



## Rack Dimension

| L    | W    | H        |
|------|------|----------|
| 365  | 440  | 44 (1U)  |
| 14.4 | 17.3 | 1.73(1U) |



## Features

- Universal AC input / Full range
- 1U profile 19" rack shelf, fitting five 1600W modules up to 8000W with active current sharing
- Output voltage and current programmable
- Support hot swap (hot plug)
- Built-in PMBus protocol (Optional CANBus protocol)
- 5 years warranty

## Applications

- Distributed power architecture system
- Wireless/telecommunication solution
- Electric vehicle or marine charger station
- DC UPS or emergency backup
- Wastewater treatment system
- Electrolysis system

## Description

RHP-1U rack power system and RHB-1U rack charger system are the complete solution for the power distribution utilizing the rack configuration with the 1U low profile. Starting with a single unit of 1600W, RCP-1600 is the front end rectifier (or, power supply) and RCB-1600 is the charger module. With the active current sharing function, up to 8000W is able to be provided by 1 stack of the 19" rack mountable shelf RHP-1U, with either rectifier or charger, and 24000W by 3 stacks with rectifier.

## Model Encoding

### Rack Shelf:

**RHP-1U I -A** ☐

- Communication protocol option
- Rack Shelf for 1600W unit
- I: AC Inlet (IEC320-C14)
- T: Terminal block
- Profile of the system
- Series name

### Whole System:

**RHP-8K1U I -12** ☐

- Communication protocol option
- Output voltage
- I: AC Inlet (IEC320-C14)
- T: Terminal block
- 8K: Maximum wattage with fully-populated shelf
- 1U: Profile of the system
- Series name (RHP : Power supply system; RHB : Charger system)

| Type  | Communication Protocol | Note       |
|-------|------------------------|------------|
| Blank | PMBus protocol         | In Stock   |
| CAN   | CANBus protocol        | By request |



# 1600~8000W 1U Distributed Power/Charger System RHP-1U Rack System

## SPECIFICATION - Power Supply System

| MODEL                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | RHP-8K1U□-12                                                                                                                            |                                       | RHP-8K1U□-24              |  | RHP-8K1U□-48                                                             |  |
|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|---------------------------|--|--------------------------------------------------------------------------|--|
| OUTPUT                                  | RECTIFIER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | RCP-1600-12                                                                                                                             |                                       | RCP-1600-24               |  | RCP-1600-48                                                              |  |
|                                         | RACK SHELF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | RHP-1UI-A or RHP-1UT-A                                                                                                                  |                                       |                           |  |                                                                          |  |
|                                         | OUTPUT VOLTAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 12V                                                                                                                                     |                                       | 24V                       |  | 48V                                                                      |  |
|                                         | MAX. OUTPUT CURRENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 625A                                                                                                                                    |                                       | 335A                      |  | 167.5A                                                                   |  |
|                                         | MAX. OUTPUT POWER <small>Note.5</small>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 7500W                                                                                                                                   |                                       | 8040W                     |  | 8040W                                                                    |  |
| INPUT                                   | VOLTAGE RANGE <small>Note.6</small>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 90 ~ 264VAC      127 ~ 370VDC                                                                                                           |                                       |                           |  |                                                                          |  |
|                                         | FREQUENCY RANGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 47 ~ 63Hz                                                                                                                               |                                       |                           |  |                                                                          |  |
|                                         | AC CURRENT (Typ.) per RECTIFIER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 14A/115VAC    8A/230VAC                                                                                                                 |                                       | 15A/115VAC    8.5A/230VAC |  | 15A/115VAC    8.5A/230VAC                                                |  |
|                                         | LEAKAGE CURRENT per RECTIFIER <small>Note.8</small>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <1.5mA / 230VAC                                                                                                                         |                                       |                           |  |                                                                          |  |
| FUNCTION                                | OUTPUT VOLTAGE PROGRAMMABLE(PV)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Adjustment of output voltage is allowable to 40 ~ 125% of nominal output voltage(60~125% for 12V). Please refer to the Function Manual. |                                       |                           |  |                                                                          |  |
|                                         | CONSTANT CURRENT LEVEL PROGRAMMABLE(PC)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Adjustment of constant current level is allowable to 20 ~ 100% of rated current. Please refer to the Function Manual.                   |                                       |                           |  |                                                                          |  |
|                                         | 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                                                                                   |                                       |                           |  |                                                                          |  |
|                                         | AUXILIARY POWER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 5V @ 0.3A, 12V @ 0.8A                                                                                                                   |                                       |                           |  |                                                                          |  |
|                                         | ALARM SIGNAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Isolated TTL signal output for T-Alarm, AC-OK and DC-OK                                                                                 |                                       |                           |  |                                                                          |  |
| ENVIRONMENT                             | WORKING TEMP.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | -30 ~ +70℃ (Refer to "Derating Curve")                                                                                                  |                                       |                           |  |                                                                          |  |
|                                         | WORKING HUMIDITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 20 ~ 90% RH non-condensing                                                                                                              |                                       |                           |  |                                                                          |  |
|                                         | STORAGE TEMP., HUMIDITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | -40 ~ +85℃, 10 ~ 95% RH non-condensing                                                                                                  |                                       |                           |  |                                                                          |  |
|                                         | TEMP. COEFFICIENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | ±0.03%/℃ (0 ~ 50℃)                                                                                                                      |                                       |                           |  |                                                                          |  |
|                                         | VIBRATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes                                                                            |                                       |                           |  |                                                                          |  |
| SAFETY & EMC<br><small>(Note 4)</small> | SAFETY STANDARDS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | UL60950-1, TUV EN60950-1, EAC TP TC 004 approved                                                                                        |                                       |                           |  |                                                                          |  |
|                                         | WITHSTAND VOLTAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | I/P-O/P:3KVAC    I/P-FG:2KVAC    O/P-FG:1.5KVAC (0.5KVAC for 12V)                                                                       |                                       |                           |  |                                                                          |  |
|                                         | ISOLATION RESISTANCE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃ / 70% RH                                                                               |                                       |                           |  |                                                                          |  |
|                                         | EMC EMISSION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Parameter                                                                                                                               | Standard                              |                           |  | Test Level / Note                                                        |  |
|                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Conducted                                                                                                                               | EN55032 (CISPR32) / EN55011 (CISPR11) |                           |  | Class B                                                                  |  |
|                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Radiated                                                                                                                                | EN55032 (CISPR32) / EN55011 (CISPR11) |                           |  | Class A                                                                  |  |
|                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Harmonic Current                                                                                                                        | EN61000-3-2                           |                           |  | Class A                                                                  |  |
|                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Voltage Flicker                                                                                                                         | EN61000-3-3                           |                           |  | -----                                                                    |  |
|                                         | EMC IMMUNITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | EN55024 , EN61204-3, EN61000-6-2                                                                                                        |                                       |                           |  |                                                                          |  |
|                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Parameter                                                                                                                               | Standard                              |                           |  | Test Level / Note                                                        |  |
|                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | ESD                                                                                                                                     | EN61000-4-2                           |                           |  | Level 3, 8KV air ; Level 2, 4KV contact                                  |  |
|                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Radiated                                                                                                                                | EN61000-4-3                           |                           |  | Level 3                                                                  |  |
|                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | EFT / Burst                                                                                                                             | EN61000-4-4                           |                           |  | Level 3                                                                  |  |
|                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Surge                                                                                                                                   | EN61000-4-5                           |                           |  | Level 4, 2KV/Line-Line 4KV/Line-Earth                                    |  |
|                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Conducted                                                                                                                               | EN61000-4-6                           |                           |  | Level 3                                                                  |  |
|                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Magnetic Field                                                                                                                          | EN61000-4-8                           |                           |  | Level 4                                                                  |  |
|                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Voltage Dips and Interruptions                                                                                                          | EN61000-4-11                          |                           |  | >95% dip 0.5 periods, 30% dip 25 periods, >95% interruptions 250 periods |  |
| OTHERS                                  | DIMENSION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Rack 365*482.6*44(L*W*H, with mounting bracket) ; 365*440*44(L*W*H, without mounting bracket)                                           |                                       |                           |  |                                                                          |  |
|                                         | PACKING                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 5.5Kg; 3pcs/17.5Kg/2.11CUFT                                                                                                             |                                       |                           |  |                                                                          |  |
| NOTE                                    | 1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature.<br>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 5%.<br>3. Tolerance : includes set up tolerance, line regulation and load regulation.<br>4. 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 1000mm*1300mm 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 <a href="http://www.meanwell.com">http://www.meanwell.com</a> )<br>5. Output of all the RCP-1600 modules are connected in parallel in the rack.<br>6. Derating may be needed under low input voltages. Please check the static characteristics for more details.<br>7. Because of component tolerance, there is a possibility that some of units connected in parallel will reach an overcurrent limit then overloading the other units when operating at full load condition. If overload conditions happen in parallel usage, it is suggested that derate the total output current by 10%.<br>8. The equivalent leakage current of the system is determined by the quantity of populated rectifiers.<br>9. The ambient temperature derating of 3.5℃/1000m with fanless models and of 5℃/1000m with fan models for operating altitude higher than 2000m(6500ft). |                                                                                                                                         |                                       |                           |  |                                                                          |  |



# 1600~8000W 1U Distributed Power/Charger System **RHP-1U Rack System**

## SPECIFICATION - Charger System

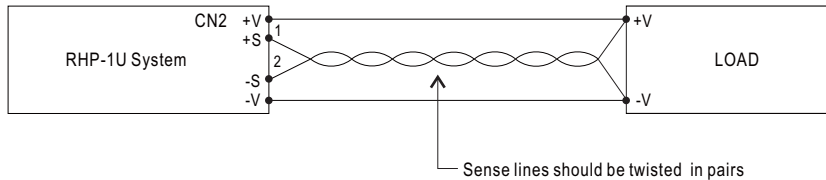
| MODEL                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | RHB-8K1U□-12                                                                                                           | RHB-8K1U□-24           | RHB-8K1U□-48           |
|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|------------------------|------------------------|
| OUTPUT                   | CHARGER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | RCB-1600-12                                                                                                            | RCB-1600-24            | RCB-1600-48            |
|                          | RACK SHELF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | RHP-1UI-A or RHP-1UT-A                                                                                                 |                        |                        |
|                          | BOOST CHARGE VOLTAGE(Vboost)(default)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 14.4V                                                                                                                  | 28.8V                  | 57.6V                  |
|                          | FLOAT CHARGE VOLTAGE(Vfloat)(default)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 13.8V                                                                                                                  | 27.6V                  | 55.2V                  |
|                          | CURRENT RANGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0 ~ 500A                                                                                                               | 0 ~ 275A               | 0 ~137.5A              |
| INPUT                    | VOLTAGE RANGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Note.2 90 ~ 264VAC 127 ~ 370VDC                                                                                        |                        |                        |
|                          | FREQUENCY RANGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 47 ~ 63Hz                                                                                                              |                        |                        |
|                          | AC CURRENT (Typ.) per CHARGER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 14A/115VAC 8A/230VAC                                                                                                   | 15A/115VAC 8.5A/230VAC | 15A/115VAC 8.5A/230VAC |
|                          | LEAKAGE CURRENT per CHARGER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Note.5 <1.5mA / 230VAC                                                                                                 |                        |                        |
| FUNCTION                 | OUTPUT VOLTAGE PROGRAMMABLE(PV)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Adjustment of output voltage is allowable to 75 ~ 125% of nominal output voltage. Please refer to the Function Manual. |                        |                        |
|                          | OUTPUT CURRENT PROGRAMMABLE(PC)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Adjustment of output current is allowable to 20 ~ 100% of rated current. Please refer to the Function Manual.          |                        |                        |
|                          | REMOTE ON-OFF CONTROL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | By electrical signal or dry contact ON:short OFF:open                                                                  |                        |                        |
|                          | AUXILIARY POWER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 5V @ 0.3A, 12V @ 0.8A                                                                                                  |                        |                        |
|                          | ALARM SIGNAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | The isolated TTL signal out, Please refer to Installation Manual                                                       |                        |                        |
|                          | TEMPERATURE COMPENSATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | -3mV / °C / cell / (12V = 6 cells ; 24V = 12 cells ; 48V = 24 cells)                                                   |                        |                        |
| ENVIRONMENT              | WORKING TEMP.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | -30 ~ +70℃ (Refer to "Derating Curve")                                                                                 |                        |                        |
|                          | WORKING HUMIDITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 20 ~ 90% RH non-condensing                                                                                             |                        |                        |
|                          | STORAGE TEMP., HUMIDITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | -40 ~ +85℃ , 10 ~ 95% RH non-condensing                                                                                |                        |                        |
|                          | TEMP. COEFFICIENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | ±0.03%/℃ (0 ~ 50℃)                                                                                                     |                        |                        |
|                          | VIBRATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes                                                           |                        |                        |
| SAFETY & EMC<br>(Note 4) | SAFETY STANDARDS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | UL60950-1, TUV EN60950-1, EAC TP TC 004 approved                                                                       |                        |                        |
|                          | WITHSTAND VOLTAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | I/P-O/P:3KVAC I/P-FG:2KVAC O/P-FG:1.5KVAC (0.5KVAC for 12V)                                                            |                        |                        |
|                          | ISOLATION RESISTANCE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃/ 70% RH                                                               |                        |                        |
|                          | EMC EMISSION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Compliance to EN55032 (CISPR32) Conduction Class B, Radiation Class A ; EN61000-3-2,-3, EAC TP TC 020                  |                        |                        |
|                          | EMC IMMUNITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Compliance to EN61000-4-2,3,4,5,6,8,11, EN61000-6-2 (EN50082-2), Heavy industry level, criteria A, EAC TP TC 020       |                        |                        |
| OTHERS                   | DIMENSION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Rack 365*482.6*44(L*W*H, with mounting bracket) ; 365*440*44(L*W*H, without mounting bracket)                          |                        |                        |
|                          | PACKING                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 5.5Kg; 3pcs/17.5Kg/2.11CUFT                                                                                            |                        |                        |
| NOTE                     | 1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature.<br>2. Derating may be needed under low input voltages. Please check the static characteristics for more details.<br>3. 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 1000mm*1300mm 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)<br>4. Output of all the RCB-1600 modules are connected in parallel in the rack.<br>5. The equivalent leakage current of the system is determined by the quantity of populated chargers.<br>6. The ambient temperature derating of 3.5℃/1000m with fanless models and of 5℃/1000m with fan models for operating altitude higher than 2000m(6500ft). |                                                                                                                        |                        |                        |

## Function Manual

### 1. Voltage Drop Compensation (Only for power supply system)

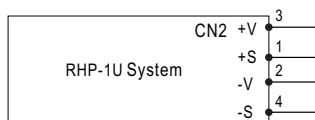
#### 1.1 Remote Sense

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



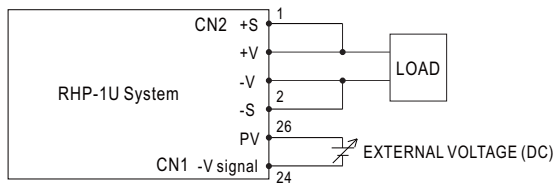
#### 1.2 Local Sense

**Notice :** The +S,-S have to be connected to the +V(signal),-V(signal), respectively, in order to get the correct output voltage if the remote sensing is not used.

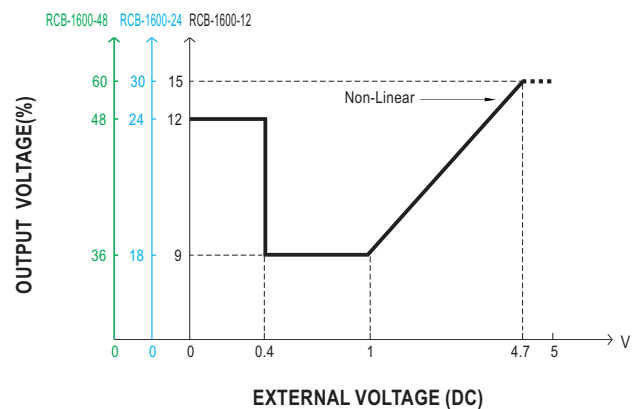
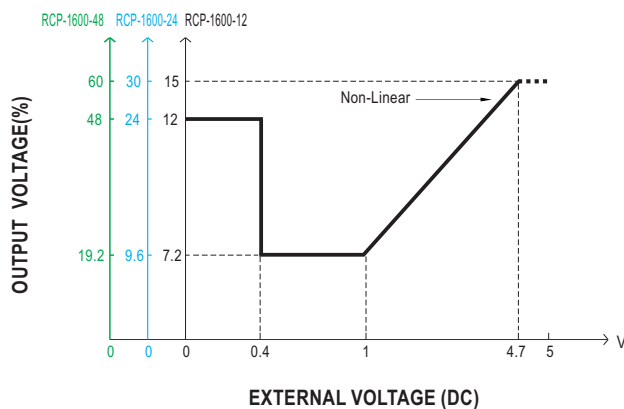
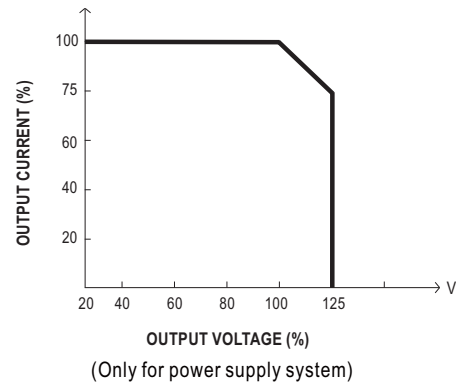


### 2. Output Voltage Programming (or, PV / remote voltage programming / remote adjust / margin programming / dynamic voltage trim)

※ In addition to the adjustment via the built-in potentiometer, the output voltage can be trimmed by applying EXTERNAL VOLTAGE.

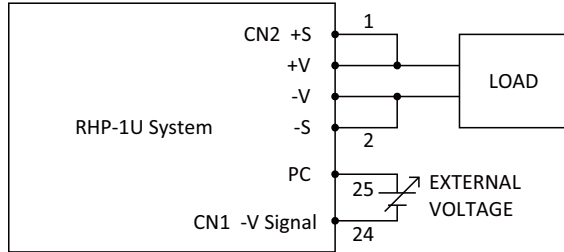


+S & +V, -S & -V also need to be connected on CN1. (Only for power supply system)

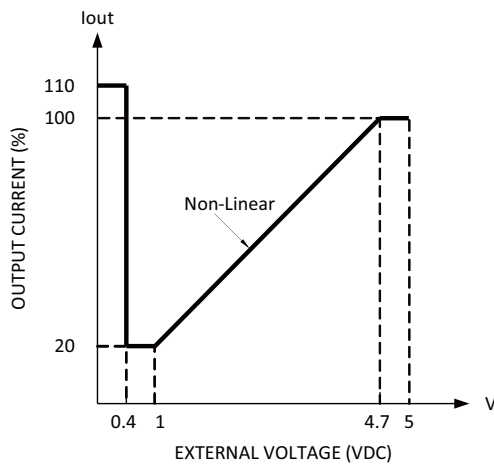


### 3. Output Current Programming (or, PC / remote current programming / dynamic current trim)

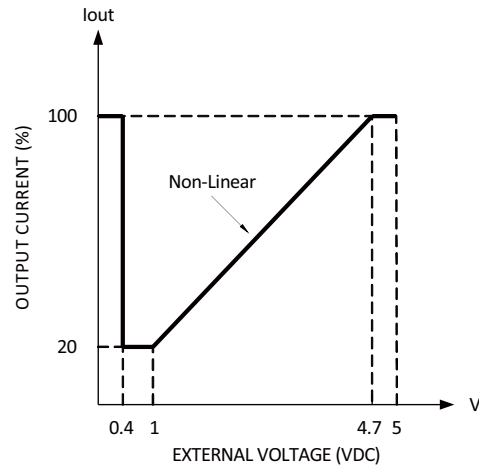
※ The output current can be trimmed to 20~100% of the rated current by applying EXTERNAL VOLTAGE.



+S & +V, -S & -V also need to be connected on CN1. (Only for power supply system)



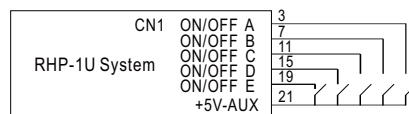
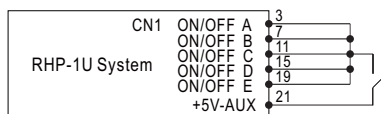
⊙ For power supply system



⊙ For charger system

### 4. Remote ON-OFF Control

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



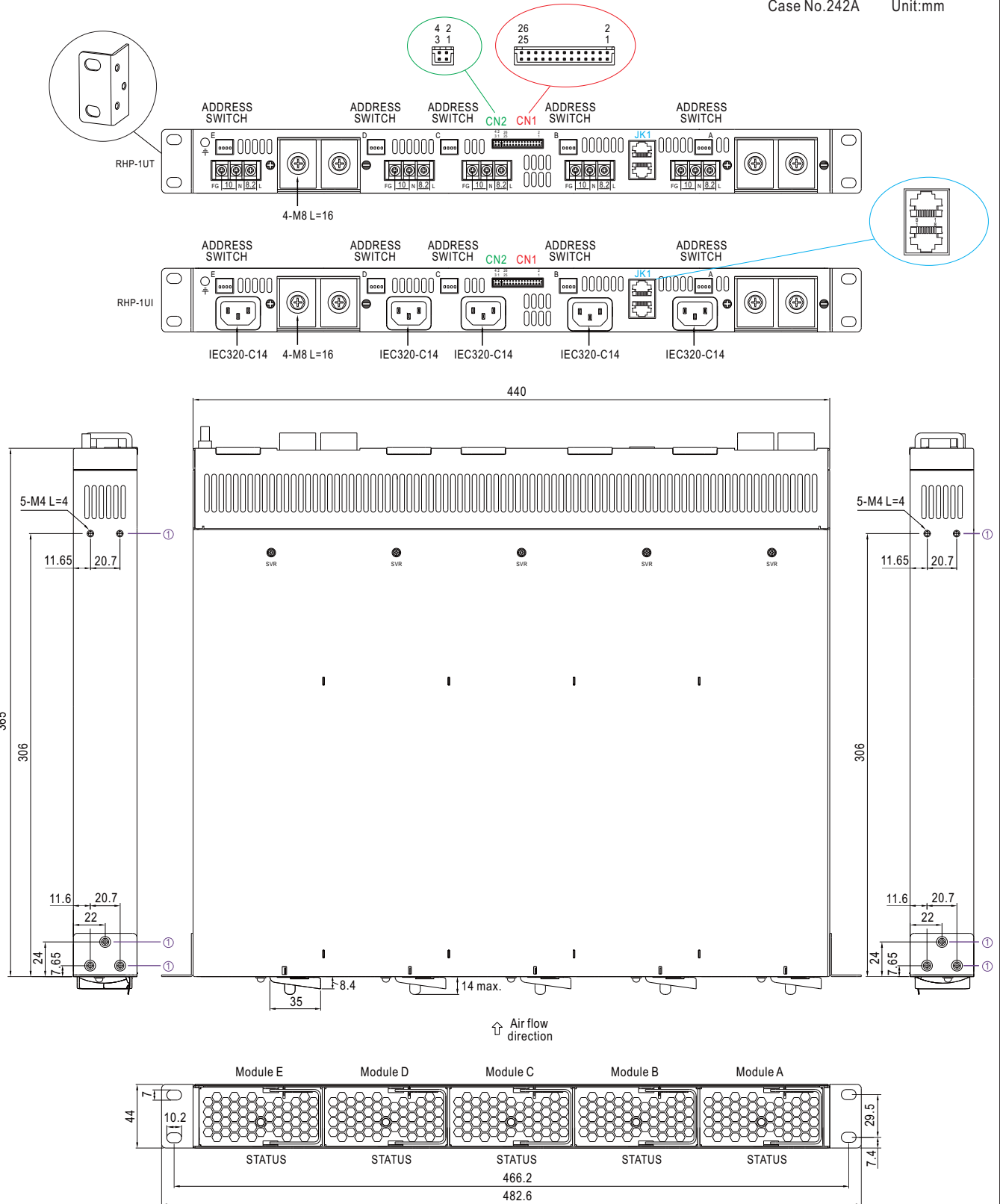
| Between ON/OFF and +5V-AUX | Output |
|----------------------------|--------|
| SW Open                    | OFF    |
| SW Short                   | ON     |

### 5. PMBus Communication Interface

RCP-1600/RCB-1600 supports PMBus Rev. 1.1 with maximum 100KHz bus speed, allowing information reading, status monitoring, output trimming, etc. For details, please refer to the Function Manual.

## Mechanical Specification

Case No.242A Unit:mm



## ※ LED Status Indicators & Corresponding Signal at Function Pins

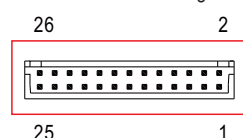
### ◎ For power supply system

| LED                                                                                              | Description                                                                                                                                                                                                                                     |
|--------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  Green          | The power supply functions normally.                                                                                                                                                                                                            |
|  Red            | The LED will present a constant red light when the abnormal status (OTP, OLP, fan fail and charging timeout) arises.                                                                                                                            |
|  Red (Flashing) | The LED will flash with the red light when the internal temperature reaches 60°C; under this condition, the unit still operates normally without entering OTP. (In the meantime, an alarm signal will be sent out through the PMBus interface.) |

### ◎ For charger system

| LED                                                                                              | Description                                                                                                                                                                                                                                     |
|--------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  Green          | Float (stage 3)                                                                                                                                                                                                                                 |
|  Orange         | Charging (stage 1 or stage 2)                                                                                                                                                                                                                   |
|  Red            | The LED will present a constant red light when the abnormal status (OTP, OLP, fan fail and charging timeout) arises.                                                                                                                            |
|  Red (Flashing) | The LED will flash with the red light when the internal temperature reaches 60°C; under this condition, the unit still operates normally without entering OTP. (In the meantime, an alarm signal will be sent out through the PMBus interface.) |

## ※ Connector Pin No. Assignment(CN1) : HRS DF11-26DP-2DS



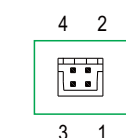
|                |                             |
|----------------|-----------------------------|
| Mating Housing | HRS DF11-26DS or equivalent |
| Terminal       | HRS DF11-**SC or equivalent |

| Pin No.      | Function      | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|--------------|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1,5,9,13,17  | AC-OK         | High (4.5 ~ 5.5V) : When the input voltage is $\geq 87V_{rms}$ .<br>Low (-0.1 ~ 0.5V) : When the input voltage is $\leq 75V_{rms}$ .<br>The maximum sourcing current is 10mA and only for output. (Note.2)                                                                                                                                                                                                                                                                                               |
| 2,6,10,14,18 | DC-OK         | For power supply system<br>High (4.5 ~ 5.5V) : When the $V_{out} \leq 80\% \pm 5\%$ .<br>Low (-0.1 ~ 0.5V) : When $V_{out} \geq 80\% \pm 5\%$ .<br>The maximum sourcing current is 10mA and only for output. (Note.2)<br><br>For charger system<br>High (4.5 ~ 5.5V) : When the $V_{out} \leq 8V/16V/32V \pm 1V$ .<br>Low (-0.1 ~ 0.5V) : When $V_{out} \geq 8V/16V/32V \pm 1V$ . The maximum sourcing current is 10mA and only for output. (Note.2)<br>DC OK is associated with battery low protection. |
| 3,7,11,15,19 | Remote ON-OFF | The unit can turn the output ON/OFF by electrical signal or dry contact between Remote ON-OFF and +5V-AUX. (Note.2)<br>Short (4.5 ~ 5.5V) : Power ON ; Open (0 ~ 0.5V) : Power OFF ; The maximum input voltage is 5.5V.                                                                                                                                                                                                                                                                                  |
| 4,8,12,16,20 | T-ALARM       | High (4.5 ~ 5.5V) : When the internal temperature exceeds the limit of temperature alarm, or when fan fails.<br>Low (-0.1 ~ 0.5V) : When the internal temperature is normal, and when fan normally works.<br>The maximum sourcing current is 10mA and only for output(Note.2)                                                                                                                                                                                                                            |
| 21           | +5V-AUX       | Auxiliary voltage output, 4.5~5.5V, referenced to GND-AUX (pin 22).<br>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.                                                                                                                                                                                                                                                                                                 |
| 22           | GND-AUX       | Auxiliary voltage output GND. The signal return is isolated from the output terminals (+V & -V).                                                                                                                                                                                                                                                                                                                                                                                                         |
| 23           | +12V-AUX      | Auxiliary voltage output, 10.8~13.2V, referenced to GND-AUX (pin 22).<br>The maximum load current is 0.8A. This output has the built-in "Oring diodes" and is not controlled by the remote ON/OFF control.                                                                                                                                                                                                                                                                                               |
| 24           | -V(Signal)    | Negative output voltage. For local sense use only; It can't be connected directly to the load.                                                                                                                                                                                                                                                                                                                                                                                                           |
| 25           | PC            | Connection for output current programming. The current can be trimmed within its defined range. (Note.1)                                                                                                                                                                                                                                                                                                                                                                                                 |
| 26           | PV            | Connection for output voltage programming. The voltage can be trimmed within its defined range. (Note.1)                                                                                                                                                                                                                                                                                                                                                                                                 |

Note.1: Non-isolated signal, referenced to [-V(signal)].

Note.2: Isolated signal, referenced to GND-AUX.

## ※ Connector Pin No. Assignment(CN2) : HRS DF11-4DP-2DS



|                |                             |
|----------------|-----------------------------|
| Mating Housing | HRS DF11-4DS or equivalent  |
| Terminal       | HRS DF11-**SC or equivalent |

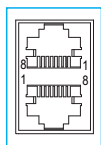
### ◎ For power supply system

|   |            |                                                                                                                                                                                                                       |
|---|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | +S         | Positive sensing. The +S signal should be connected to the positive terminal of the load. The +S and -S leads should be twisted in pair to minimize noise pick-up effect. The maximum line drop compensation is 0.5V. |
| 2 | -S         | Negative sensing. The -S signal should be connected to the negative terminal of the load. The -S and +S leads should be twisted in pair to minimize noise pick-up effect. The maximum line drop compensation is 0.5V. |
| 3 | +V(Signal) | Positive output voltage. For local sense use only, can't be connected directly to the load.                                                                                                                           |
| 4 | -V(Signal) | Negative output voltage. For local sense use only, can't be connected directly to the load.                                                                                                                           |

### ◎ For charger system

|     |      |                                                                          |
|-----|------|--------------------------------------------------------------------------|
| 1   | RTH+ | Temperature sense associated with the temperature compensation function. |
| 2   | RTH- |                                                                          |
| 3,4 | NC   | Not use.                                                                 |

※ Connector Pin No. Assignment(JK1) : RJ45 8 positions



| Pin No. | Function   | Description                                                                                                                           |
|---------|------------|---------------------------------------------------------------------------------------------------------------------------------------|
| 1,2     | DA,DB      | Differential digital signal for parallel control. (Note.1)                                                                            |
| 3       | -V(signal) | Negative output voltage signal.<br>It is for local sense and certain function reference; it cannot be connected directly to the load. |
| 4       | CONTROL    | Remote ON-OFF control pin used in the PMBus interface. (Note.2)                                                                       |
| 5       | NC         | Retain for future use.                                                                                                                |
| 6       | SDA        | For PMBus model: Serial Data used in the PMBus interface. (Note.2)                                                                    |
|         | CANH       | For CANBus model: Data line used in CANBus interface. (Note.2)                                                                        |
| 7       | SCL        | For PMBus model: Serial Clock used in the PMBus interface. (Note.2)                                                                   |
|         | CANL       | For CANBus model: Data line used in CANBus interface. (Note.2)                                                                        |
| 8       | GND-AUX    | Auxiliary voltage output GND. The signal return is isolated from the output terminals (+V & -V).                                      |

Note.1: Non-isolated signal, referenced to [-V(signal)].

Note.2: Isolated signal, referenced to GND-AUX.