

Intrinsically Safe 5 V Supply Module DIN Rail Model PSD1004

Characteristics:

General Description:

PSD1004 power supply is an intrinsically safe module that can be installed in Hazardous Areas Zone 0 (20), Zone 1 (21), Zone 2 (22), Gas Group IIB or IIA temperature classification T4. Powered at about 12 V from the intrinsically safe PSD1001C supply module, it provides a stabilized 5 V, 160 mA supply with 500 V input/output isolation, short circuit and reverse input polarity protection, remote sensing and regulation.

Function:

Typical application is to power at 5 V, 160 mA intrinsically safe circuits implementing digital logic blocks, microcontroller operated peripherals like keyboards, encoders, logic solvers, LCD display units and transmitters.

EMC:

Fully compliant with CE marking applicable requirements.

Technical Data:

Supply:

From PSD1001C supply module (nominal 19 V with 68 Ω series resistance).

Isolation (Test Voltage):

500 V Input/Output.

Output:

Voltage: 5 V ± 3%.

Current: 0 to 160 mA.

Voltage regulation: ≤ 0.2% for a 0 to 160 mA load change.

Compatibility:

CE 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:

Ex II 1 G EEx ia IIB T4.

U_o/V_{oc} = 6.51 V, P_o/P_o = 1760 mW, C_o/C_a = 270 μF, at terminals 13-14-15-16.

U_i/V_{max} = 24.2 V, I_i/I_{max} = 373 mA, P_i/P_i = 1760 mW,

C_i/C_i = 0.36 μF, L_i/L_i = 0 μH at terminals 1-2/3-4.

Approvals: applied for conformity to EN50014, EN50020.

Mounting:

T35 DIN Rail according to EN50022.

Weight: about 80 g.

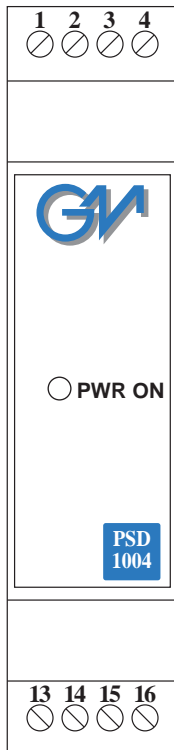
Connection: By polarized plug-in disconnect screw terminal blocks to accommodate terminations up to 2.5 mm².

Location: Hazardous Areas Zone 0 (20), Zone 1 (21), Zone 2 (22). Gas group IIB or IIA, Temperature class T4.

Protection class: IP 20.

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

Front Panel and Features:



- High Output Capability for Powering Hazardous Areas Circuits.
- 500 V Input/Output Isolation.
- EMC Compatibility to EN61000-6-2, EN61000-6-4.
- Short circuit proof highly stabilized output with remote sensing voltage regulation.
- Input reverse polarity protected.
- Power ON indication.
- ATEX, UL & C-UL Certifications.
- High Reliability, SMD components.
- Rugged sealed construction suitable for installation in harsh environments.
- Simplified installation using standard DIN Rail with plug-in terminal blocks.

Ordering Information:

Model: PSD1004

Parameters Table:

Safety Description	Maximum External Parameters			
	Group Cenelec	Co/Ca (μF)		
Terminals 13-14-15-16				
$U_o/V_{oc} = 6.51 \text{ V}$	IIB	270		
$P_o/P_o = 1760 \text{ mW}$	II A	700		
Terminals 1-2/3-4				
$U_i/V_{max} = 24.2 \text{ V}$	IIB			
$I_i/I_{max} = 373 \text{ mA}$	II A			
$P_i/P_i = 1760 \text{ mW}$				
$C_i/C_i = 0.36 \mu\text{F}$				
$L_i/L_i = 0 \mu\text{H}$				

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 and CLASS II, DIVISION 1 or
CLASS I, Zone 0

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

Note: the possibility to power two modules with one single PSD1001C is limited by a total load of 5 V, 160 mA applied to the two units.

