

# IIB Group Power Supply for Hazardous Area Equipment

## Model PSD1001C

### Characteristics:

#### General Description:

The PSD1001C is a single channel Din Rail Power Supply to drive measuring, process control equipments in IIB Group Hazardous Area; it provides isolation between input and output (1.5 KV).

Typical application is to drive high power devices, transmitter or other equipment with 13 V, 100 mA supply capability.

#### Function:

1 channel IIB Group power supply to operate Hazardous Area Loads providing isolation (input/output).

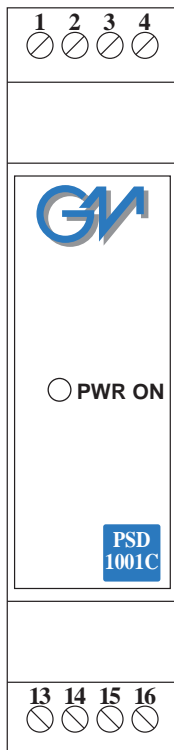
#### Signalling LED:

Power supply indication (green).

#### EMC:

Fully compliant with CE marking applicable requirements.

### Front Panel and Features:



- SIL 2 - SIL 3 according IEC 61508, IEC 61511.
- High Output Capability Power Supply for Hazardous Area equipment.
- Isolation Input/Output.
- EMC Compatibility to EN61000-6-2, EN61000-6-4.
- Output short circuit proof and current limited.
- ATEX, UL & C-UL Certifications.
- High Reliability, SMD components.
- Simplified installation using standard DIN Rail with plug-in terminal blocks.
- 250 Vrms (Um) max. voltage applied to the instruments associated with barrier.

### Technical Data:

#### Supply:

24 V nom (21.5 to 30 V) reverse polarity protected ripple within voltage limits  $\leq 5$  Vpp.

**Current consumption @ 24 V:** 110 mA with 80 mA nominal load, 130 mA with 100 mA load and 150 mA with short circuit output.

**Max. power consumption:** 3.80 W at 30 V supply voltage with short circuit output.

#### Isolation (Test Voltage):

I.S. Out/Supply 1.5 KV;

#### Output:

100 mA at 13.5 V, 150 mA at 10 V (20.5 V no load, 68  $\Omega$  series resistance).

**Short circuit current:**  $\geq 160$  mA.

#### Compatibility:


 CE mark compliant, conforms to 94/9/EC Atex Directive and to 89/336/CEE EMC Directive.

#### Environmental conditions:

**Operating:** Temperature limits -20 to + 60 °C, relative humidity max 90 % non condensing, up to 35 °C.

**Storage:** Temperature limits - 40 to + 80 °C.

#### Safety Description:

 II (1) G D [EEx ia] IIB or I M2 [EEx ia] I, II 3 G EEx nA IIC [IIB] T4 associated electrical apparatus.

$U_o/V_{oc} = 23.6$  V,  $I_o/I_{sc} = 352.8$  mA,  $P_o/P_o = 1674$  mW at terminals 13/15-14/16.

  $U_m = 250$  Vrms, -20 °C  $\leq T_a \leq 60$  °C.

**Approvals:** DMT 01 ATEX E 042 X conforms to EN50014, EN50020, UL & C-UL E222308 conforms to UL913 (Div.1), UL 60079-0 (General, All Zones), UL60079-11 (Intrinsic Safety "i" Zones 0 & 1), UL60079-15 ("n" Zone 2), UL 1604 (Div.2) for UL and CSA-C22.2 No. 157-92 (Div.1), CSA-E60079-0 (General, All Zones), CSA-E60079-11 (Intrinsic Safety "i" Zones 0 & 1), CSA-C22.2 No. 213-M1987 (Div. 2) and CSA-E60079-15 ("n" Zone 2) for C-UL. EXIDA Report No. GM04/10-26 R001, SIL 2 - SIL 3 according to IEC 61508, IEC 61511. Please refer to functional safety manual for SIL applications.

#### Mounting:

T35 DIN Rail according to EN50022.

**Weight:** about 120 g.

**Connection:** By polarized plug-in disconnect screw terminal blocks to accommodate terminations up to 2.5 mm<sup>2</sup>.

**Location:** Safe Area/Non Hazardous Locations or Zone 2, Group IIC T4, Class I, Division 2, Groups A, B, C, D Temperature Code T4 and Class I, Zone 2, Group IIC, IIB, IIA T4 installation.

**Protection class:** IP 20.

**Dimensions:** Width 22.5 mm, Depth 99 mm, Height 114.5 mm.

### Ordering Information:

<b>Model:</b>	<b>PSD1001C</b>	
Power Bus enclosure		/B

## Parameters Table:

Safety Description	Maximum External Parameters			
	Group Cenelec	Co/Ca ( $\mu\text{F}$ )	Lo/La (mH)	Lo/Ro ( $\mu\text{H}/\Omega$ )
<b>Terminals 13/15-14/16</b>				
Uo/Voc = 23.6 V				
Io/Isc = 352.8 mA	II B	0.970	1.08	68.6
Po/Po = 1674 mW	II A	3.500	2.16	137.2

### NOTE for USA and Canada:

II B equal to Gas Groups C, D, E, F and G.

II A equal to Gas Groups D, E, F and G.



## Function Diagram:

**HAZARDOUS AREA / HAZARDOUS LOCATIONS**  
 CLASS I, DIVISION 1, GROUPS C, D and  
 CLASS II, DIVISION 1, GROUPS E, F, G or CLASS I, Zone 0, GROUP IIB

**SAFE AREA / NON HAZARDOUS LOCATIONS or**  
 ZONE 2, GROUP IIC T4, CLASS I, DIVISION 2, GROUPS A, B, C, D T-Code T4,  
 CLASS I, ZONE 2, GROUP IIC T4

