



1000 ~ 3000W 1U Distributed Power System

RCP-1U Rack System

Rack Dimension

| | | | | |
|-------|---|-------|---|---------------|
| L | * | W | * | H |
| 350.8 | * | 483.6 | * | 44 (1U) mm |
| 13.8 | * | 19 | * | 1.73(1U) inch |

User's Manual



UL62368-1



BS EN/EN62368-1 TPTC004



EAC



CB



CE



UKCA

IEC62368-1



Industrial



Automate



Telecom



Network



EV

■ Features

- Universal AC input / Full range
- 1U profile 19" rack shelf, fitting three 1000W modules up to 3000W with active current sharing
- Output voltage programmable
- Support hot swap (hot plug)
- 5 years warranty

■ Applications

- Industrial automation
- Distributed power architecture system
- Wireless/telecommunication solution
- Redundant power system
- Electric vehicle charger system
- Constant current source system

■ Description

RCP-1U rack system is a power distribution solution utilizing the rack configuration with 1U low profile. Starting with a single unit of 1000W, RCP-1000 is the front end rectifier (or, power supply). With the active current sharing function, up to 3000W is able to be provided by 1 stack of the 19" rack mountable shelf RCP-1U and 8000W by 3 stacks. The design flexibility for system applications is ideally fulfilled by various built-in features, such as output programming, remote ON-OFF, auxiliary power, etc.

■ Model Encoding / Order Information

Rack Shelf:

RCP-1U **I**

I: AC Inlet (IEC320-C14)
T: Terminal block
Profile of the system
Series name

Whole System:

RCP-3K1U **I-12-C**

C: With I²C Interface
-: Without I²C Interface
Output voltage
I: AC Inlet (IEC320-C14)
T: Terminal block
1U: Profile of the system
3K: Maximum wattage with fully-populated shelf
Series name



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RCP-1U Rack System

SPECIFICATION - Power Supply System

| MODEL | RCP-3K1U□-12 | RCP-3K1U□-24 | RCP-3K1U□-48 |
|-----------------------|--|--|---|
| OUTPUT | RECTIFIER | RCP-1000-12 | RCP-1000-24 |
| | RACK SHELF | RCP-1UI or RCP-1UT | |
| | OUTPUT VOLTAGE | 12V | 24V |
| | MAX. OUTPUT CURRENT | 180A | 120A |
| | MAX. OUTPUT POWER Note.5 | 2160W | 2880W |
| INPUT | VOLTAGE RANGE Note.4 | 90 ~ 264VAC 127 ~ 370VDC | |
| | FREQUENCY RANGE | 47 ~ 63Hz | |
| | AC CURRENT (Typ.) PER MODULE | 8.5A/115VAC 4.5A/230VAC | 10.5A/115VAC 5.5A/230VAC |
| | LEAKAGE CURRENT | <3.5mA / 230VAC | |
| FUNCTION | AUXILIARY POWER | 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 the Function Manual. | |
| | DC OK SIGNAL | The isolated TTL signal out, Please refer to the Installation Manual | |
| | AC OK SIGNAL | The isolated TTL signal out, Please refer to the Installation Manual | |
| ENVIRONMENT | 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 non-condensing | |
| | TEMP. COEFFICIENT | ±0.02%/°C (0 ~ 50°C) | |
| SAFETY & EMC (Note 6) | VIBRATION | 10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes | |
| | SAFETY STANDARDS | UL62368-1, CSA C22.2 No. 62368-1, TUV BS EN/EN62368-1, EAC TP TC 004 approved | |
| | WITHSTAND VOLTAGE | I/P-O/P:3KVAC I/P-FG:2KVAC O/P-FG:0.7KVDC | |
| | ISOLATION RESISTANCE | I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25°C / 70% RH | |
| | EMC EMISSION | Parameter | Standard |
| | | Conducted | BS EN/EN55032 (CISPR32) |
| | | Radiated | BS EN/EN55032 (CISPR32) |
| | | Harmonic Current | BS EN/EN61000-3-2 |
| | | Voltage Flicker | BS EN/EN61000-3-3 |
| | EMC IMMUNITY | BS EN/EN55024, BS EN/EN61000-6-2 | |
| | | Parameter | Standard |
| | | ESD | BS EN/EN61000-4-2 |
| | | Radiated | BS EN/EN61000-4-3 |
| | | EFT / Burst | BS EN/EN61000-4-4 |
| | | Surge | BS EN/EN61000-4-5 |
| | | Conducted | BS EN/EN61000-4-6 |
| | | Magnetic Field | BS EN/EN61000-4-8 |
| OTHERS | Voltage Dips and Interruptions | BS EN/EN61000-4-11 | >95% dip 0.5 periods, 30% dip 25 periods, >95% interruptions 250 periods |
| | DIMENSION | Rack 350.8*483.6*44(L*W*H) | |
| NOTE | PACKING | 13.2Kg; 1pcs/13.2Kg/2.67CUFT | |
| | 1. | All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature. | |
| | 2. | Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. Under parallel operation of more than one rack connecting together, ripple of the output voltage may be higher than the SPEC at light load condition. It will go back to normal ripple level once the output load is more than 10%. | |
| | 3. | Tolerance : includes set up tolerance, line regulation and load regulation. | |
| | 4. | Derating may be needed under low input voltages. Please check the derating curve for more details. | |
| | 5. | Output of all the RCP-1000 modules are connected in parallel in the rack. | |
| | 6. | The power supply is considered a component which will be installed into a final equipment. All the EMC tests are been executed by mounting the unit on a 720mm*360mm metal plate with 1mm of 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." (as available on http://www.meanwell.com) | |
| | 7. | The ambient temperature derating of 3.5°C/1000m with fanless models and of 5°C/1000m with fan models for operating altitude higher than 2000m(6500ft). | |
| | ※ Product Liability Disclaimer : For detailed information, please refer to https://www.meanwell.com/serviceDisclaimer.aspx | | |



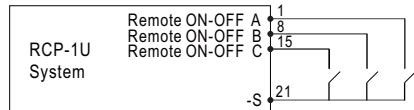
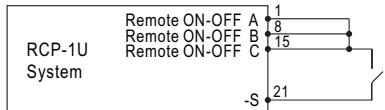
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RCP-1U Rack System

Function Manual

1. Remote ON/OFF Control

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

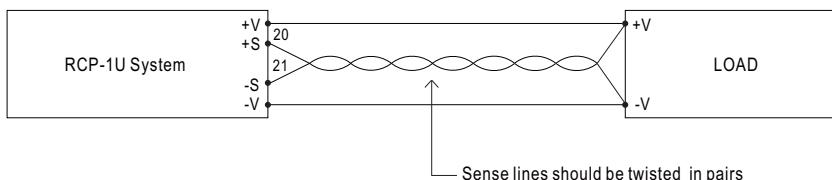


| Between Remote ON-OFF and -S | Output |
|------------------------------|--------|
| Switch Open | OFF |
| Switch Short | ON |

2. Voltage Drop Compensation

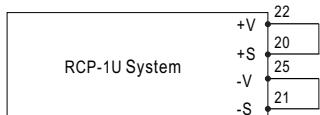
2.1 Remote Sense

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



2.2 Local Sense

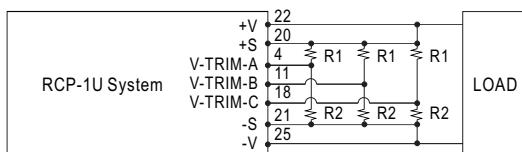
Notice : The +S,-S, on CN500 have to be connected to the +V,-V terminals locally in order to get the correct output voltage if the remote sensing is not used.



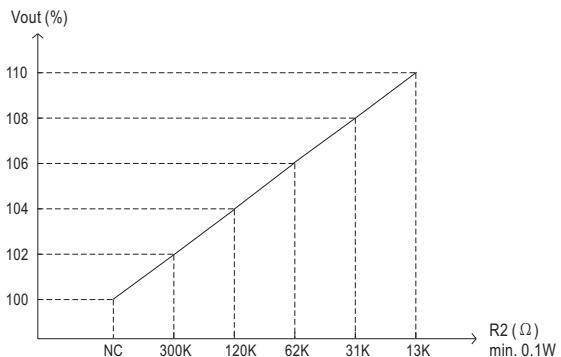
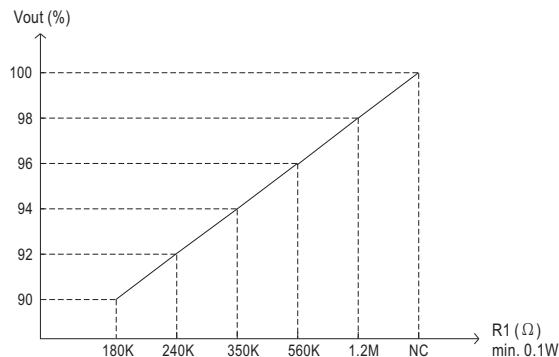
3. Output Voltage Programming (or, PV / remote voltage programming / remote adjust / margin programming / dynamic voltage trim)

(1) Output voltage can be trimmed between 90~110% of its rated value by the following method.

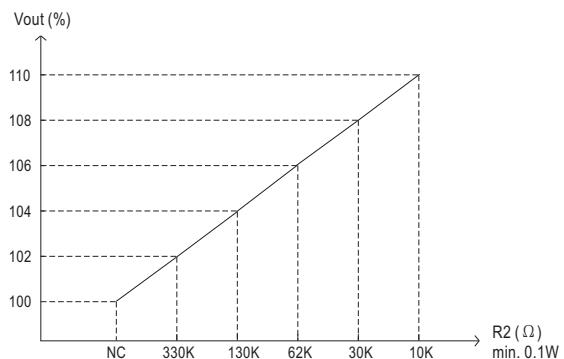
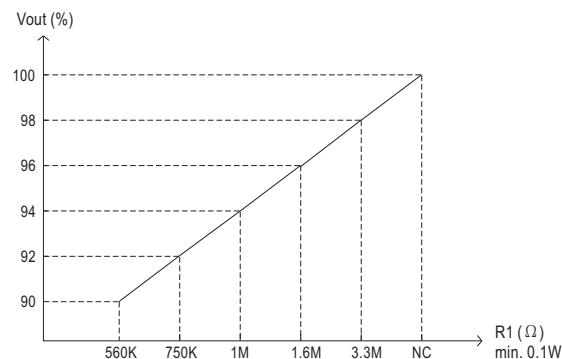
(2) +S & +V, -S & -V also need to be connected on CN500.



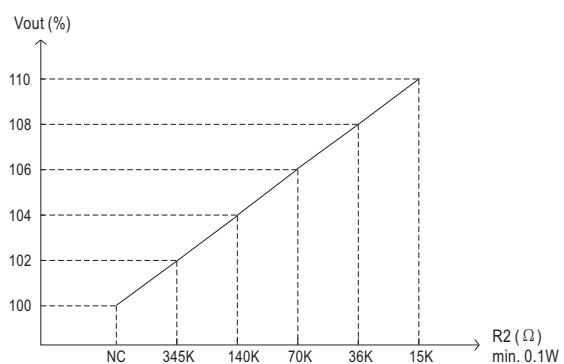
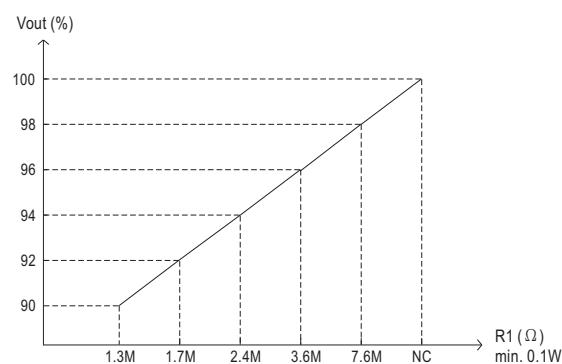
3.1 RCP-1000-12



3.2 RCP-1000-24



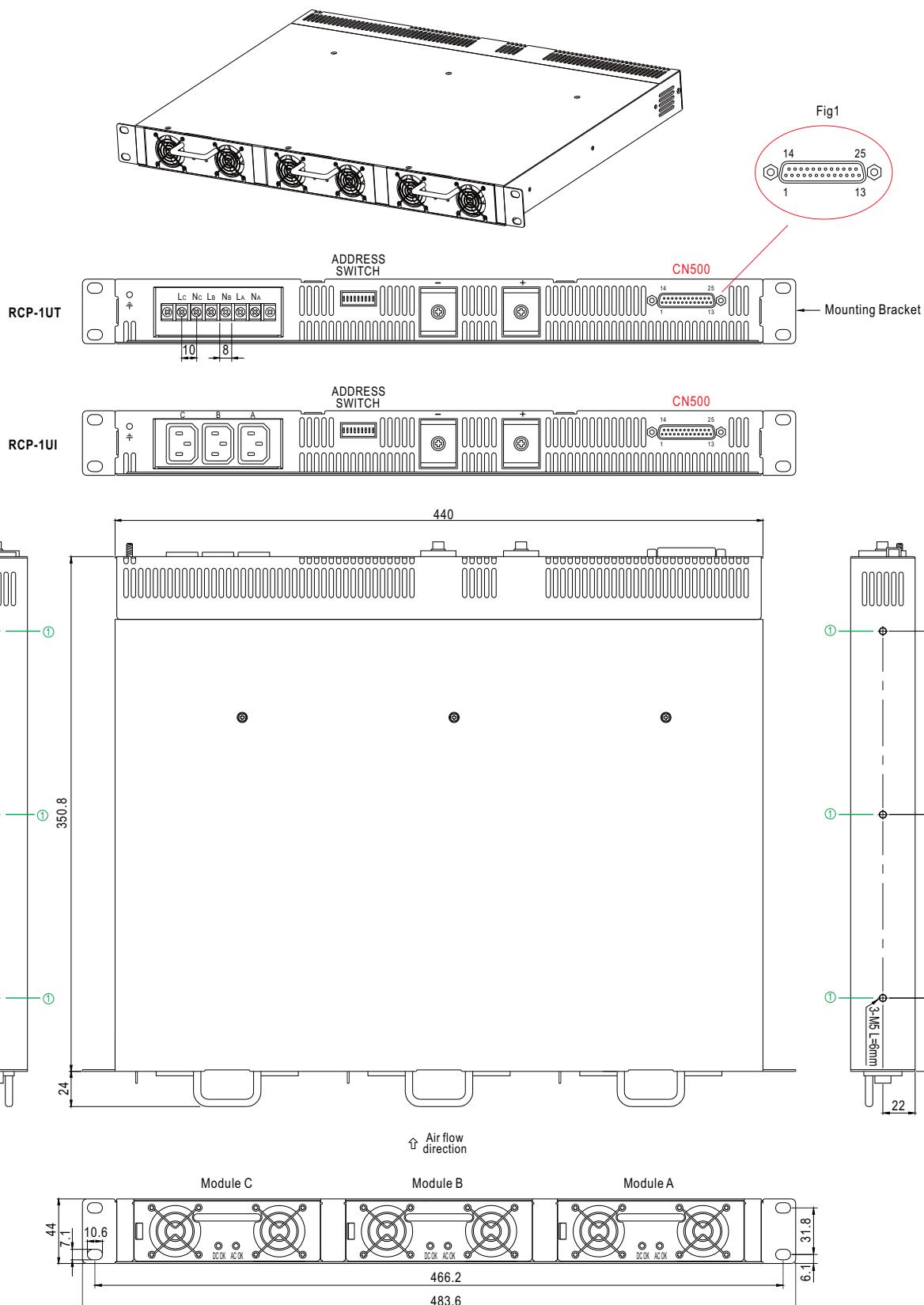
3.3 RCP-1000-48


 4. I²C Bus Interface

※ For the details of I²C bus used on this product, please refer to the Installation Manual.

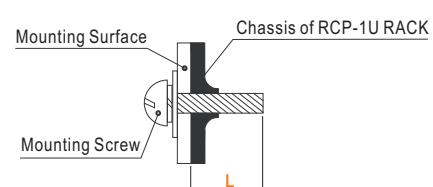
■ Mechanical Specification (Rack System)

Case No. 959A Unit:mm

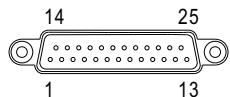


※ Mounting Instruction

| Hole No. | Recommended Screw Size | MAX. Penetration Depth L | Recommended mounting torque |
|----------|------------------------|--------------------------|-----------------------------|
| ① | M5 | 6mm | 10Kgf-cm |



※ IN/OUT Connector Pin No. Assignment([CN500](#)) : D-Type Right Angle 25 positions(female type)



| Pin No. | Function | Description |
|---------|--------------|---|
| 1,8,15 | RemoteON-OFF | Each unit can separately turn the output on and off by electrical or dry contact between Remote ON-OFF A,B,C(pin 1,8,15) and -S(pin 21). Short: ON, Open:OFF. |
| 2,9,16 | AC-OK | Low : When input voltage is $\geq 82\text{Vrms} +/- 4\text{V}$. High : When input voltage is $\leq 82\text{Vrms} +/- 4\text{V}$. |
| 3,10,17 | DC-OK | High : When $\text{Vout} \leq 80\% +/- 5\%$. Low : When $\text{Vout} \geq 80\% +/- 5\%$ |
| 4,11,18 | V-TRIM | Connection for output voltage programming. |
| 5,12,19 | T-ALARM | High : When the internal temperature is within safe limit. Low : 10°C below the thermal shut down limit. |
| 6 | +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 "O-ring diodes" and is not controlled by the remote ON/OFF control. |
| 7 | GND-AUX | Auxiliary voltage output GND. The signal return is isolated from the output terminals (+V & -V). |
| 14 | 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. |
| 20 | +S | Positive sensing for Remote Sense. |
| 21 | -S | Negative sensing for Remote Sense. |
| 22 | +V | Positive output voltage. |
| 23 | SCL | Serial clock used in the I ² C interface option. Refer to the Instruction Manual. |
| 24 | SDA | Serial data used in the I ² C interface option. Refer to the Instruction Manual. |
| 25 | -V | Negative output voltage. |