Spec No.:XM2502110021-1-A

TECHNICAL SPECIFICATION

RM4850(3000W)

Version	Date	Prepared	Reviewed	Approved	Accepted
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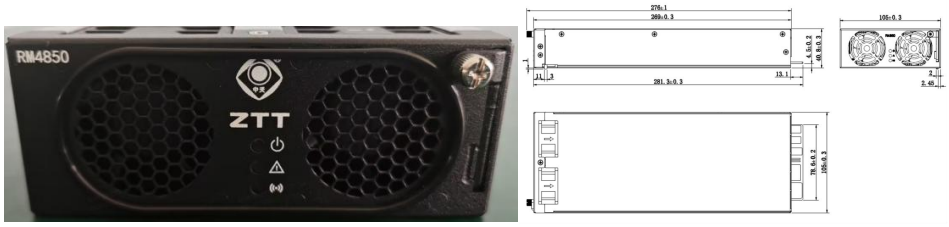
Rectifier Module RM4850

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 shut down 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 85~290Vac.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：

- High efficiency, peak 96.2%
- Parallel operation is possible via CAN control
- With working status indicator light
- High input power factor, low harmonic distortion
- Low ripple noise
- Overvoltage/ Overtemperature/ Output overcurren/ Output short circuit/ Output overvoltage Protection
- Load sharing ≤5% @full load
- Compliant with RoHS requirements
- Hot swappable
- Fans cooling

2. Reference standards and specifications

- EN55032
- CISPR32
- UL61000
- UL60950-1
- 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

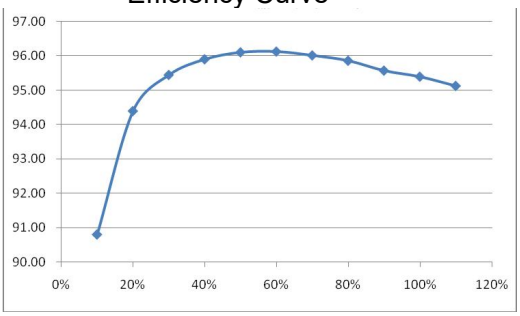
1. Input Characteristics				
No.	Parameter Name	Specific value	Unit	Remarks
1.1	Rated input voltage	220	Vac	Pout derate when＜176Vac
	AC input voltage range	85~290		
1.2	Non-destructive voltage	0~415	Vac	
1.3	AC input frequency range	45~65	Hz	Rated: 50/60Hz
1.4	Power factor	≥0.98	-	230Vac input, 50%~100%load
1.5	THD	＜5%		230Vac input, ≥50% load
1.6	Impulse current	≤27.75	A	230Vac input
1.7	Maximum input current	18.5	A	
2. Output Characteristics				
2.1	Output voltage range	42~58V	Vdc	
2.2	Typical output voltage	53.5	Vdc	
2.3	Maximum output current	62.5	A	
2.4	Output power	3000	W	220Vac
2.5	Peak Efficiency	96.2%	%	230Vac(around 60% load)
	Efficiency	95%	%	≥30% load
2.6	Ripple and noise	≤200	mVp-p	Oscilloscope bandwidth limited to 20MHz
2.7	Output holding time	≥8	ms	
2.8	Temperature factor	≤±0.02	%/℃	
2.9	Voltage adjustment rate	≤144	mv	
2.10	Load adjustment rate	≤144	mv	
2.11	Output voltage accuracy	≤1	%	≤±0.25V
2.12	Output current accuracy	≤2	%	
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	-	
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	
4.Environment Conditions				
4.1	Working temperature	0 — +75	℃	Ambient temperature 55℃ to 75℃ ,output power starts to derate.
4.2	Storage temperature	-40 — +85	℃	
4.3	Relative humidity	Working	≤95%	
		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		

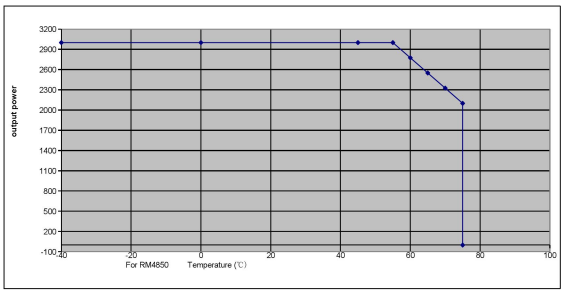
5.Safety And EMI Characteristics			
Item		Standards (or test conditions)	Remarks
Electrical strength resistance	Input— Ground	1500Vac/30mA/ 1min	No breakdown, flashover phenomenon; leakage current less than 30mA
	Input— Output/ CAN	2500Vac/30mA/ 1min	
	Output/CAN—Ground	707Vdc/30mA/ 1min	
Insulation 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	

6.Mechanical Characteristics			
6.1	Product weight	≤2000	g
6.2	Dimension(L×W×H)	287.14±0.5×105.0±0.3×40.8±0.3	mm

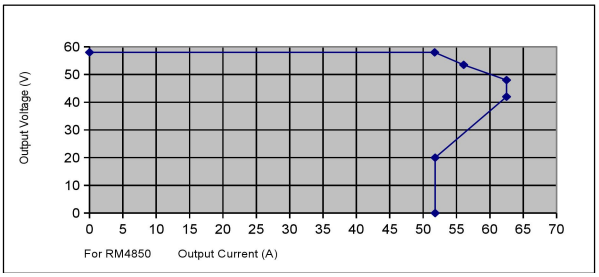
Efficiency Curve



Output power versus temperature derating curve



Derating curve of Iout VS. Vout



Derating curve of Pout VS. Vin