

RCP-1000 Series

1000W Front End Power Supply



Case No: 8013DT
295 x 127 x 41mm

Features

- Universal AC input / Full range
- Built-in active PFC function
- High Efficiency up to 89%
- Forced air Cooling by built-in DC fan
- Output voltage programmable
- Built-in OR-ing diode, support hot swap (hot plug)
- Active current sharing up to 3000W for one 19" rack shelf
- Optional I²C interface
- Protections: Short circuit / Overload / Over Voltage / Over temperature
- Optional conformal coat
- 5 years warranty

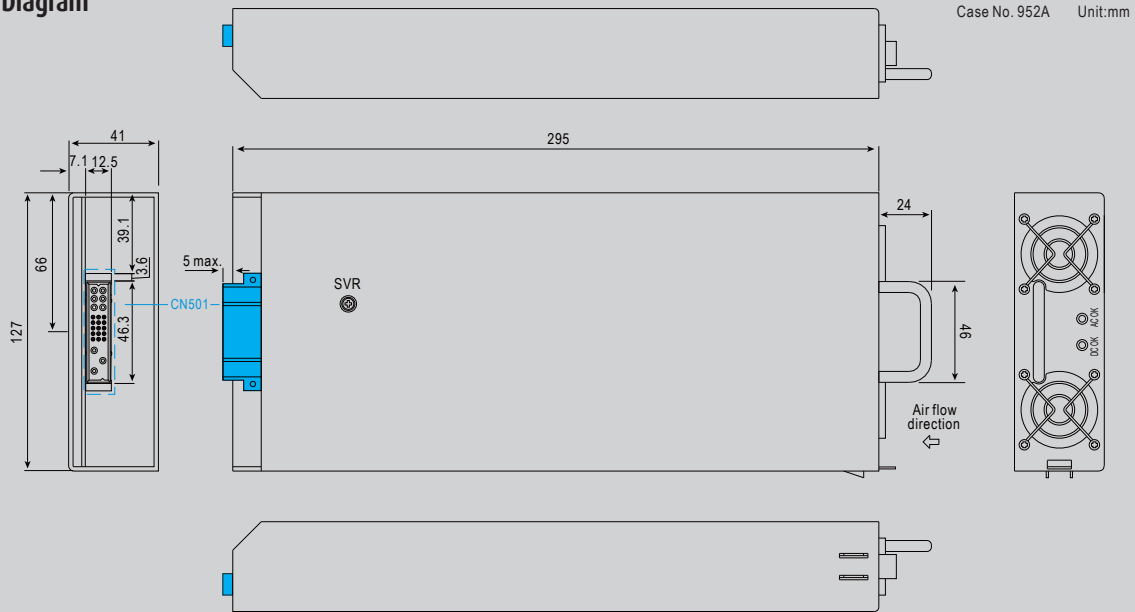


Specification

Voltage	90V ~ 264VAC	127 ~ 370VDC				
Frequency	47 ~ 63 Hz					
Current	8.5A/115VAC	4.5A/230VAC	10.5A/115VAC	5.5A/230VAC	11A/115VAC	5.5A/230VAC
Inrush Current (Typ.)	COLD START 50A					
Leakage Current	<1.1mA/230VAC					
Efficiency	81%			87%		
				89%		
MODEL No.	RCP-1000-12		RCP-1000-24		RCP-1000-48	
Voltage	12V		24V		48V	
Rated Current	60A		40A		21A	
Current Range	0~60A		0~40A		0~21A	
Rated Power	720W		960W		1008W	
Ripple Noise MAX.	150mVp-p		200mVp-p		300mVp-p	
Voltage Adj. Range	11.6~12.4V		23.2~24.8V		46.3~49.7V	
Voltage Tolerance	± 1.0%		± 1.0%		± 1.0%	
Line Regulation	± 0.5%		± 0.5%		± 0.5%	
Load Regulation	± 0.5%		± 0.5%		± 0.5%	
Setup Rise Time	1000ms, 60ms/230VAC at full load					
Holdup Time (Typ.)	16ms/230VAC at full load					
OVERLOAD	105~125% rated output power Protection Type: Constant current limiting, recovers automatically after fault condition is removed					
Over Voltage	13.2 ~ 16.2V		26.4 ~ 32.4V		52.8 ~ 64.8V	
Over Temperature	Shut down o/p voltage, recovers automatically after temperature goes down					
Auxiliary Power (Aux)	5V/0.3A					
Remote ON/OFF Control	By electrical signal or dry contact ON: short OFF: open					
Remote Sense	Compensate voltage drop on the load wiring up to 0.5V					
Output Voltage programmable	Adjustment of output voltage is allowable to 90 ~ 110% of nominal output voltage. Please refer to function manual.					
DC OK Signal	The isolated TTL signal out, Please refer to the information manual					
AC OK Signal	The isolated TTL signal out, Please refer to the information manual					
Over Temp Warning	Logic "High" for over temperature warning. Please refer to the installation Manual, isolated signal					
Working Temp.	-20~+60°C (Refer to "Derating Curve")					
Working Humidity	20~90% RH non-condensing					
Storage Temp., Humidity	-40~+85°C, 10~95%RH					
Temp. Co-efficient	±0.02% / °C (0~50°C)					
Vibration	10~500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes					
Safety Standards	UL60950-1, TUV EN60950-1 approved					
Withstand Voltage	I/P-O/P:3KVAC I/P-FG:2KVAC O/P-FG:0.7KVDC					
Isolation Resistance	I/P-OP, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25°C/70% RH					
EMC Emission	Compliance to EN55022 (CISPR22)/EN55011 (CISPR11), Class B, EN61000-3-2, EN61000-3-3					
EMC Immunity	Compliance to EN55024, EN61204-3, EN61000-6-2, EN61000-4-2,3,4,5,6,8,11,					
M.T.B.F.	274K hrs min. Telcordia SR-332 (Bellcore); 107.3K hrs min. MIL-HDBK-217F (25°C)					
Packaging	1.93Kg; 6pcs/12.6Kg/1.04CUFT					

1. All parameters not specially mentioned are measured at 230VAC input, rated load and 25°C or ambient temperature.
2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminates with a 0.1uF & 47uF parallel capacitor.
3. Tolerance: Includes set up tolerance, line regulation and load regulation.
4. The power supply is considered a component which will be installed into final equipment. All the EMC tests are being executed by mounting the unit on a 720, *360mm metal plate with 1mm thickness. The final equipment must be re-confirmed that it still meets EMC directives. For guidance on how to perform these EMC tests, please refer to 'EMI testing of component power supplies.'
5. Derating maybe needed under low input voltages, Please check the derating curve for more details.

Mechanical Diagram

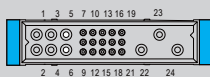


LED Status Indicators & Corresponding Signal at Function Pins

Function	LED	Description	* Signal	PSU Output
AC-OK	ON	When input voltage $\geq 82V \pm 4V$	0 ~ 0.5V	ON
AC-NG	OFF	When input voltage $\leq 82V \pm 4V$	4.5 ~ 5.5V	OFF
DC-OK	ON	When output voltage $\geq 80\% \pm 5\%$ of V_o rated.	0 ~ 0.5V	ON
DC-NG	OFF	When output voltage $\leq 80\% \pm 5\%$ of V_o rated.	4.5 ~ 5.5V	ON
T-OK	----	When the internal temperature (TSW1 & TSW2 short) is within safe limit	0 ~ 0.5V	ON
T-ALARM	----	When the internal temperature (TSW1 or TSW2 open) exceeds the limit of temperature alarm	4.5 ~ 5.5V	OFF

*Signal between function pin and "-V".

Input / Output Connector Pin No. Assignment(CN501) : Postronic PCB24W9M400A1

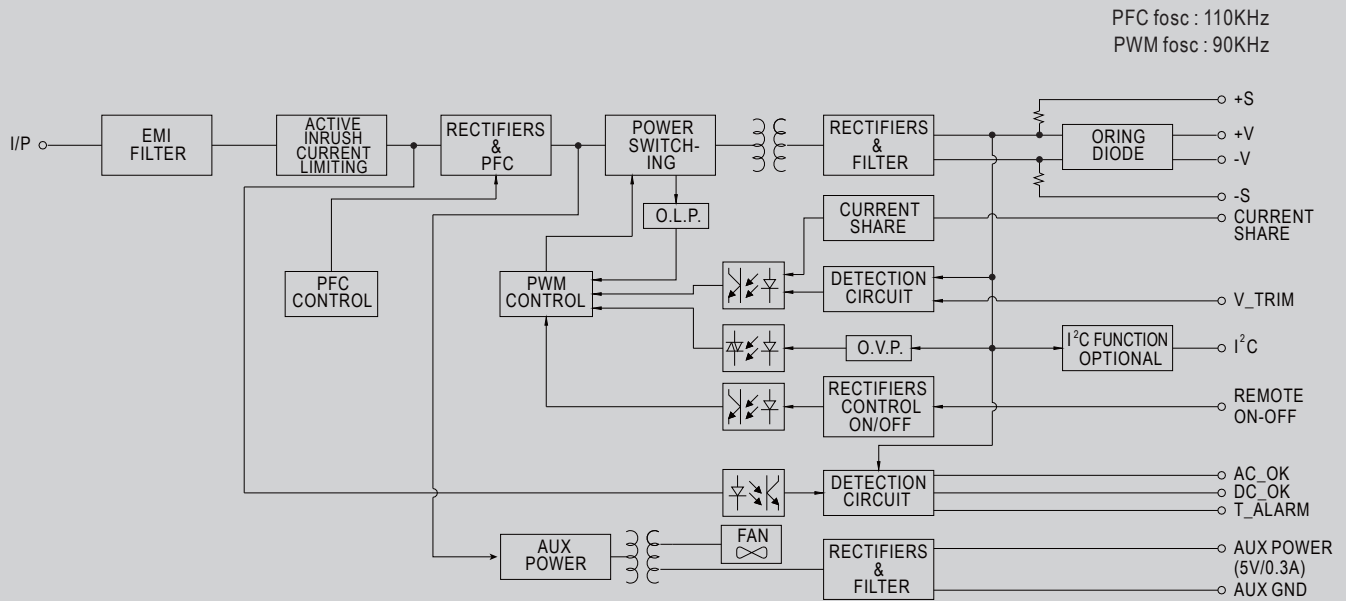


Mating Housing Postronic PCB24W9F400A1

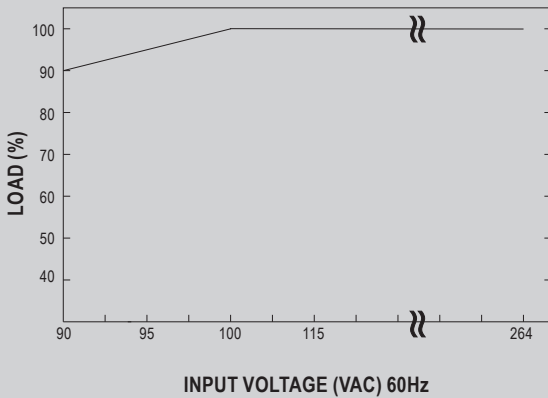
Pin No.	Function	Description
1,2,4	+V(signal)	Positive output voltage.
3,5,6	-V(signal)	Negative output voltage.
7	RemoteON-OFF	Each unit can separately turn the output on and off by electrical or dry contact . Short: ON, Open:OFF.
8	+S	Positive sensing for Remote Sense.
9	-S	Negative sensing for Remote Sense.
10	AC-OK	Low : When input voltage is $\geq 82V_{rms} \pm 4V$. High : When input voltage in $\leq 82V_{rms} \pm 4V$. (Note.1)
11	DC-OK	High : When $V_{out} \leq 80\% \pm 5\%$. Low : When $V_{out} \geq 80\% \pm 5\%$ (Note.1)
12	CS	Current sharing signal. When units are connected in parallel, the CS pins of the units should be connected to allow current balance between units.
13	V-TRIM	Connection for output voltage programming.
14	T-ALARM	High : When the internal temperature is within safe limit. (Note.1) Low : 10°C below the thermal shut down limit.
15	+5V-AUX	Auxiliary voltage output, 4.3~5.3V, referenced to GND-AUX(pin 7). The maximum load current is 0.3A. This output has the built-in "Oring diodes" and is not controlled by the remote ON/OFF control.
16	GND-AUX	Auxiliary voltage output GND. The signal return is isolated from the output terminals (+V & -V).
17	SCL	Serial clock used in the I ² C interface option. Refer to the Instruction Manual. (Note.1)
18	SDA	Serial data used in the I ² C interface option. Refer to the Instruction Manual. (Note.1)
19,20,21	A0,A1,A2	I ² C interface address lines. Refer to the Instruction Manual.
22	FG	AC Ground connection.
23	AC/L	AC Line connection.
24	AC/N	AC Neutral connection.

Note1: Non-isolated signal, referenced to the output terminal -V.

Block Diagram

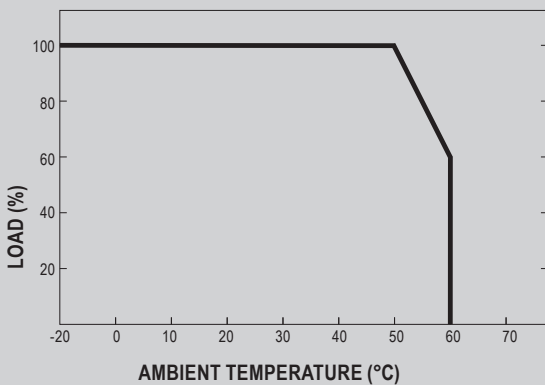


Static Characteristics

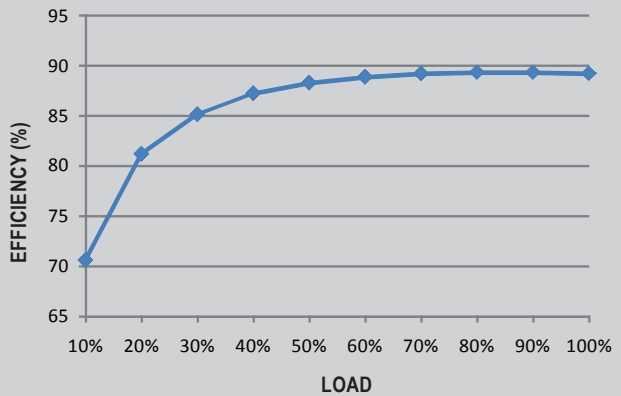


INPUT	MODEL		
	12V	24V	48V
180~264VAC	720W	960W	1008W
	60A	40A	21A
115VAC	720W	960W	1008W
	60A	40A	21A
100VAC	720W	960W	1008W
	60A	40A	21A
90VAC	648W	864W	907.2W
	54A	36A	18.9A

Derating Curve



Efficiency vs Load (48V Model)



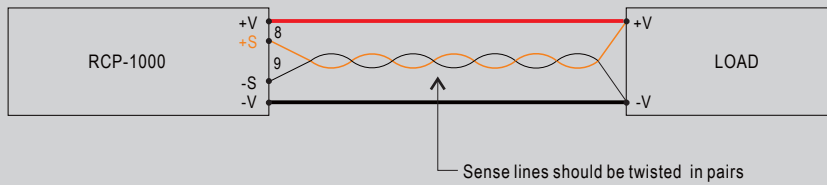
The curve above is measured at 230VAC.

Function Manual

1. Voltage Drop Compensation

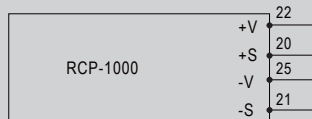
1.1 Remote Sense

The remote sense compensates voltage drop on the load wiring up to 0.5V.



1.2 Local Sense

The +S, -S have to be connected to the +V, -V, respectively, as the following diagram, in order to get the correct output voltage if Remote Sense is not used.

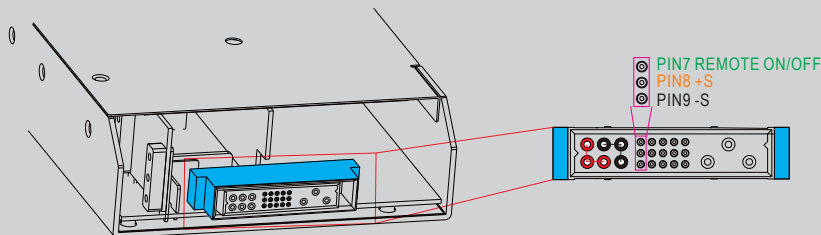


2. Remote ON/OFF Control

The power supply can be turned ON/OFF together or separately by using the "Remote ON-OFF" function.

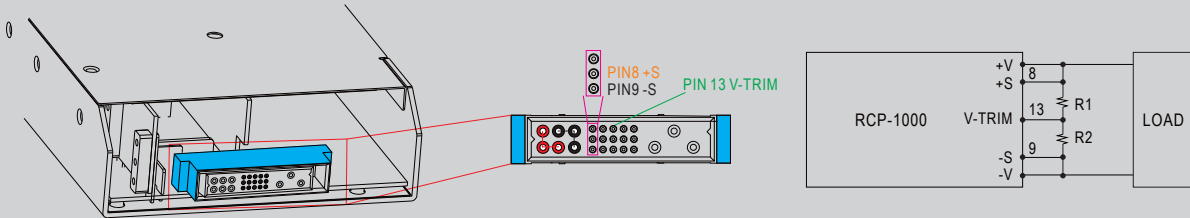


Between Remote ON-OFF and -S	Power Supply Status
Switch Short	ON
Switch Open	OFF



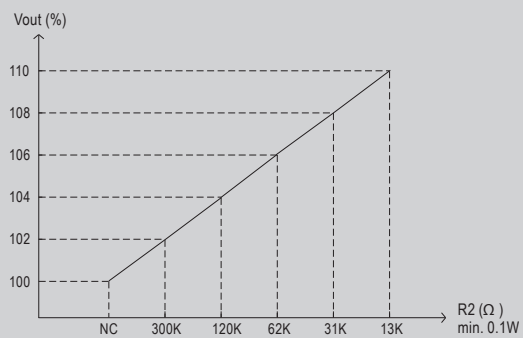
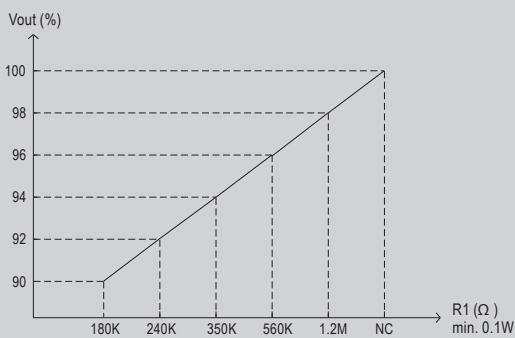
3. Output Voltage Programming (or, PV / remote voltage programming / remote adjust / margin programming / dynamic voltage trim)

In addition to the adjustment via the built-in potentiometer, the output voltage can be trimmed to 90–110% of the nominal voltage by applying EXTERNAL RESISTANCE.

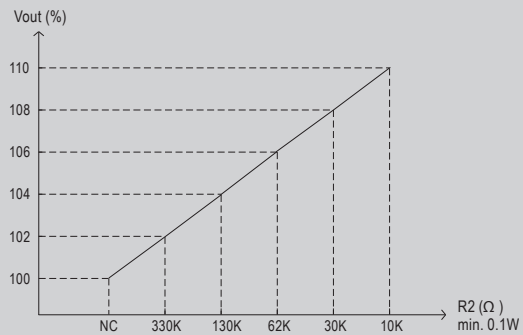
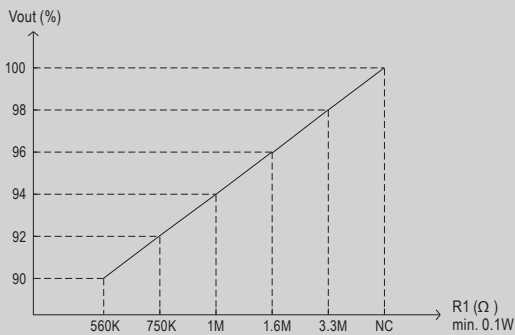


+S & +V, -S & -V also need to be connected on CN501

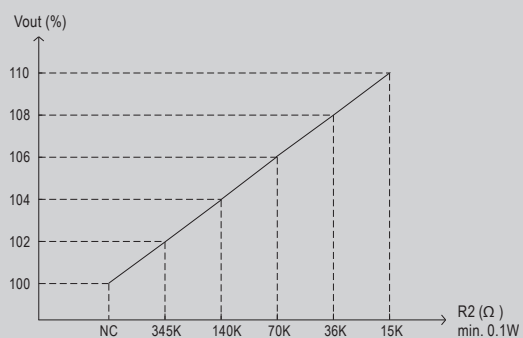
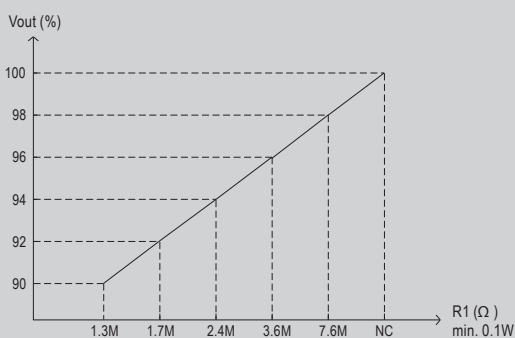
3.1 RCP-1000-12



3.2 RCP-1000-24



3.3 RCP-1000-48



4. I²C Bus Interface Option

For the details of I²C option, please refer to the Installation Manual.