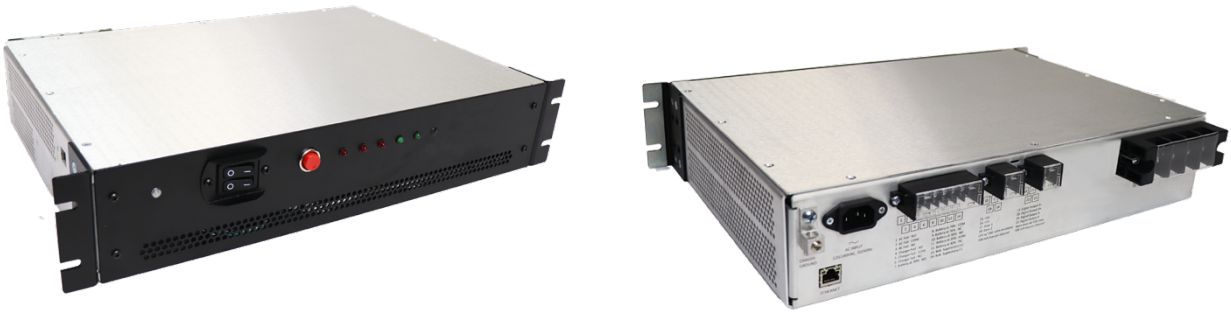




www.duracomm.com



RACK MOUNT POWER SUPPLY WITH BATTERY MANAGEMENT SYSTEM AND NFPA® 1221 ALARMS

PSRM-5012NFP / PSRM-2524NFP / PSRM-1248NFP

OWNER'S GUIDE

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IMPORTANT SAFETY INSTRUCTIONS

1. SAVE THESE INSTRUCTIONS – This manual contains important safety and operating instructions for PSRM-5012NFP, PSRM-2524NFP, and PSRM-1248NFP.
2. CAUTION – To reduce risk of injury, charge only lead-acid AGM rechargeable batteries. Other types of batteries may burst causing personal injury and damage.
3. Back-feed protection battery charger. Before using battery charger, read all instructions and cautionary markings on the battery charger, battery, and product using battery
4. This equipment must be installed, operated, and serviced by qualified/trained personnel with all wiring compliant to local electrical codes.
5. Power supply must be operated from a standard 3-pin 120VAC or 240VAC 50/60Hz outlet with proper grounding.
6. Select the proper AC input voltage on the voltage selector. Excessive input voltage may cause damage to the internal circuit.
7. Ensure DC polarities and rated voltage are correct for the load and battery connections to the unit.
8. Always consult with battery manufacturer and observe all battery manufacturer recommendations.
9. Internal circuits can be energized with the power switch in the off position.
10. Physically disconnect all external power sources before attempting any service activities.
11. There are no user serviceable parts inside. High voltage may be present. Service must be referred to qualified factory personnel.
12. The individual user should take care to determine prior to use or installation whether this device is suitable, adequate, and safe for the intended use. Since individual applications are subject to numerous variations, DuraComm makes no representation or warranty as to the merchantability, suitability, or fitness of these units for any specific application.

Section 1 | Product Overview

The PSRM series is an AC to DC power supply with a built-in smart charger and a low voltage disconnect in a 2U chassis. The power module inside the unit comes with power factor correction, and four layers of protection against overload, over voltage, over temperature, and short circuit.

Product Features

- Integrated smart charger and low voltage battery disconnect
- Manual battery disconnect switch
- NFPA® 1221 compliant form C alarm outputs
- Battery supervisory
- LED alarm Indicators

See www.duracomm.com for more information.

Section 2 | Installation and Operation

NOTE: Inspect shipment upon receipt. Notify carrier if any damage occurs.

NOTE: The outputs are NOT referenced to the chassis.

NOTE: Do NOT block any cooling vents, and always allow adequate ventilation.

NOTE: Using battery capacity larger than the suggested value will not lead to damage of the battery. The main drawback is the longer time to fully charge the battery.

NOTE: If you are unsure about max allowable charging current of your battery, please refer to the technical specification of the battery or consult its manufacturer. This unit is designed for charging lead-acid batteries and must be installed in a dry and well-ventilated area.

NOTE: The cables between charger and battery should be kept as short as possible to prevent excessive voltage drop. Too much voltage drop will lead to longer charging periods. Refrain from connecting new and old batteries in series. Charger should be in the OFF mode before making battery connection or disconnection.

Conductor Pretreatment

All kinds of copper conductors can be clamped without treatment. DO NOT solder tin stranded conductors. The solder yields and fractures under high pressure. The result is increased contact resistance and excessive temperature rise. Additionally, corrosion has been observed due to the fluxes. Notch fractures at the transition from the rigid tinned part to the flexible conductors are also possible. Ferrules can be used as a protection when wiring stranded conductors. Copper ferrules prevent the current transfer from being influenced by dissimilar metals and remove the risk of corrosion. Always use the correct tool to crimp the ferrule.

Recommended Copper Wire Size for Current Capacity

According to MIL-W-5088B, required wire size of an insulated, single conductor in free air for a given current level is shown as following:

Current Level in Amperes	Wire Size Requirement up to 5 feet	Wire Size Requirement up to 10 feet
14 Amps	18 AWG	16 AWG
20 Amps	16 AWG	14 AWG
30 Amps	14 AWG	12 AWG
40 Amps	12 AWG	10 AWG
50 Amps	10 AWG	8 AWG
70 Amps	8 AWG	6 AWG
100 Amps	6 AWG	4 AWG

Front Panel Switch / Indicators

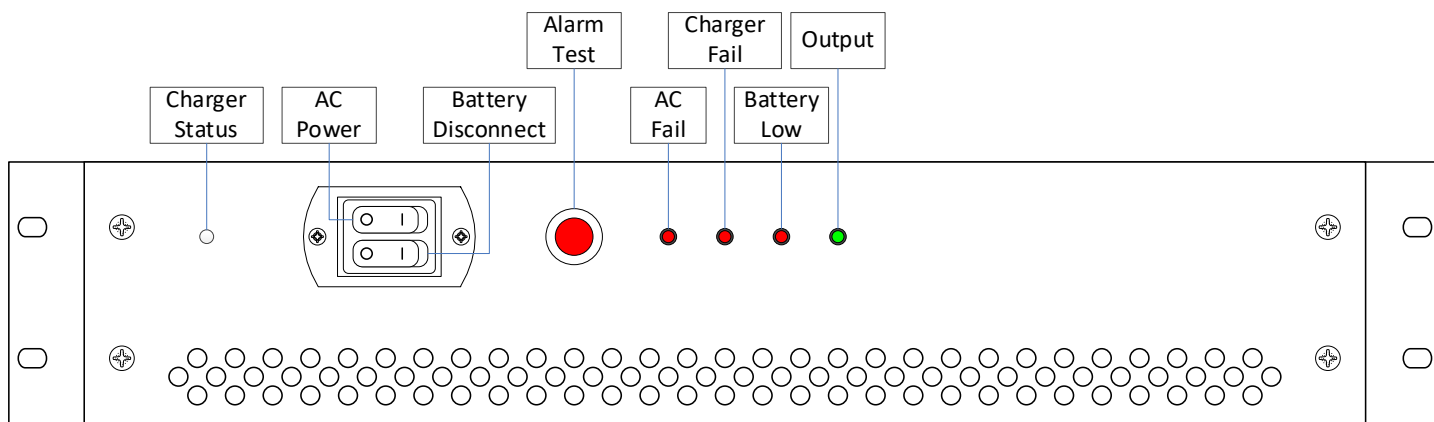


Figure 1. Front panel layout.

Rear Panel Connections

Due to safety, use only type SPT-2 cord or heavier duty cord.

Use proper size AWG copper wires for load and battery terminals.

Only connect and charge lead-acid AGM batteries configured to proper battery voltage to the battery charger terminal.

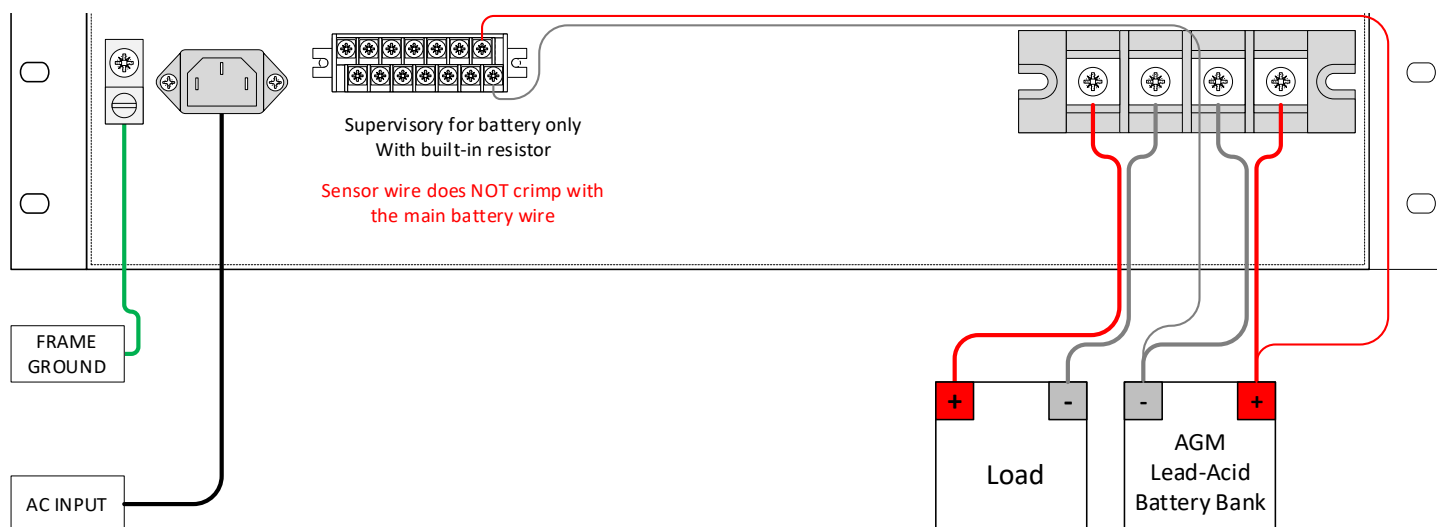


Figure 2. Rear panel connections.

Rear Alarm Wiring

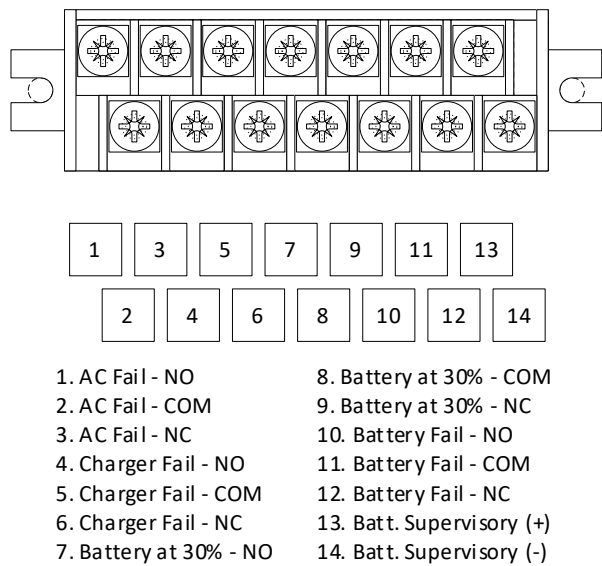


Figure 3. Form C Alarm wiring .

Between Digital Out (+) and (-)	Output Status
Alarm ON/LOW	Closed
Alarm OFF/HIGH	Open

Battery LVD

The ARC unit provides continuous power to the load while AC power is on. There is a seamless transfer of the load to the battery when the AC power is unavailable. The LVD will disconnect the battery if the battery voltage drops below the disconnect voltage. The LVD will reconnect the battery when AC power is restores and the battery voltage reaches the reconnect voltage.

Battery Charging

ONLY charge lead-acid AGM batteries. Other types of batteries may burst causing personal injury and damage.

Figure below shows the charging curve of lead-acid AGM batteries and the status of the charger at different LED color on the front panel.

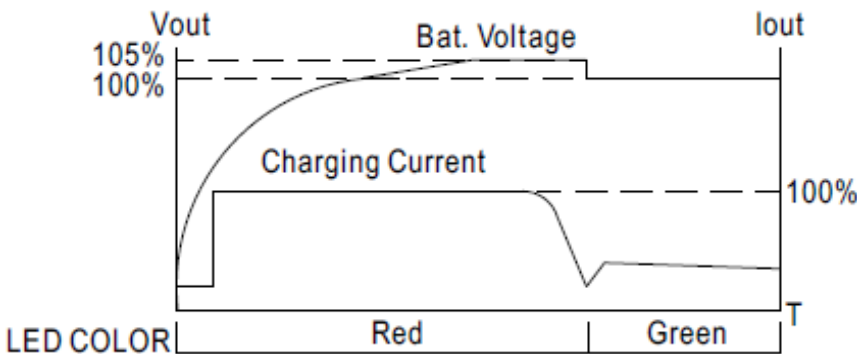


Figure 4. Battery charging curve.

Section 4 | Specifications

Model		PSRM-5012NFP	PSRM-2524NFP	PSRM-1048NFPMU
Input	Input AC Voltage	115/230 VAC Switch Selected		
	Input AC Frequency	50/60 Hz		
	Power Factor	0.98 / 115 VAC 0.97 / 230 VAC		
	Max AC Current	11.2 A / 115 VAC 5.4 A / 230 VAC		
Power Supply Output	DC Voltage	13.8	27.6 VDC	55.2
	DC Current	54 Amps	27 Amps	13 Amps
	Rated Module Power	750 Watts		
	Max Ripple and Noise	150 mV p-p		
	Line Regulation	± 0.5 %		
	Load Regulation	± 0.5 %		
	Overload Protection	105 – 125% rated output power Constant current limiting, auto recover		
	Over Voltage	17.0 - 20.5 V	31.0 - 36.5 V	56.6 - 66.2 V
	Over Voltage Protection	Shutdown output voltage, re-power to recover		
	Over Temperature Protection	70°C ± 10°C Shutdown output voltage, auto recover		
Battery Charger Output	Charger Voltage	13.8 VDC	27.6 VDC	55.2 VDC
	Charger Current	7 Amps	4 Amps	2 Amps
	Charger Module Power	100 Watts	120 Watts	120 Watts
	Suggested Battery Capacity	30 - 80 Ah	15 - 40 Ah	10 - 20 Ah
	Battery Type	Lead-Acid / AGM		
	LED Indicator	Red = high rate boost charge / Green = float charge		
BBLVD	Nominal Battery Voltage	12 VDC	24 VDC	48 VDC
	Rated Relay Current	75 Amps	75 Amps	75 Amps
	LVD Disconnect / Reconnect	10.0 VDC / 12.5 VDC	20 VDC / 25 VDC	40 VDC / 50 VDC
	OR-ING Diodes	Auto-revert between power supply and battery power		
Others	RMCU Features	HTTP Webserver, TCP/IP, IPv4, Email, SMTP, SNMP v1/v2c/v3, Data/Alarm Logging		
	Operating Temperature	-20°C to 60°C		
	Operating Humidity	≤ 90% non-condensing		
	Weight & Dimensions	Shipping Weight = 14 lbs. Dimensions = 3.5 H x 19 W x 13 D inches		

Note: Specifications are subject to change without notice.

Section 5 | Warranty

DuraComm warrants to the initial end user, each power supply manufactured by DuraComm to be free from defects in material and workmanship when in normal use and service for a period of three years from the date of purchase from an authorized DuraComm dealer.

Should a product manufactured by DuraComm fail or malfunction due to manufacturing defect, or faulty component, DuraComm, at its option, will repair or replace the faulty product or parts thereof, which, after examination by DuraComm, prove to be defective or not operational according to specifications in effect at the time of sale to the initial end user. The product that is replaced or repaired under the provisions of this warranty will be warranted for the remainder of the original warranty period, only, and will not extend into a new three-year warranty period.

The limited warranty does not extend to any DuraComm product which has been subject to misuse, accidental damage, neglect, incorrect wiring not associated with the manufacturer, improper charging voltages, or any product which has had the serial number removed, altered, defaced, or changed in any way.

DuraComm reserves the right to change, alter, or improve the specifications of its products at any time, and by so doing, incurs no obligation to install or retrofit any such changes or improvements in or on products manufactured prior to inclusion of such changes.

DuraComm requires any product needing in or out of warranty service to be returned to DuraComm. All requests for warranty service must be accompanied by proof of purchase, such as a bill of sale with purchase date identified. DuraComm is not responsible for any expenses or payments incurred for the removal of the product from its place of use, transportation or shipping expenses to the place of repair, or return expenses of a repaired or replacement product to its place of use.

The implied warranties that the law imposes on the sale of this product are expressly LIMITED, in duration, to the three (3) year time period specified herein. DuraComm will not be liable for damages, consequential or otherwise, resulting from the use and operation of this product, or from the breach of this LIMITED WARRANTY.

Some states do not allow limitations on the duration of the implied warranty or exclusions or limitations of incidental or consequential damages, so said limitations or exclusions may not apply to you. This warranty gives you specific legal rights which vary from state to state.

This warranty is given in lieu of all other warranties, whether expressed, implied, or by law. All other warranties, including WITHOUT LIMITATION, warranties of merchantability and fitness or suitability for a particular purpose, are specifically excluded. DuraComm reserves the right to change or modify its warranty and service programs without prior notice.

Section 6 | Contact Us

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