-48Ex	PLP-24/5Ex	PLP3L-24Ex
<b>Type</b>						
Intrinsic Safety Parameters						
IEC Type Examination Certificate	Baseefa	Baseefa 14ATEX0364X Ex II 1GD Ex ia IIC T6 Ga (-30 °C ≤ Ta ≤ 50 °C)				
	IEC	IECEx BAS 15.0012X Ex ia IIIC T85 °C Da (-30 °C ≤ Ta ≤ 50 °C)				
Maximum Input Voltage	$U_i$	50V				
Maximum Input Current	$I_i$	800 mA				
Maximum Input Power	$P_i$	2W				
Maximum Internal Inductance	$L_i$	60 μH				
<b>Electrical</b>						
Nominal Operating Voltage (DC)	$U_n$	24V	24V	48V	24V/5V	24V
Maximum Continuous Operating Voltage (DC)	$U_c$	33V	33V	54V	33V/7.5V	33V
Rated Spark Overvoltage	(Line-Ground)	584-864V	584-864V	584-864V	584-864V	584-864V
	(Line-Line)	36-44V	36-44V	58-68V	36-44V, 9-13V	36-44V
Total Nominal Discharge Current (8/20 μs)	$I_n$	5 kA	10 kA	10 kA	10 kA	7.5 kA
Total Discharge Current (8/20 μs)	$I_{max}$	10 kA	20 kA	20 kA	20 kA	15 kA
Total Impulse Current (10/350 μs)	$I_{imp}$	1.0 kA	2.0 kA	2.0 kA	2.0 kA	1.5 kA
Residual Voltage at $I_{max}$ (8/20 μs)	(Line-Line) $U_{res}$	< 1.3 kV	< 1.3 kV	< 1.3 kV	< 1.3 kV	< 1.3 kV
Response Time Overvoltage Protection	$t_A$	< 1 ns				
Insulation Resistance of the Protection (Line-Line)	$R_{iso}$	> 32 MΩ	> 32 MΩ	> 32 MΩ	> 32 MΩ/75 kΩ	> 32 MΩ
Insulation Resistance at U(Line-Ground) = 500 VDC	R	> 1 GΩ				
Transverse Capacitance	C	< 30 pF				
Cut-off Frequency	$f_G$	30 MHz				
<b>Mechanical</b>						
Ambient Temperature Range		-22 °F < Ta < +140 °F [-30 °C < Ta < +60 °C]				
Connection Cables	D × L	17 AWG × 9.8" [1 mm <sup>2</sup> × 250 mm]				
Degree of Protection IEC/EN 60529		IP67				
Housing Material		Stainless Steel				
Dimension	Length	3.07" [78 mm]	4.72" [120 mm]	4.72" [120 mm]	4.72" [120 mm]	4.72" [120 mm]
<b>Order Information</b>						
Order Code		PLP-24Ex	PLP2-24Ex	PLP2-48Ex	PLP-24/5Ex	PLP3L-24Ex
1/2" NPT		127 594	127 600	127 597	127 603	127 606
M20 × 1.5		127 595	127 601	127 598	127 604	127 607
G 1/2" (BSP 1/2 inch)		127 596	127 602	127 599	127 605	127 608

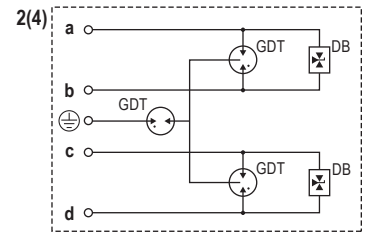
# RayDat PLP Ex Series

## Internal Configuration

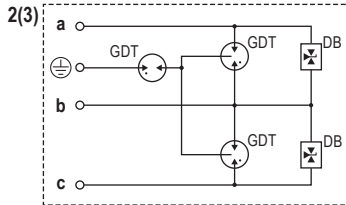
**Legend**  
 DB Diode Block  
 GDT Gas Discharge Tube



**PLP-24Ex**

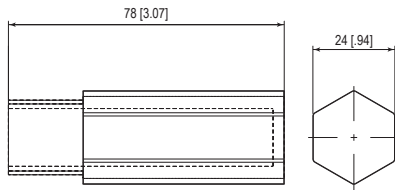


**PLP2-xxEx  
 PLP-24/5Ex**

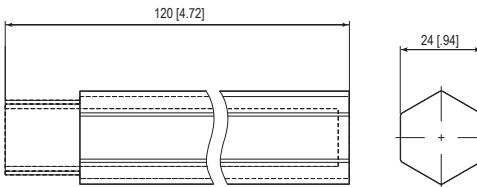


**PLP3L-24Ex**

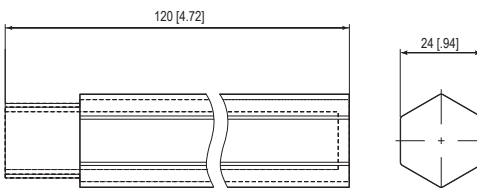
## Dimensions & Packaging



PLP-24Ex	PLP-24 Ex 1/2" NPT	PLP-24 Ex M 20 x 1/2"	PLP-24 Ex G 1/2"
<b>Dimensions</b>			
Weight per Unit	5.99 oz [170 g]		
Packaging Dimensions (Single Unit)	1.34 x 1.34 x 4.25" [34 x 34 x 108 mm]		
Minimum Package Quantity	6 pieces		



PLP2-xxEx	PLP2-xx Ex 1/2" NPT	PLP2-xx Ex M 20 x 1/2"	PLP2-xx Ex G 1/2"
<b>Dimensions</b>			
Weight per Unit	10.22 oz [290 g]		
Packaging Dimensions (Single Unit)	1.34 x 1.34 x 5.43" [34 x 34 x 138 mm]		
Minimum Package Quantity	6 pieces		



PLP3L-24Ex	PLP3L-24 Ex 1/2" NPT	PLP3L-24 Ex M 20 x 1/2"	PLP3L-24 Ex G 1/2"
<b>Dimensions</b>			
Weight per Unit	10.22 oz [290 g]		
Packaging Dimensions (Single Unit)	1.34 x 1.34 x 5.43" [34 x 34 x 138 mm]		
Minimum Package Quantity	6 pieces		

inches  
[mm]

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

