RHINO Installation Instructions for PSR-24-120 Power Supply

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

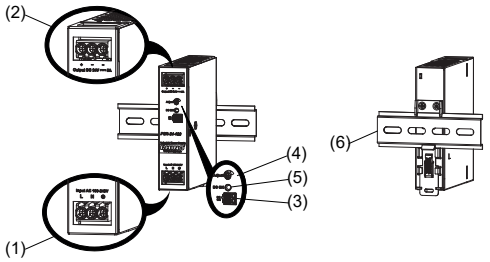

Figure 1

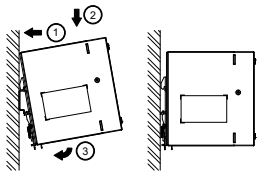

Figure 2

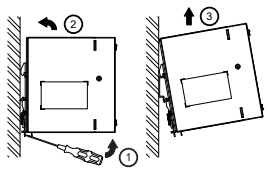

Figure 3

	DC OK LED	DC OK Contact
Normal mode	ON	Closed
Overload (hiccup mode)	Intermittent	Open
Output short circuit	Intermittent	Open
Temperature shut down	OFF	Open
No input power	OFF	Open

Figure 4

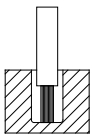

Figure 5

PSR-24-120	
AWG	ADC Ferrule p/n
20	V30AE000038
18	V30AE000045
16	V30AE000048
14	V30AE000052
12	V30AE000055

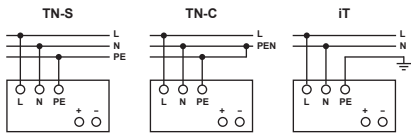

Figure 6

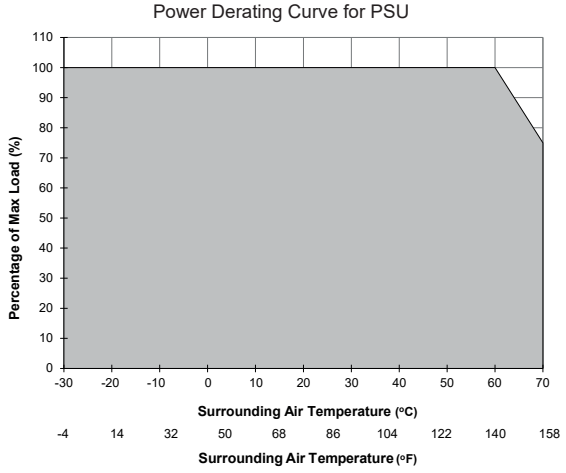

Figure 7

1. Safety instructions

- Switch main power off before connecting or disconnecting the device. Risk of explosion!
- If the unit is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.
- To guarantee sufficient convection cooling, please refer to the following instructions to ensure sufficient clearance around the device.
  Vertical Mounting: 40 mm [1.57 in] above and 20 mm [0.79 in] below the device as well as a lateral distance of 5 mm [0.20 in] to other units. If load is less than 50%, lateral distance can be 0 mm [0 in]. In case the adjacent device is a heat source, the lateral distance will be 15 mm [0.59 in].
- The external enclosure where the unit will be installed shall meet the requirements for mechanical, electrical and fire enclosure.
- 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!
  ⚠ **CAUTION: Hot surface**
- 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.
- **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 relay contact
(4) DC voltage adjustment potentiometer
(5) DC OK LED (green)
(6) 35mm DIN rail mounting (DIN rail sold separately)

3. Mounting and dismounting (Fig. 2, Fig. 3)

The power supply unit can be mounted on 35 mm DIN rails in accordance with EN 60715. For Vertical Mounting, the device should be installed with input terminal block on the bottom.
Each device is delivered ready to install.

1. Tilt the unit slightly upwards and put it onto the DIN rail. Snap on the DIN rail as shown in Fig. 2.
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.
5. 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.

4. Connection

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

Table 1 Refer to Fig. 1:	Standard / Solid		Torque		Stripping Length	
	(mm^2)	(AWG)	(Nm)	(lb in)	(mm)	(in)
(1), (2)	0.82-3.3	18-12	0.51	4.5	8	0.31
(3)	0.32-1.3	22-16	-	-	8	0.31

Please ensure that the wires are fully inserted into the connecting terminals as shown in Fig. 5.
In accordance to IEC/EN/UL 62368-1 and IEC/EN/UL 61010-2-201, flexible cables require ferrules.
Use appropriate copper cables that are designed to sustain operating temperature of at least 90°C for ambient < 70°C.

4.1. Input connection (Fig. 1, Fig. 6)

Use L, N and PE connections of input terminal connector (see Fig. 1 (1)) to establish the 100-240Vac connection.
The device has an internal fuse. The unit is tested and approved with branch circuit protective device up to 20A.

⚠ The internal fuse must not be replaced by the user.

4.2. 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 (5)). The device has a short circuit and overload protection and an over voltage protection limited to < 34 VDC.

4.3. Output characteristic curve

The device functions normal under operating line and load conditions. In the event of an over load (I_O = 105-150%) the output voltage will start to droop and bounce until over load has been removed. If the loads are in short circuit, the secondary voltage will bounce and recover once the short circuit has been removed.

4.4. Indicators and relay contacts (Fig. 4)

4.5. Thermal behavior (Fig. 7)

If the output capacity is beyond what is recommended in Fig. 7, the device will run into thermal protection by switching off i.e. device will go in bouncing 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 770-844-4200

Technical Data For PSR-24-120

Input (AC)	
Nominal input voltage / frequency	100-240 VAC
Voltage range	90-264 VAC
Frequency	47-63 Hz
Nominal current	1.2 A typ. @ 115 VAC, 0.6 A typ. @ 230 VAC
Inrush current limitation (+25°C, cold start)	40 A typ. @ 230 VAC
Mains buffering at nominal load (typ.)	35 ms typ. @ 115 VAC & 230 VAC
Turn-on time	300 ms typ. @ 115 VAC & 230 VAC
Internal fuse	T 3.15 A
Leakage current	< 0.5 mA @ 240 VAC
Output (DC)	
Nominal output voltage U_N	24 VDC ± 1%
Adjustment range of the voltage	24-28 VDC
Nominal current	5 A
Derating: Input voltage Temperature	 < 100VAC de-rate power by 1% / VAC Vertical mounting: > 60°C [140°F] derate power by 2.5% / °C
Startup with capacitive loads	10,000 µF typ.
Max. power dissipation: 0% load	 0.5 W max @ 115 VAC & 230 VAC
Efficiency	93.5% typ. @ 230 VAC
PARD (20MHz) at 100% load	< 100 mVpp @ 0°C to +70°C [+32°F to +158°F] < 300 mVpp @ -30°C to 0°C [-22°F to +32°F]
Max. relay contact rating	30 V / 1 A
Parallel operation	PSB60-REM20S / PSB60-REM40S
General Data	
Type of housing	Metal
Signals	Green LED DC OK
MTBF	> 700,000 hrs. as per Telcordia SR-332 (I/P: 115 VAC & 230 VAC; O/P: 100% load; Ta: 25°C)
Dimensions (L x W x H)	123.6 x 30 x 116.8 mm [4.87 x 1.18 x 4.60 in]
Weight	0.50 kg [1.10 lb]
Connection method	Input & output terminal block connector: Screw connection DC OK relay contact: Push-in connection
Wire size / torque / stripping length	See Table 1
Operating temperature (surrounding air temperature)	Refer to Fig. 7 Vertical mounting: -30°C to +70°C [-22°F to +158°F] (-40°C [-40°F] Cold Start)
Storage temperature	-40°C to +85°C [-40°F to 185°F]
Humidity at +25°C, no condensation	5 to 95% RH
Vibration (operating)	IEC 60068-2-6, Sine Wave: 10 Hz to 500 Hz; 4G peak; 60 min per axis for all X, Y, Z directions
Shock (non-operating)	IEC 60068-2-27, Half Sine Wave: 50 G for duration of 11 ms; 3 times per direction
Pollution degree	2
Altitude (operating)	0 to 5,000 Meters (0 to 16,400 ft.)
Certification and Standards	
Electrical safety (of information technology equipment)	UL/C-UL recognized to UL62368-1 and CSA C22.2 No. 62368-1 (File no. E197592) CB scheme to IEC 62368-1, IEC 61010-1, IEC 61010-2-201
Electrical Equipment for Measurement, Control and Laboratory Use	UL/C-UL listed to UL61010-1, UL61010-2-201 (File no. E508040)
Component power supply for general use	EN/BS EN 61204-3
Immunity	EN/BS EN 55035, EN/BS EN 61000-6-2 (EN 61000-4-2, 3, 4, 5, 6, 8, 11) Compliance to EN 61000-6-1
Emission	EN/BS EN 55032, EN/BS EN 61000-6-4, EN/BS EN 61000-3-2 Class A & Class D, EN/BS EN 61000-3-3 Compliance to EN/BS EN 61000-6-3: Class B
CE c UL E197592 US LISTED Ind. Cont. Eq. c UL us E508040 UK CA	
RoHS Compliant	Yes
Safety and Protection	
Transient surge voltage protection	VARISTOR
Surge voltage protection against internal surge voltages	Yes
Isolation voltage: Input / Output Input / PE Output / PE Output / DC OK	 4.0 kVAC 2.0 kVAC 1.5 kVAC 0.5 kVAC
Protection degree	IP20
Safety class	Class I with GND connection