

# RHINO Installation Instructions for PSL-12-010 Power Supply



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

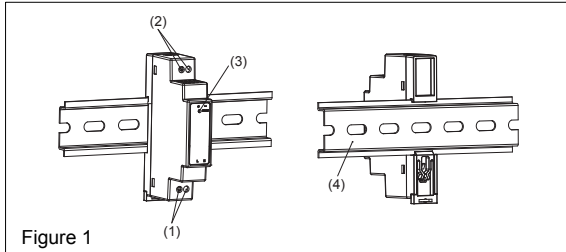


Figure 1

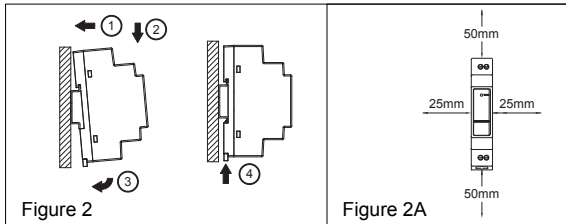


Figure 2

Figure 2A

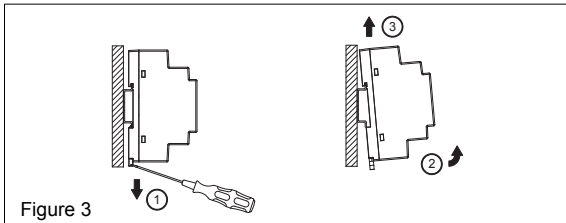


Figure 3

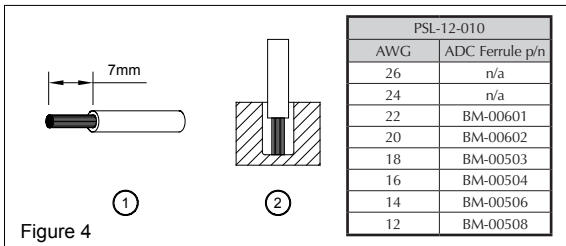


Figure 4

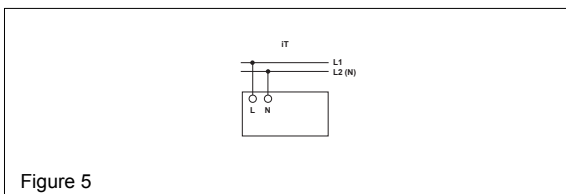


Figure 5

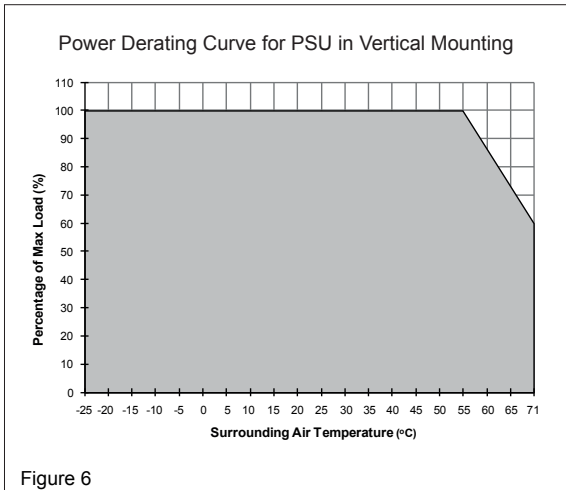


Figure 6

## 1. Safety instructions

- Switch main power off before connecting or disconnecting the device. Risk of explosion!
- To guarantee sufficient convection cooling, keep a distance of 50mm [1.97 in] above and below the device as well as a lateral distance of 25mm [0.98 in] to other units. See Fig 2A.
- 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 power supplies must be installed in an IP54 or better (NEMA 3 or better) enclosure or cabinet in the final installation.
- **CAUTION:** "For use in a controlled environment".

## 2. Device description (Fig. 1)

- (1) Input terminal block connector
- (2) Output terminal block connector
- (3) DC OK control LED (green)
- (4) Universal mounting rail system

## 3. Mounting (Fig. 2)

The power supply unit can be mounted on 35mm DIN rail in accordance with EN60715. The device must be installed with input terminal block at the bottom.

Each device is delivered ready to install.

Snap onto the DIN rail as shown in Fig. 2:

1. Tilt 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. Tug on 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 power supply unit (PSU) up, 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 wire size 26-12 AWG. Torque to 0.8 N·m (7.0 lb in). To secure reliable and shock proof connections, the stripping length should be 7mm [0.28 in] (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 / UL 60950, flexible wires require ferrules.

Use appropriate copper wire that is designed to sustain voltage of 300V and operating temperature of at least 105°C (221°F) or more to fulfill UL requirements.

### 5.1. Input connection (Fig. 1 (1), Fig. 5)

Use L and N connections of input terminal connector (see Fig. 1 (1)) to establish the 100-240 VAC connection.

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 8A B- or 4A C- characteristic breaker should be used.



The internal fuse must not be replaced by the user.

### 5.2. Output connection (Fig. 1 (2))

Use the "+" and "-" screw connections to establish the 12VDC connection. The output provides 12VDC.

The green LED DC OK displays correct function of the output (Fig. 1 (3)). The device has a short circuit and overload protection and an over voltage protection limited to <17.4 VDC.

### 5.3. Output characteristic curve

The device functions normal under operating line and load conditions. In the event of a short circuit or over load the output voltage and current collapses ( $I_{O/L}$  or  $I_{S/C}$  is  $> I_{surge}$  (150%)). The secondary voltage is reduced and cycles on and off 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 55°C [131°F], the output capacity has to be reduced by 2.5% per degree Celsius increase in temperature. If the output capacity is not reduced when  $T_{Amb} > 55°C$  [131°F] device will switch into thermal protection by switching off i.e. the output voltage will go into latch-off mode until the component temperature cools down and the AC power is recycled.

**FOR TECHNICAL ASSISTANCE CALL 770-844-4200**

# Technical Data For PSL-12-010

| <b>Input (AC)</b>  |   |
|--|---|
| Nominal input voltage and frequency  | 100-240 VAC / 50-60 Hz  |
| Voltage range  | 90-264 VAC  |
| Frequency  | 47-63 Hz  |
| Nominal current  | < 0.3 A @ 115 VAC, < 0.2 A @ 230VAC   |
| Inrush current limitation. I <sub>2t</sub> (+25 °C) typ.   | < 15A @ 115VAC, < 30A @ 230VAC  |
| Mains buffering at nominal load (typ.)   | > 10ms @ 115VAC, > 30ms @ 230VAC  |
| Turn-on time   | < 3.0 sec.  |
| Internal fuse  | T 1 A / 250 VAC (non-replaceable)   |
| Recommended backup protection  | 8A B- or 4A C- characteristic circuit breaker   |
| Leakage current  | < 0.25 mA @ 240 VAC   |
| <b>Output (DC)</b>   |   |
| Nominal output voltage U <sub>N</sub> / tolerance  | 12VDC ± 2 %   |
| Nominal current  | 0.83 A  |
| Derating   | > 55°C [131°F] (2.5 % / °C) in Vertical   |
| Startup with capacitive loads  | Max. 3,000 µF   |
| Max. power dissipation idling / nominal load approx.   | 2W  |
| Efficiency   | > 80.0% @ 115 VAC and 230 VAC   |
| Residual ripple/ peak switching (20 MHz) (at nominal values)   | < 50 mVpp / < 150 mVpp  |
| <b>General Data</b>  |   |
| Type of housing  | Plastic (PC), closed  |
| Signals  | Green LED DC OK   |
| MTBF   | > 500,000 hrs. as per Telcordia   |
| Dimensions (L x W x H)   | 91mm x 18mm x 55.6mm [3.58 in x 0.71 in x 2.19 in]  |
| Weight   | 0.06 kg [0.13 lb]   |
| Connection method  | Screw connection  |
| Wire size / torque   | 26-12 AWG / 0.8 N·m [7.0 lb-in]   |
| Stripping length   | 7mm [0.28 in]   |
| Ambient operating temperature  | -25°C to 71°C [-13°F to 160°F] (Refer to Fig. 6)  |
| Storage temperature  | -25°C to 85°C [-13°F to 185°F]  |
| Humidity at +25°C, no condensation   | <95 % RH  |
| Shock (operating)  | IEC60068-2-27, Half Sine Wave: 4G for a duration of 22ms, 3 shocks for each 3 directions, 9 times in total              |
| Vibration (operating)  | IEC60068-2-6, Sine Wave: 10-500Hz @ 19.6m/S <sup>2</sup> (2G peak); 10 min per cycle, 60 min for all X, Y, Z directions |
| Pollution degree   | 2   |
| Altitude (operating)   | 2000 Meters   |
| <b>Certification and Standards</b>   |   |
| Safety entry low voltage   | SELV (EN 60950)   |
| Electrical safety (of information technology equipment)  | UL/C-UL recognized to UL60950-1 and CSA C22.2 No. 60950-1, CB scheme to IEC60950-1, Limited Power Source (LPS)          |
| Industrial control equipment   | UL/C-UL listed to UL508 and CSA C22.2 No. 107.1-01 (File No. E197592)   |
| Class 2 power supply   | UL/C-UL recognized to UL60950-1 and CSA C22.2 No. 60950-1 (File No. E198298)  |
| CE   | In conformance with EMC directive 2014/30/EC and low voltage directive 2014/35/EC                                       |
| ITE  | EN55032, EN61000-3-2, EN61000-3-3, EN55024  |
| Limitation of mains harmonic currents  | EN61000-3-2   |
| RoHS   | Yes   |
|    |   |
| <b>Safety and Protection</b>   |   |
| Current limitation at short-circuits approx.   | I <sub>surge</sub> = 150 % of P <sub>Omax</sub> typically   |
| Surge voltage protection against internal surge voltages   | Yes   |
| Isolation voltage: Input/output  | 3.0 kVAC  |
| Protection degree  | IP20  |
| Safety class   | Class II without PE connection  |