



## RPS-4M/W4

4-slot Industrial Redundant Power Supply.  
Includes four RPS-100 modules

### Features

- Convert 90~264 VAC to 24 VDC
- Each slot can insert a 100W power module
- Power module supports hot swapping
- 4-slot design for N+1 Redundant
- Built-in load balancing and power diagnosis functions
  - Temperature monitoring of power module
  - Current monitoring
  - Power module failure (relay output)
  - Used time of Power module
- Support Modbus RTU/TCP Protocol



### Introduction

The RPS-4M/W4 has built-in Ethernet and RS-485 communication interfaces, which can not only monitor the operation status of the power modules in real time, but also instantly return various real-time information of the power modules, including load current, temperature, existence of the power module in the slots, malfunction of the power module, etc. The information not only can be used to evaluate the health condition of the power module itself, but also can be record to estimate the power consumption of the whole system, and an instant warning can be sent when abnormal power consumption occurs. Through the information, user can easily implement predictive alarm and fault alarm function for the system.

In addition, the RPS-4M/W4 can also record the using time of each power module, which can be used as a basis for maintenance and replacement and estimate MTBF (Mean Time Between Failures). When the power module has reached the recommended service life, user can replace it early to make the power system more reliable and stable.

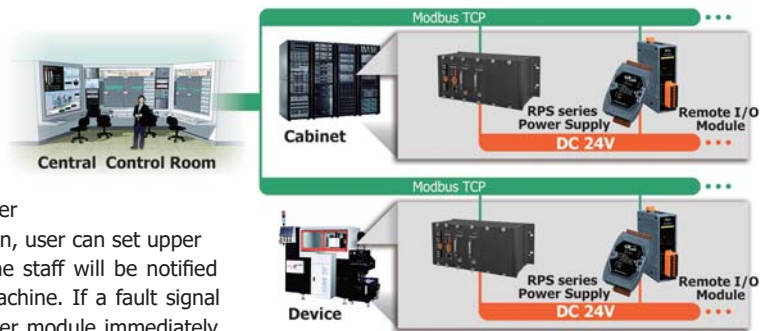
The RPS-4M/W4 has a built-in load balancing function, so there is no need to add extra load balancing modules. In addition, the RPS-4M/W4 adopts a slot-type design, and it supplies hot swapping function, so when user replaces the power module, there is no need to turn off the power system. In comparison to the traditional power supply, the RPS-4M/W2 saves the trouble of wiring, and it is simpler and safer.

### Applications

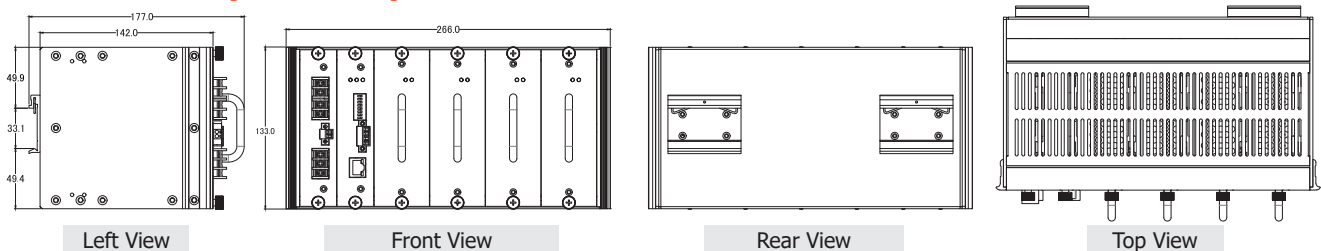
The RPS-4M/W4 can be used for power supply of remote IO equipment and control system. User can implement power redundancy and communication function through RPS-4M/W4. The RPS-4M/W4 can return power module information which includes load current, temperature, existence of the power module in the slots, malfunction of the power module in real time.

So user can monitor the current and temperature of power modules in the control room. According to the information, user can set upper and lower limit alarm. When the range is exceeded, the staff will be notified to check whether there is any abnormal state of the machine. If a fault signal is detected, the staff will be notified to replace the power module immediately.

Through long-term measurement and recording of various historical data of power supply, user can obtain normal values and upper and lower warning values by using statistical analysis techniques. Not only the stability of the power supply and failure warning can be controlled, but also the energy consumption and health of the electrical equipment can be analyzed. Therefore, the overall monitoring system will be smarter, more reliable and stable.



### Dimensions (Units: mm)



## RPS-100(Power Module) Specifications

Output	
DC Voltage	24V
Rated Current	4.16A
Current Range	0 ~ 4.16A
Rated Power	100W
Ripple & Noise(max.)	50mVp-p
Voltage adj. Range	23~25V
Voltage Tolerance	±1.0%
Line Regulation	±1.0%
Load Regulation	±3.0%
Setup, Rise Time	1300ms,120ms at full load
Hold Up Time(Typ.)	40ms at full load
Input	
Voltage Range	90~264VAC
Frequency Range	47 ~ 63Hz
Power Factor(Typ.)	PF=0.961/230VAC at full load, PF=0.985/115VAC at full load
Efficiency(Typ.)	86%
AC Current(Type)	1.01A/115VAC 0.51A/230VAC
Inrush Current	COLD START 30A/115VAC 60A/230VAC
Leakage Current	Earth<3.5mA ,Touch<0.25mA
Protection	
Overload	110%~200% (Automatic recovery)
Over Voltage	26.4~31.2 (Automatic recovery)
Environment	
Working Temperature	-20~50°C
Working Humidity	5~95%RH Non-condensing.
Storage Temperature, Humidity	-40~85°C
Vibration	0.26~6.09 G Frequency Type: Sweep Frequency Frequency Range: 10~55 Hz Displacement: 1.0mm Sweep Rate: 60 minute / cycle Number of cycle: 1 cycle / axis Direction: X ,Y and Z axis
Safety & EMC	
Safety Standards	Design to meet 62368
Withstand Voltage	I/P-O/P:3KVAC I/P-FG:1.8KVAC O/ P-FG:0.5KVAC
Isolation Resistance	I/P-O/P, I/P-FG, O/P-FG:>100M Ohms / 500VDC
EMC Emission	EN 55032 CISPR 32 & FCC Part 15 B CLASS B : System with 4 module in parallel
EMC Immunity	EN 55022, CISPR 22 & FCC Part 15, EN 61000-3-2, EN 61000-3-3, EN 61204-3 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 61000-4-11

## RPS-4M(System)Specifications

COM Port		
Interface	RS-485	
Protocol	Modbus RTU	
Data Format	N,8,1 / O,8,1 / E,8,1 / N,8,2	
Baud Rate	Hardware Configuration: Fixed 9600 bps Software Configuration: 1200 ~ 115200 bps	
Node Address	1 ~ 64 for hardware configuration 1 ~ 255 for software configuration * For Modbus RTU, address 0 is auto become to 1	
Connector	4-pin screw terminal	
Ethernet		
Interface	1 x RJ-45, 10/100 Base-TX	
Protocol	Modbus RTU or DCON	
Safety	Password and IP Filter	
Measurement		
Current	Range	0A ~ 5 A
	accuracy	±0.25A
Temperature	Range	0°C ~ 100°C
	accuracy	±5°C
LED Indicators		
Power	1 LED as power indicator	
Communication	1 LED as Modbus Rx indicator	
Status	1 LED as status indicator	
EMS Protection		
ESD (IEC 61000-4-2)	±4 kV Contact, ±4 kV Air	
EFT (IEC 61000-4-4)	±2 kV for power line	
Surge (IEC 61000-4-5)	±2 kV for power line	
Power Requirements		
Input Voltage Range	90~264VAC, 47 ~ 63Hz	
Connector	3-pin screw terminal	
Mechanical		
Dimensions (W x L x H)	133 mm x 266 mm x 177 mm	
Installation	DIN-Rail	
Environment		
Operating Temperature	-20°C ~ +50°C	
Storage Temperature	-40°C ~ +85°C	
Humidity	10 to 90% RH, Non-condensing	

## Pin Assignments

DC output	Relay output	AC input	RS-485 interface																																		
<table border="1"> <thead> <tr><th>Pin</th><th>Description</th></tr> </thead> <tbody> <tr><td>1</td><td>+24 VDC</td></tr> <tr><td>2</td><td>+24 VDC</td></tr> <tr><td>3</td><td>GND</td></tr> <tr><td>4</td><td>GND</td></tr> </tbody> </table>	Pin	Description	1	+24 VDC	2	+24 VDC	3	GND	4	GND	<table border="1"> <thead> <tr><th>Pin</th><th>Description</th></tr> </thead> <tbody> <tr><td>1</td><td>Relay output NO.</td></tr> <tr><td>2</td><td>Relay output COM</td></tr> </tbody> </table>	Pin	Description	1	Relay output NO.	2	Relay output COM	<table border="1"> <thead> <tr><th>Pin</th><th>Description</th></tr> </thead> <tbody> <tr><td>1</td><td>Live Wire (L)</td></tr> <tr><td>2</td><td>Naught wire (N)</td></tr> <tr><td>3</td><td>Earth Wire (G)</td></tr> </tbody> </table>	Pin	Description	1	Live Wire (L)	2	Naught wire (N)	3	Earth Wire (G)	<table border="1"> <thead> <tr><th>Pin</th><th>Description</th></tr> </thead> <tbody> <tr><td>1</td><td>RS-485 Data+ (D+)</td></tr> <tr><td>2</td><td>RS-485 Data- (D-)</td></tr> <tr><td>3</td><td>RS-485 Data+ (D+)</td></tr> <tr><td>4</td><td>RS-485 Data- (D-)</td></tr> </tbody> </table>	Pin	Description	1	RS-485 Data+ (D+)	2	RS-485 Data- (D-)	3	RS-485 Data+ (D+)	4	RS-485 Data- (D-)
Pin	Description																																				
1	+24 VDC																																				
2	+24 VDC																																				
3	GND																																				
4	GND																																				
Pin	Description																																				
1	Relay output NO.																																				
2	Relay output COM																																				
Pin	Description																																				
1	Live Wire (L)																																				
2	Naught wire (N)																																				
3	Earth Wire (G)																																				
Pin	Description																																				
1	RS-485 Data+ (D+)																																				
2	RS-485 Data- (D-)																																				
3	RS-485 Data+ (D+)																																				
4	RS-485 Data- (D-)																																				

## Ordering Information

<b>RPS-4M/W4</b>	4-slot Industrial Redundant Power Supply. Includes four RPS-100 modules (RoHs)
------------------	--

## Accessories

<b>RPS-100</b>	Industrial Redundant Power Supply 100W Power Module
----------------	---