

**Characteristics:**
**General Description:**

The PSD1000 is a DIN Rail mounting universal AC input switching power supply with 24 Vdc 500 mA current output capability, to supply D1000 Series units or other 24 Vdc devices; it provides isolation between input and output and for model PSD1000F a relay for detection of supply fault (input line, output overload or thermal overload).

The output is protected from overload (current or thermal) and short circuit (the unit switches the output off for a second and then tries to re-activate it until the fault condition is removed).

The output is diode protected to connect multiple power supplies (redundant output) or to increase the output power.

**Function:**

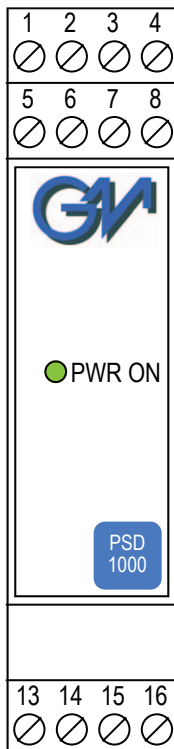
Universal input power supply to drive D1000 Series units or other field equipment, provides 3 port isolation (supply/output/fault).

**Signalling LED:**

Power supply indication (green).

**EMC:**

Fully compliant with CE marking applicable requirements.

**Front Panel and Features:**


- PSD1000 unit can be mounted close to the I.S. modules (no 50 mm distance) because Vac input and Vdc output are on the same side (safe) of the unit (not for PSD1000F).
- PSD1000 Installation in Zone 2, Division 2 (not for PSD1000F).
- Universal AC input power supply.
- Stabilized 24 Vdc 500 mA output capability.
- Redundant outputs connection.
- Output short circuit proof and current limited.
- Three port isolation, Supply/Output/Fault.
- EMC Compatibility to EN61000-6-2, EN61000-6-4.
- PSD1000 ATEX, FM & FM-C Certifications (not for PSD1000F).
- Type Approval Certificate DNV and KR for marine applications.
- High Reliability components.
- Simplified installation using standard DIN Rail and plug-in terminal blocks.

**Ordering Information:**

Model:	PSD1000	
without fault output	blank	
with fault output	F	
Power Bus enclosure output		/B

**Technical Data:**
**Supply:**

115-230 Vac, 50-60 Hz nom (95 to 264 Vac, 48 to 400 Hz) or 115 to 350 Vdc, ripple within voltage limits  $\leq 10$  Vpp.

Limit supply voltage to 250 Vrms for Intrinsic Safety applications.

**Current consumption @ 115 Vac:** 220 mA with 500 mA output current..

**Current consumption @ 230 Vac:** 150 mA with 500 mA output current..

**Efficiency:** 80 % at 115 Vac input, 82 % at 230 Vac input.

**Inrush current:** 10 A with  $\leq 10$  ms duration.

**Max. power consumption:** 15 W with full output, 1W with no load, max. internal power dissipation 3 W.

**Isolation (Test Voltage):**

AC Input/DC Output 2.5 KV;

AC Input/Fault Output 2.5 KV; DC Output/Fault Output 500 V (PSD1000F only).

**Output:**

24 Vdc nom (22.8 to 25.2 Vdc) with 500 mA current capability, parallel connection possible for redundant output.

**Current output:** 400 mA with 95 Vac input, 60 °C ambient temperature, 700 mA with 230 Vac input and 40 °C ambient temperature.

**Short circuit current:** 750 mA.

**Ripple content:**  $\leq 400$  mVrms.

**Fault Output (PSD1000F only):**

voltage free SPDT relay contact, normally energized.

De-energize in fault conditions (output overload or input line fault).

**Contact rating:** 1 A 50 V (resistive load).

**Response time:** 20 ms.

**Compatibility:**

**CE** CE mark compliant, conforms to 94/9/EC Atex Directive and to 2004/108/CE EMC Directive and EN60950 for electrical safety.

**Environmental conditions:**

**Operating:** temperature limits -20 to + 60 °C,

relative humidity max 90 % non condensing, up to 35 °C.

**Storage:** temperature limits - 45 to + 80 °C.

**Safety Description:**


II 3G Ex nA IIC T4, -20 °C  $\leq$  Ta  $\leq$  60 °C applicable to PSD1000, not for PSD1000F.

**Approvals:**

GM International CRR028 conforms to EN60079-0, EN60079-15, FM & FM-C No. 3024643, 3029921C, conforms to Class 3600, 3611, 3810 and C22.2 No.142, C22.2 No.213, E60079-0, E60079-15, DNV and KR Type Approval Certificate for marine applications.

**Mounting:**

T35 DIN Rail according to EN50022.

**Weight:** about 150 g PSD1000, 160 g PSD1000F.

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

**PSD1000 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.

**PSD1000F Location:** Safe Area installation.

**Protection class:** IP 20.

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

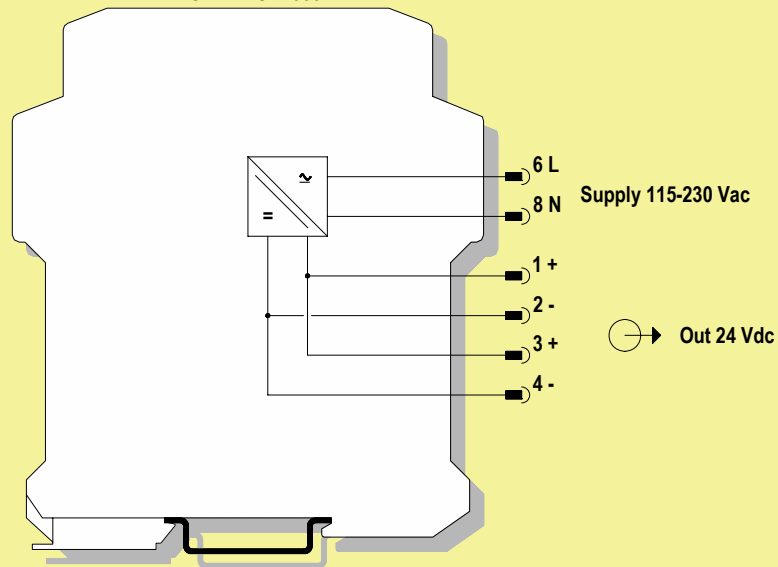
**Image:**



**Function Diagram:**

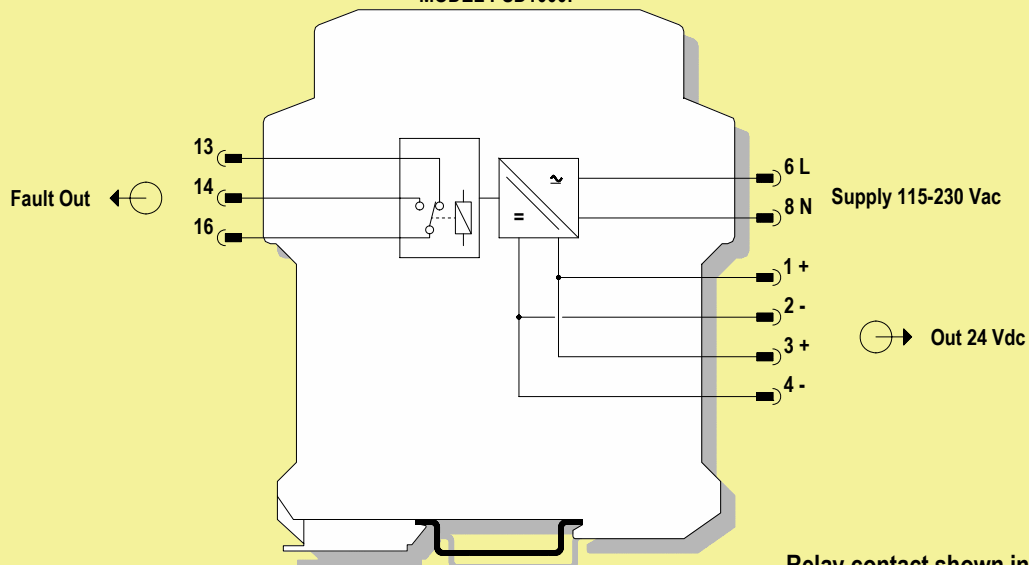
SAFE AREA, ZONE 2 GROUP IIC T4, NON HAZARDOUS LOCATIONS, CLASS I, DIVISION 2, GROUPS A, B, C, D T4, CLASS I, ZONE 2, GROUP IIC T4

**MODEL PSD1000**



SAFE AREA/NON HAZARDOUS LOCATIONS

**MODEL PSD1000F**



Relay contact shown in de-energized position