

# Power Modules



These versatile Rectifier Modules function as either power supplies or battery chargers for 12, 24 or 48 volt systems; positive, negative or floating ground. They may be employed singly or in combination, enabling the installer to scale the system

anywhere from 500 to 10,000 watts per rack. Units may be paralleled for N + 1 redundancy and alarm contacts allow local or remote monitoring. An optional DC quick connect wiring kit allows easy replacement of modules without system shutdown.

Power Modules may be used separately as a power source, or they may be integrated with the Power Function Manager (see RPS System **page 12** to greatly expand the system capability with other functions such as digital output monitoring, powering multiple loads via circuit breaker distribution and low voltage battery disconnect.

## Features

- 12, 24 or 48 volts output; pos., neg. or floating ground
- 115 or 230 VAC, 50-60 Hz input 560 & 1000 watt models
- 230 VAC only 2200 watt model
- 560, 1000 or 2200 watts per module (approx.)
- Built-in oring diode for parallel or N + 1 configuration
- Power supply or battery charger operation (DC UPS system)
- Optional battery charging circuit: three-step charging, gel/lead-acid switch, and temperature compensation
- Form C alarm contacts
- 19" or 23", 2 RU, flush or 6" forward rackmount



Power Modules integrated in complete system, see page 26 for details

Rectifiers/Power Supplies

Model	Input Amps @ Full Load 115/230V	Output			Watts	Weight	
		VDC V Out	VDC V2	Amps Cont.+		Lbs	Kg.
PM-12-40A	8.5/4.3	13.6	14.3	40	560	12.2	5.5
PM-12-80	16/8	13.6	—	80	1000	15.2	6.9
PM-24-20	8.5/4.3	27.2	27.9	20	560	12.2	5.5
PM-24-40	16/8	27.2	—	40	1000	15.2	6.9
PM-48-10	8.5/4.3	54.4	55.1	10	560	12.2	5.5
PM-48-20	16/8	54.4	—	20	1000	14.0	6.4
PM-48-50	*/22	54.4	—	50	2200	34	15

VDC (V out) Measured at output terminal with oring diode

\* 230 VAC input only

VDC (V2) Measured at direct output terminal

+ For parallel configuration/load sharing derate output 10%

# Power Modules

## Performance Specifications

### Input:

- 85 - 135/170-270 VAC (selectable), 47 - 63 Hz., 560 watt models
- 90 - 265 VAC, 1000 watt models
- 207 - 253 VAC, 2200 watt model

**Power Factor:** 0.7, 560W & 2200W models  
0.98, 1000W models

**Regulation:** ± 1% at direct output (V2);  
± 2% through "oring" diode (V out)

**Ripple:** 1% (Typical)

**Efficiency:** 80-85% @ full load

### Front panel Output Voltage Adjustment

**Pot Range:** ±10%

**Altitude Range:** Full output to 5,000 feet. Derate output current 4% per 1,000 feet to 10,000 feet max.

## Temperature Rating

**560 watt models:** -40° C to +60° C;  
Derate linearly from 100% load @ 50° C to 75% @ 60° C

**1000 watt models:** -20° C to + 70° C;  
Derate linearly from 100% load @ 50° C to 50% @ 70° C

**2200 watt model:** 0 - 50° C

## Mechanical/General

- Powder coated aluminum front panel and cover
- Vinyl laminated base and cover
- 19" Rackmount brackets provided
- Wallmount via optional brackets
- AC Input wiring:
  - 560 watt units: IEC AC entry, 6' IEC cord with NEMA 5-15 plug provided
  - 1000 watt units: IEC entry, 6' IEC power cord with NEMA 20 plug provided
  - 2200 watt unit: Hardwire junction box, no power cord provided
- 1/4" -20 Output stud (560 watt models)
- Output bus bar (1,000 & 2200 watt models) with 1/4" - 20 bolts
- Output "OK" L.E.D.
- Multi color LED: Green = Ok, Red = Fail (1000W models only)
- Loss-of-output alarm contacts- Form C, plus loss of AC alarm contacts Form C (1000 & 2200 watt units only)
- Front panel voltage test points

## Options

- Three stage charger function with gel/lead-acid selector Model: CFB (560 & 1000 watts only)
- Temperature compensation (for battery charging). All models.
- DC Quick Connect Wiring Kit:
  - 560 watt models:** QCK-3 (for 2-3 unit PM system) & QCK-6 (for 4-6 unit PM system)
  - 1000 watt models:** QCK-3A (for 2-3 unit PM system) & QCK-6A (for 4-6 unit PM system)
  - 2200 watt model:** CCK-4
- "Universal" mounting bracket; Model: UMB-PM (500 & 1KW models only)
- Metering, alarms, LVD and distribution breakers (PFM-400 or ULM-100 module options)

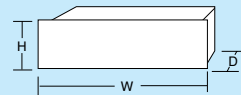
## Protection

- Output fuse for reverse polarity
- Current limit
- Input circuit breaker
- Automatic high temp. output power reduction (560W & 2200W models)
- Forced air cooling with filter provided (560W models only)

## Design Standards

- UL 1950 / EN 60950 (Safety)
- EN 50082 (Immunity)
- EN 55014 (Conducted)

### Case Size - All Models



Inches	H	W*	D
	3.5	17	20.5
Centimeters			
	13.5	43.2	52.1

\*19" mounting brackets provided