

Characteristics:

General Description:

The PSD1210 is a DIN-Rail Power Supply to supply process control equipment and can be located in Safe Area or Zone 2 Hazardous Area.

It provides 24 Vdc nominal with 10 A output current and isolation between input - output - ground (2000 V).

This supply unit can be paralleled for redundancy operation to increase availability upgrading the system from SIL 2 to SIL 3 or to increase the output power.

Internal power diode for parallel operation prevents fault propagation in parallel connected supply systems and load sharing distributes current load equally to each power supply to increase reliability and reduce internal power dissipation.

Signalling LED:

Power supply status indication (green).

Alarming:

Output voltage deviation $\geq \pm 5\%$ from nominal 24 Vdc.

Overvoltage protection:

Three independent overvoltage protections:

1 voltage limiting loop at 27 Vdc and 1 + 1 crowbars at 29 Vdc.

Periodical testing:

Inbuilt provisions for on-site T-proof test without having to remove enclosure.

EMC:

Fully compliant with CE marking applicable requirements.

Features:

- Universal AC / DC Input, 95 to 264 Vac (48 to 62 Hz) or 115 to 350 Vdc.
- Installation in Zone 2.
- ATEX Certification.
- Power Factor Correction eliminates power-line harmonics loading.
- Highly regulated, trimmable output of 24 Vdc up to 10 A.
- 3 over-voltage redundant protections prevent risks to the load.
- Supports redundant parallel connection with load sharing.
- Under-Over voltage alarm monitoring with signalling output ($\pm 5\%$).
- 100 ms hold-up time at full load, mitigates power-line glitches.
- Durable metal enclosure, improves shielding and heat sinking.
- High (better than 80 %) efficiency.
- Simplified installation using standard DIN-Rail and plug-in input and output terminal blocks.
- Externally accessible connections for Tproof periodic test.

Ordering Information:

Model: PSD1210

Technical Data:

Supply:

Input voltage: 95 to 264 Vac (48 to 62 Hz) or 115 to 350 Vdc.

Limit supply voltage to 250 Vrms for Intrinsic Safety applications.

Power Factor Correction (AC input): 0.95.

Efficiency: higher than 80 %.

Max. internal power dissipation: 50 W.

AC input current (sinusoidal at full load): 1.4 A @ 230 Vac supply voltage,

2.8 A @ 115 Vac supply voltage

Protection: 6.5 A fuse.

Connection: plug-in terminal block for 4 mm² wire.

Isolation:

Input to output isolation: 2000 Vrms (routine test).

Input to ground isolation: 2000 Vrms (routine test).

Output:

Output voltage: 24 Vdc (adjustable from 22.8 to 25.2 Vdc).

Regulation: 0.2 % for a 100 % load change.

Stability: 0.1 % for a 20 % line voltage change.

Ripple: ≤ 50 mVpp.

Output current: 10 A nominal. Parallel connection for redundancy with load sharing.

Connection: plug-in terminal block for 4 mm² wire.

Hold-up time at full load: 100 ms (AC input).

Over voltage protection: output limited to 27 Vdc plus redundant crowbars for over voltage protection at 29 Vdc.

Power good signalling:

Output good: $0.95 \leq V_{out} \leq 1.05$ nominal value.

Indication: power good green LED.

Signalling: voltage free SPST optocoupled open-collector transistor.

Open-collector rating: 100 mA at 35 V (≤ 2.0 V voltage drop)

Leakage current: ≤ 50 μ A at 35 V.

Connection: plug-in terminal block for 2.5 mm² wire.

Compatibility:

CE CE mark compliant, conforms to EN61000-6-2, EN61000-6-4 and EN60950 for electrical safety.

Environmental conditions:

Operating temperature limits: -20 to + 60 °C.

Relative humidity limits (up to 40 °C): 10 to 90 %, non condensing.

Transport, storage temperature limits: - 40 to + 80 °C.

Safety Description:



ATEX Category 3 for Zone 2.

II 3 G EEx nA IIC T4, -20 °C \leq Ta \leq 60 °C.

Approvals: DNV-2006-OSL-ATEX-0099X conforms to EN60079-15.

EXIDA Report No. GMI 06/11-20 R004, SIL 2/SIL 3 according to IEC 61508, IEC 61511.

Please refer to Functional Safety Manual for SIL applications.

Mechanical:

Mounting: T35 DIN Rail according to EN50022.

Weight: about 2.5 Kg.

Location: Safe Area or Hazardous Area Zone 2 Group IIC Temp. Code T4 installation.

Protection class: IP 20.

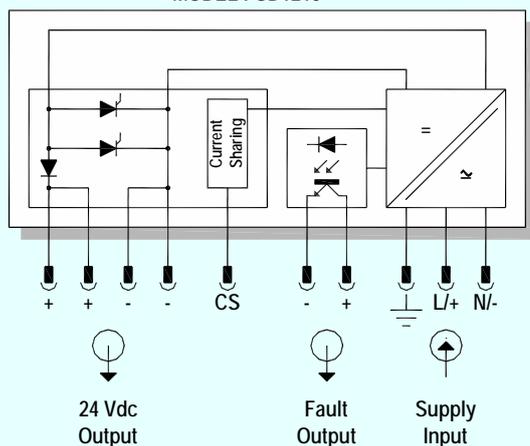
Dimensions: width 200 mm, height 110 mm, depth 110 mm.



Function Diagram:

SAFE AREA, HAZARDOUS AREA ZONE 2, GROUP IIC T4

MODEL PSD1210



SIL 2

MODEL PSD1210

SIL 3

MODEL PSD1210

