RHINO Installation Instructions for PSS☐-155-U Power Supply

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

1. Safety Instructions

- Must select correct AC input voltage range through selectable switch before turning on (Fig. 1, ⑥).
- To ensure sufficient convection cooling, always maintain a safety distance of ≥ 20mm [0.79in] from all ventilated surfaces while the device is in operation.
- The device is not recommended to be placed on low thermal conductive surface, for example, plastics.
- Note that the enclosure of the device can become very hot depending on the ambient temperature and load of the power supply. Do not touch the device while it is in operation or immediately after power is turned OFF. Risk of burning!
- Do not touch the terminals while power is being supplied. Risk of electric shock.
- Prevent any foreign metal, particles or conductors to enter the device through the openings during installation. It can cause electric shock, safety hazard, fire, product failure
- Battery need to be protected from short circuit while installation & servicing. Danger of explosion.
- Signal cable should not interact with AC Input.
- Warning: When connecting the device, secure Earth connection before connecting L and N. When disconnecting the device, remove L and N connections before removing the GND connection.

2. Device Descriptions (Fig. 1)

(1) Input & Output terminal block connector
(2) DC voltage adjustment potentiometer
  12V - 14V for PSS12-155-U
  24V - 28V for PSS24-155-U
(3) Green LED ON = DC OK
  (Normal operation through mains supply or through battery when operating in buffering mode)
(4) Red LED ON = Battery reverse polarity
(5) Battery charging current adjustment potentiometer (Factory Setting: 1A)
  Max charging current shall not exceed 1.5A (Refer to Fig. 1, ⑤).
(6) AC selectable switch
(7) Signal connector - JST: XHP-4
(8) Mating signal connector (PCB soldering type) - JST: B4B-XH-A(LF)(SN)

3. Installation of the Device (Fig. 2)

A. Mounting holes for the power supply assembly onto the mounting surface. Power supply shall be mounted on minimum 2 mounting holes using M3 screw minimum 5mm (0.19in) length.
B. This surface belongs to customer's system or panel where the device is mounted.
C. Connector

- Use flexible cable (stranded wire) or solid wire 1.3-2.1 mm^2(AWG No. 16-14.) The torque at the Connector shall not exceed 1.3Nm(11.3in-lb) The insulation stripping length should not exceed 0.28in or 7mm (Fig. 3).

4. Installation of Mounting Accessories (Fig. 4)

- Only use M3 screw ≤ 2.5mm through the base mounting holes. This is to keep a safety distance between the screw and internal components.
- Recommended mounting tightening torque: 0.4-0.8 Nm (3.5 to 7in-lb)

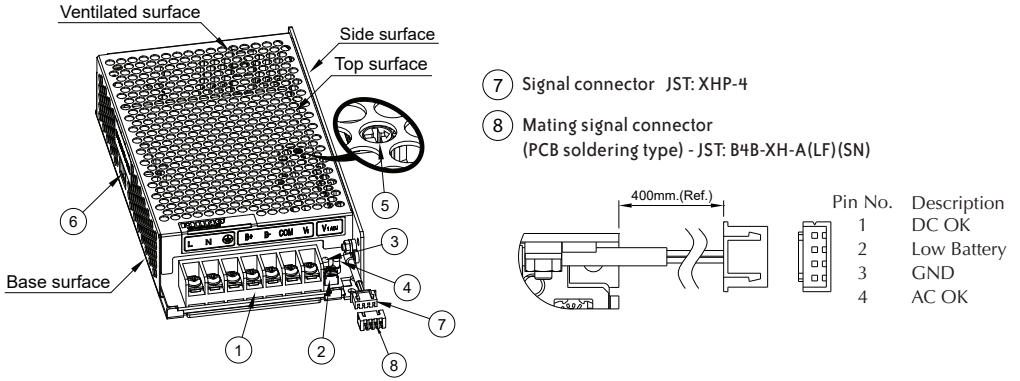

Figure 1 - Device Descriptions

Side Mounting (Vertical) **Base Mounting (Vertical)** **Side Mounting (Horizontal)**

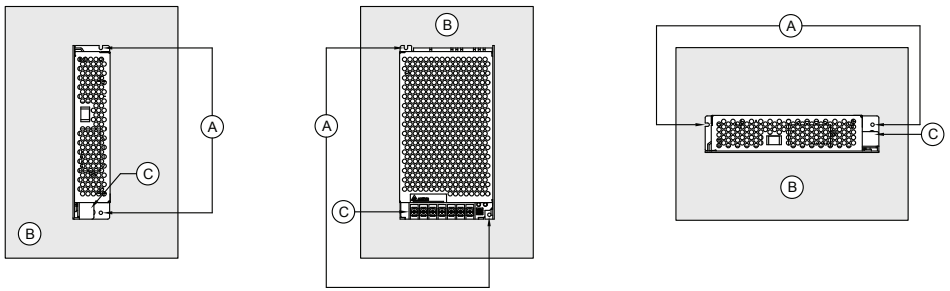

Figure 2 - Mounting

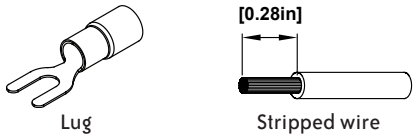

Figure 3 - Wire Type

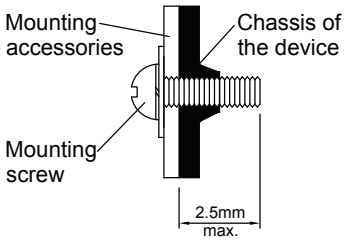

Figure 4 - Mounting Screw

Technical Data For PSS□-155-U

Specifications		PSS12-155-U		PSS24-155-U	
		V+	B+	V+	B+
Input (AC)					
Input Voltage range		90-132Vac, 180-264Vac (Selectable by Switch)			
Frequency		47-63Hz			
Nominal Current		< 2.5A @ 115Vac, < 1.5A @ 230Vac			
Inrush current limitation I2t (+25 °C) typ		< 25A @ 115Vac & 230Vac			
Leakage current		< 0.75mApk @ 264Vac			
Recommended circuit breaker (characteristic B)		10A			
Output (DC)					
Nominal output voltage / Adjustment Range		13.8Vdc / 12-14Vdc	13.3Vdc	27.6Vdc / 24-28Vdc	27.1Vdc
Output Power		151W (max)			
Output Current	Normal Mode	9.5A (0-11A)	1.5A (0.5-1.5A)	4.0A (0-5.5A)	1.5A (0.5-1.5A)
	Buffering Mode	-	0-11A	-	0-5.5A
PARD (ripple and noise) (20MHz)	V1	< 150mVpp @ 0°C to -20°C < 100mVpp @ > 0°C to 70°C			
Start-up Time	V1	< 1,000ms (115Vac @ 90% load, 230Vac @ 100% load)			
Hold-up Time	V1	> 20ms (115Vac @ 90% load, 230Vac @ 100% load)			
Rise Time	V1	< 50ms (100Vac @ 90% load, 200Vac @ 100% load)			
Efficiency		> 85.0% @ 115Vac / > 86.0% @ 230Vac		> 88.0% @ 115Vac / > 89.0% @ 230Vac	
Line Regulation	V1	< 0.5% (90-132Vac @ 90% load,180-264Vac @ 100% load)			
Load Regulation	V1	< 1.0% (90-132Vac @ 0-90% load,180-264Vac @ 0-100% load)			
Voltage Drop Between V1 and B+	Normal Mode	0.5Vdc typ.			
	Buffering Mode	0.2Vdc typ.			
Battery Input / Output Characteristics					
Nominal Battery Voltage (Batteries not included with power supply)		12Vdc SLA Sealed lead acid battery		24Vdc SLA Sealed lead acid battery 2 x 12Vdc SLA Sealed lead acid battery	
Battery Voltage range	Continuously Operating	11-13.8Vdc (nominal at 12V)		22-27.6Vdc (nominal at 24V)	
	Maximum Allowed Voltage	16Vdc Max		32Vdc Max	
	Battery Low Voltage 1)	11.5Vdc.typ.		22.5Vdc.typ.	
	Minimum Voltage 2)	9.0Vdc ± 0.5Vdc		18.0Vdc ± 0.5Vdc	
Battery Capacity		3.3AH/ 7AH/ 12AH/ 15AH		3.3AH/ 7AH/ 12AH/ 15AH	
Charging Time 3)		2-10 hrs @ charging current of 1.5A			
Buffering Time		Approx.1hrs 15mins for battery 12V/15AH		Approx.2hrs 30mins for battery 24V/15AH	
Recommended External Fuse for Battery		Automotive 30A / 80V, FK3 type from Littelfuse, or similar in the battery B+ path. The battery fuse protects the wires between the battery and the unit.			
Battery Charging (Normal Mode)		CC-CV mode (constant current-constant voltage)			
End-of-charge Voltage		The unit always charges battery to a fixed voltage value			

1) The voltage level of battery to enable "Battery Low" function

2) Minimum battery voltage required for power supply to detect battery in order to begin charging. Battery must be connected to power supply, with the correct polarity, across B+ and B- terminals; and, with input and output loads disconnected.

3) Charging time depends on the state/condition of battery discharge; and will depend on the amount of buffering/discharging time, and load current that battery was discharged at.

Technical Data For PSS□-155-U

Specifications	PSS12-155-U		PSS24-155-U	
	V+	B+	V+	B+
General Data				
Case Chassis / Cover	AL / SGCC			
Dimensions (L x W x H)	178 x 97 x 38 mm [7.01 x 3.82 x 1.50 inch]			
Weight	0.60 kg (1.32 lb)			
MTBF	> 700,000 hrs. as per Telcordia SR-332, I/P: 115Vac, Ta: 25°C O/P: 13.8V/9.9A for 13V model and 27.6V/4.95A for 27V model			
Noise	Sound Pressure Level (SPL) < 30dBA			
Cooling	Convection			
Input/Output Terminal	Terminal block M3.5 x 7 Pins (Rated 300V/15A)			
Wire size / torque	AWG 16-14 / 11.3 lbf.in			
Input/Output Wire	AWG 16-14			
Shock Test	IEC 60068-2-27, 30G (300m/S²) for a duration of 18ms,3 times per direction, 9 times in total			
Vibration	IEC 60068-2-6, 10Hz to 150Hz @ 50m/S² (5G peak); displacement of 0.35mm; 20 min per axis for all X, Y, Z direction			
Safety / Environmental				
EMC / Emissions	CISPR 22, CISPR 32, EN 55022, EN 55032, FCC Title 47: Class B GB9254.1			
Immunity	EN 55024, IEC 61000-4-2, IEC 61000-4-3, IEC 61000-4-4, IEC 61000-4-5, IEC 61000-4-6, IEC 61000-4-8, IEC 61000-4-12			
Voltage dips	Conform to IEC 61000-4-11			
Galvanic isolation	Input to Output: 3.0KVac, Input to Ground: 1.5KVac, Output to Ground: 0.5KVac			
Approvals	SIQ Bauart: EN 62368-1 UL 62368-1 and CSA C22.2 No. 62368-1 (File No. E508040) CCC, GB9254, GB 17625.1 and GB 4943.1 CB scheme: IEC 62368-1, CE (In conformance with EMC Directive 2014/30/EU and Low Voltage Directive 2014/35/EU)			
	CE c UL us E508040 RoHS 2002/95/EC			
RoHS Compliant	Yes			
Operating temperature	-20˚C to + 70˚C			
Storage temperature	-40°C to +85°C			
Humidity at +25 °C, no condensation	5 to 95% RH (Non-Condensing)			