

4 Channels Power Supply for Hazardous Area Equipment

Model PSD1001

Characteristics:

General Description:

The PSD1001 is a quad channel Din Rail Power Supply to drive measuring, process control equipments in Hazardous Area; it provides isolation between input and output (1.5 KV).

Typical application is to drive 4-20 mA 2 wire transmitter with local indication (no repetition of current in Safe Area).

Output channels can be paralleled if more power is required.

Function:

4 channels power supply independently or in parallel to operate Hazardous Area Loads providing isolation (input/output).

Signalling LED:

Power supply indication (green).

EMC:

Fully compliant with CE marking applicable requirements.

Technical Data:

Supply:

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

Current consumption @ 24 V: 110 mA four channels at 20 mA nominal load, 140 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:

20 mA per channel at 15 V (20.5 V no load, 273 Ω series resistance).

Short circuit current: ≥ 24 mA per channel (26 mA typical).

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] IIC or I M2 [EEx ia] I, II 3 G EEx nA IIC T4 associated electrical apparatus.

$U_o/V_{oc} = 23.6$ V, $I_o/I_{sc} = 88.2$ mA, $P_o/P_{sc} = 519$ mW

at terminals 13-14, 15-16, 9-10, 11-12.

 $U_m = 250$ 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, TCCEXEE (Russia) Nr.665 according to GOST R 51330.0-99, 51330.10-99 [Exia]IIC X, TCCEXEE (Ukraine) Nr.665 according to GOST 12.2.007.0, 22782.0, 22782.5 ExiaIIC X, Gosgortekhnadzor of Russia Permit Nr. PPC 04-11284. 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.

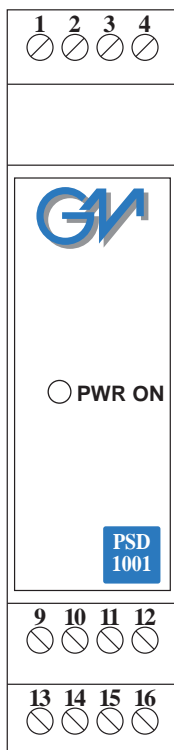
Connection: By polarized plug-in disconnect screw terminal blocks to accommodate terminations up to 2.5 mm².

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.

Front Panel and Features:



- SIL 2 - SIL 3 according IEC 61508, IEC 61511.
- 4 Channels Power Supply for Hazardous Area equipment.
- Flexible modular multi output capability.
- Isolation Input/Output.
- EMC Compatibility to EN61000-6-2, EN61000-6-4.
- Output short circuit proof and current limited.
- ATEX, UL & C-UL, Russia and Ukraine Certifications.
- High Reliability, SMD components.
- High Density, four channels per unit.
- Simplified installation using standard DIN Rail with plug-in terminal blocks.
- 250 Vrms (U_m) max. voltage applied to the instruments associated with barrier.

Ordering Information:

Model:	PSD1001	
Power Bus enclosure		/B

PSD1001 Parameters Table Single-Dual Output:

Safety Description	Maximum External Parameters			
	Group Cenelec	Co/Ca (μF)	Lo/La (mH)	Lo/Ro (μH/Ω)
Terminals 13-14, 15-16 9-10, 11-12	(Quad channel: 1 + 1 + 1 + 1)			
Uo/Voc = 23.6 V	II C	0.130	4.30	68.6
Io/Isc = 88.2 mA	II B	0.970	17.20	274.4
Po/Po = 519 mW	II A	3.500	34.50	548.9
Terminals 13/15-14/16 9/11-10/12	(Dual channel: 2 parallel + 2 parallel)			
Uo/Voc = 23.6 V				
Io/Isc = 176.4 mA	II B	0.970	4.32	137.2
Po/Po = 1038 mW	II A	3.500	8.64	274.4



PSD1001 Parameters Table Triple-Quad Output:

Safety Description	Maximum External Parameters			
	Group Cenelec	Co/Ca (μF)	Lo/La (mH)	Lo/Ro (μH/Ω)
Terminals 13/15/9-14/16/10	(Dual channel: 3 parallel + 1)			
Uo/Voc = 23.6 V				
Io/Isc = 264.6 mA	II B	0.970	1.92	91.4
Po/Po = 1557 mW	II A	3.500	3.84	182.9
Terminals 13/15/9/11-14/16/10/12	(Single channel: 4 parallel)			
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 C equal to Gas Groups A, B, C, D, E, F and G.
 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 A, B, C, D and
 CLASS II, DIVISION 1, GROUPS E, F, G or CLASS I, Zone 0, GROUP IIC

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

