Installation Instructions for PSG480E24RM POWER SUPPLY

READ INSTRUCTIONS BEFORE INSTALLING OR OPERATING THIS DEVICE.
KEEP FOR FUTURE REFERENCE.

1. Safety instructions
   • Switch main power off before connecting or disconnecting the device. Risk of explosion!
   • To guarantee sufficient convection cooling, please keep a distance of 50 mm above and below the
device as well as a lateral distance of 20 mm to other units.
   • Note that the enclosure of the device can become very hot depending on the ambient temperature
   and load of the power supply. Risk of burns.
   • The main power must be turned off before connecting or disconnecting wires to the terminals!
   • Do not introduce any objects into the unit.
   • Dangerous voltage present for at least 5 minutes after disconnecting all sources of power.
   • The power supplies are built-in units and must be installed in a cabinet or room (condensation free
environment and indoor location) that is relatively free of conductive contaminants.
   • The unit must be installed in an IP54 enclosure or cabinet in the final installation.
   • Warning: Explosion Hazard – Substitution of components may impair suitability for Class I, Division 2.
   • Warning: Explosion Hazard – Do not disconnect equipment or adjust potentiometer unless the
power has been switched off or the area is known to be non-hazardous.
   • CAUTION. “FOR USE IN A CONTROLLED ENVIRONMENT”.

2. Device description (Fig. 1)
   (1) Input terminal block connector
   (2) Output terminal block connector
   (3) DC voltage adjustment potentiometer
   (4) DC OK control LED (green)
   (5) Universal mounting rail system

3. Mounting (Fig. 2)
The power supply unit can be mounting on 35 mm DIN rails in accordance with EN 60715. The device
should be installed with input terminal block on the left side.
Each device is delivered ready to install. Snap on the DIN rail as shown in Fig. 2:
1. Lift the unit slightly upwards and put it onto the DIN rail.
2. Push downwards until stopped.
3. Press against the bottom front side for locking.
4. Shake the unit slightly to ensure that it is secured.

4. Dismounting (Fig. 3)
   To uninstall, pull or slide down the latch as shown in Fig. 3. Then, slide the PSU in the opposite direction,
   release the latch and pull out the PSU from the rail.

5. Connection
   The terminal block connectors allow easy and fast wiring.
   You can use flexible (stranded wire) or solid cables with cross sections:

<table>
<thead>
<tr>
<th>Table</th>
<th>Stranded / Solid</th>
<th>Torque</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>0.8-5.3</td>
<td>8-10</td>
</tr>
<tr>
<td>(2)</td>
<td>3.3-5.3</td>
<td>12-10</td>
</tr>
</tbody>
</table>

To secure reliable and shock proof connections, the stripping length should be 7 mm (see Fig. 4 (1)).
Please ensure that wires are fully inserted into the connecting terminals as shown in Fig. 4 (2).
In accordance to EN 60950 and EN/UL 60950, flexible cables require ferrules.
Use appropriate copper cables that are designed to sustain operating temperature of:
1. 60°C, 60°C / 75°C for USA
2. At least 75°C for ambient not exceeding 60°C, and 90°C for ambient exceeding 60°C for Canada.

5.1. Input connection (Fig. 1 (1), Fig. 5)
   For AC input connections, use L, N and PE connections of input terminal connector (see Fig. 1 (1)) to
   establish the 100-240 VAC connection.
   For DC input connections, connect L to +Ve and connect N to −V−.

   The unit is protected with internal fuse (not replaceable) at L pin and it has been tested and approved on
   20A (UL) and 16A (IEC) branch circuits without additional protection device. An external protection device
   is only required if the supplying branch has an ampacity greater than above. Thus, if an external protective
device is necessary, or, utilized, a minimum value of 10A B- or 8A C- characteristic breaker should be
used.

The internal fuse must not be replaced by the user.
   In case of internal defect, please call 1 - 877 - ETN - CARE

5.2. Output connection (Fig. 1 (2))
   Use the “+” and “−” screw connections to establish the 24 VDC connection. The output provides 24 VDC.
The output voltage can be adjusted from 24 to 28 VDC on the potentiometer. The green LED DC OK
displays correct function of the output (Fig. 1 (4)). The device has a short circuit and overload protection
and an overvoltage protection limited to 35 VDC.

5.3. Output characteristic curve
   The device functions normal under operating line and load conditions. In the event of a short circuit or
overload the output voltage and current collapses (|Isurge| or |Io|). The secondary voltage is reduced and bounces
until short circuit or overload on the secondary side has been removed.

5.4. Thermal behavior (Fig. 6).
   In the case of ambient temperatures above +50°C (Vertical), the output capacity has to be reduced by 2.5%
per degree Celsius increase in temperature, and at +70°C to +75°C (Vertical), the output capacity has to
be reduced by 5% per degree Celsius increase in temperature. If the output capacity is not reduced when
Tamb > 50°C, the device will run into thermal protection by switching off its device will go in bottom mode
and will recover when ambient temperature is lowered or load is reduced as far as necessary to keep
device in working condition.

FOR TECHNICAL ASSISTANCE CALL 1 - 877 - ETN - CARE
TECHNICAL DATA FOR PSG480E24RM

Input (AC)
- Nominal input voltage / frequency: 100-240 VAC / 50-60 Hz
- Voltage range: 85-264 VAC
- Frequency: 47-63 Hz
- Nominal current: 6 A Max. @ 100 VAC
- Inrush current limitation, PR (+25°C) typ: < 35 A @ 115 VAC & 230 VAC
- Mains buffering at nominal load (typ): > 20 ms @ 115 VAC & 230 VAC
- Turn-on time: 1 ms
- Internal fuse: T & AN 1/250 V
- Leakage current: < 3 mA @ 240 VAC
- Nominal output voltage Un / tolerance: 24 VDC ± 2%
- Adjustment range of the voltage: 24-28 VDC (maximum power ≤ 480 W)
- Nominal current: 20 A
- Deraling: > 50°C (2.5 % / °C), > 70°C (5 % / °C) in Vertical
- Startup with capacitive loads: Max. 10,000 μF
- Max. power dissipation idling / nominal load approx.: 50 W
- Efficiency: > 89.0 % @ 115 VAC & 230 VAC
- Residual ripple / peak switching (20 MHz) (at nominal values): < 50 mVpp / < 150 mVpp
- Parallel operation: PSQ066UH24RM / With ORing Diode

General Data
- Type of housing: Aluminum
- Signals: Green LED DC OK
- MTBF: > 500,000 hrs.
- Dimensions (L x W x H): 121 mm x 144 mm x 118.6 mm
- Weight: 1.37 kg
- Connection method: Screw connection
- Stripping length: 7 mm
- Operating temperature (surrounding air temperature): -25°C to +75°C (Refer to Fig. 6)
- Storage temperature: -25°C to +85°C
- Humidity, at +25°C, no condensation: < 95%, RH
- Vibration (non-operating): 10 to 500 Hz @ 30 m/s² (3 G peak); displacement of 0.35 mm, 60 min. per axis for all X, Y, Z directions in acc. with IEC 60068-2-6
- Shock (in all directions): 30 G (300 m/s²) in all directions according to IEC 60068-2-27
- Pollution degree: 2
- Climatic class: 3K3 according to EN 60721

Certification and Standards
- Electronic equipments of machines: IEC 60204-1 (over voltage category III)
- Electronic equipment for use in electrical power installations: EN 62477-1 / IEC 62103
- Safety entry low voltage: PELV (EN 60204), SELV (EN 60950)
- Electrical safety (of information technology equipment): UL/C-UL recognized to UL 62368-1 and CSA C22.2 No. 62368-1
- Industrial control equipment: UL/C-UL listed to UL 508 and CSA C22.2 No. 107.1-01;
- CSA to CSA C22.2 No. 107.1-01 (File No. 250468)
- Protection against electric shock: DIN 57100-410
- CE: In conformance with EMC directive 2014/30/EU and low voltage directive 2014/35/EU
- Component Power Supply for general use: EN 61204-3
- ITE: EN 55032, EN 61000-3-2, EN 61000-3-3, EN 55024
- Industrial: EN 55011
- Limitation of mains harmonic currents: EN 61000-3-2

RoHS Compliant: Yes

Safety and Protection
- Transient surge voltage protection: VARISTOR
- Current limitation at short-circuits approx. = 150 % of Po max typically
- Surge voltage protection against internal surge voltages: Yes
- Isolation voltage: Input / output (type test/routine test): 4 kVAC / 3 kVAC
- Input / PE (type test/routine test): 1.5 kVAC / 1.5 kVAC
- Output / PE (type test/routine test): 1.5 kVAC / 500 VAC
- Protection degree: IP20
- Safety class: Class i with PE connection