

# TECHNICAL SPECIFICATION

RM4850(3KW)



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# Rectifier Module RM4850

## 1. Overview

### 1.1 Appearance



Indicator Marking	Color	Status
Operation Indicator	Green	Green light is on when input AC voltage is normal, green light flashes when monitoring is connected.
Protection indicator	Yellow	Input over-undervoltage, over-temperature protection and power bus voltage is not normal, the yellow light is always on when the load is not equalizing current, CAN communication is abnormal when flashing.
Fault indicator	Red	Output over-voltage, module failure, power shutdown red light, fan failure red light flashes.

Rectifier Module Indicator Description

### 1.2 Product Performance Introduction:

RM4850 is a high-efficiency switching power supply with an input voltage range of 80~300Vac. The power supply has functions such as AC input undervoltage protection, output overcurrent protection, output overvoltage protection, output short circuit protection, and overtemperature protection.

#### Features:

- Wide input voltage: 85V ac~300V ac
- Multiple battery management functions
- Hot-swappable modular design
- High efficiency, peak > 96.5%
- With working status indicator light
- High input power factor, low harmonic distortion
- Low ripple noise
- Overvoltage/ Overtemperature/ Output overcurrent/ Output short circuit/ Output overvoltage protection
- Compliant with RoHS requirements
- Soft Start function

## 2.Reference standards and specifications

- EN55032
- CISPR32
- UL61000
- UL60950-1
- ETSI EN 300 019
- IEC 61000-4-5 2014
- IEC 61000-4-4 2012
- IEC 61000-4-11 2003
- IEC 61000-4-3 2006
- IEC 61000-4-2 2018
- IEC 61000-4-8 2009
- IEC 61000-3-2:2018
- IEC 61000-4-6: 2018

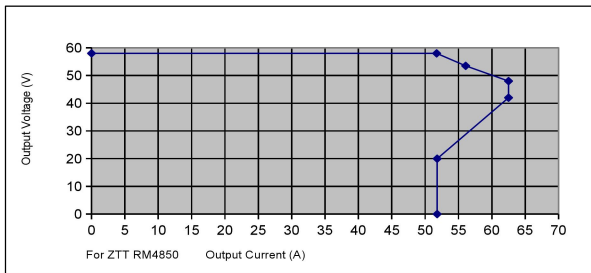
## 3.Electrical Characteristics

Rectifier module electrical characteristics

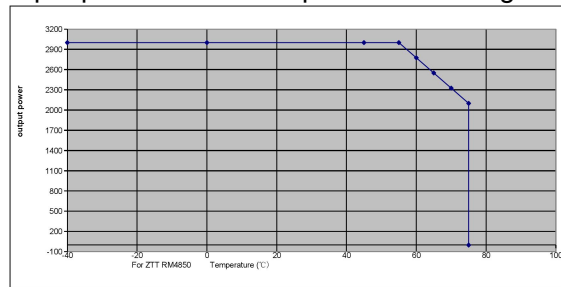
1. Input Characteristics				
No.	Parameter Name	Specific value	Unit	Remarks
1.1	Rated input voltage	230	Vac	Pout derate when < 176Vac
	AC input voltage range	85~300		
1.2	AC input frequency range	45~65	Hz	
1.3	Power factor	≥0.99	-	230Vac input, rated power
1.4	THD	< 5%		230Vac input, ≥50% load
1.5	Impulse current	≤27.75	A	230Vac input
1.6	Maximum input current	18.5	A	
2. Output Characteristics				
2.1	Output voltage range	42~58V	Vdc	
2.2	Typical output voltage	48	Vdc	Adjustable
2.3	Maximum output current	62.5	A	
2.4	Output power	3000	W	220Vac
2.5	Efficiency	≥96.5%(peak) (@230Vac)	%	230Vac
2.6		≥ 95% at load from 25% to 80%		
2.7	Ripple and noise	≤200	mVp-p	Oscilloscope bandwidth limited to 20MHz
2.8	Output holding time	≥8	ms	
2.9	Temperature factor	≤±0.02	%/°C	
2.10	Voltage adjustment rate	≤144	mv	
2.11	Load adjustment rate	≤144	mv	
2.12	Output voltage accuracy	≤0.5	%	
2.13	Output current accuracy	≤1	%	
2.14	Load sharing	Yes	/	
3. Protect Characteristics				
3.1	Input undervoltage protection point	80±5	Vac	
3.2	Input undervoltage recovery point	100±5	Vac	
3.3	Input overvoltage protection point	305±5	Vac	

3.4	Input overvoltage recovery point	290±5	Vac	
3.5	Output overvoltage protection	≥58.5	Vdc	Tested with 5A
3.6	Output short circuit protection	Yes	-	
3.7	Over temperature protection	Yes	-	≥75℃
3.8	CAN communication	Yes	-	
3.9	Parallel working	Yes	-	Maximum 48 power supplies can be paralleled
3.10	Remote control	Yes	-	CAN control
3.11	Output overcurrent protection	≥62.5	A	
3.12	Reverse polarity protection	Yes	/	/
<b>4.Environment Conditions</b>				
4.1	Working temperature	-40 — +75	℃	It can work normally at -40℃. Ambient temperature 45℃ to 75℃ ,output power starts to derate. ≥ 300,000hours at standard temperature 25℃ )
4.2	Storage temperature	-40 — +85	℃	
4.3	Relative humidity	Working	≤90%	
		Storage	≤95%	
4.4	Altitude	≤2000	m	The output power starts to drop when the altitude is higher than 2000m
4.5	Cooling method	Forced air cooling		The speed is automatically adjusted according to the temperature
<b>5.Safety And EMI Characteristics</b>				
Item		Standards (or test conditions)		Remarks
Electrical strength resistance	Input—Ground	1500Vac/30mA/ 1min		No breakdown, flashover phenomenon; leakage current less than 30mA
	Input—Output/CAN	2500Vac/30mA/ 1min		
	Output/CAN—Ground	707Vdc/30mA/ 1min		
Insulation resistance	Input—Ground	≥5MΩ@500Vdc		Environment temperature: 25±5℃ Relative humidity : < 95%(No condensation)
	Input—Output/CAN	≥5MΩ@500Vdc		
	Output/CAN—Ground	≥5MΩ@500Vdc		
Safety standards		UL60950-1, UL508, CSA C22.2 No.60950-1		
Leakage current		≤7mA	230Vac	
Lightning strike		8/20us 5KA		
Surge immunity	Input wire-to-wire, wire-to-ground	4kV		No cracks or alarms were found in the power supply during or after the test
	Output wire-to-wire, wire-to-ground	500V		
Electrostatic discharge immunity		Contact discharge 6kV, air discharge 8kV		No cracks or alarms were found in the power supply during or after the test
Radiation EMF immunity		Frequency range 30MHz-1GHz, according to EN 55032 class A, 10m distance.		
Conductive Immunity		Frequency range 150 kHz-30MHz according to EN 55032 class A		
<b>6.Mechanical Characteristics</b>				
6.1	Product weight	≤2000		g
6.2	Dimension(L×W×H)	280.0±0.5×105.0±0.3×41.0±1.0		mm

Derating curve of Iout VS. Vout



Output power versus temperature derating curve



Derating curve of Pout VS. Vin

