



1000W Ultra-High Peak Power Supply

HRPG-1000N3 series

User's Manual



UL62368-1



BS EN/EN62368-1



TPTC004



IEC62368-1



## Features

- Universal AC input / Full range
- Built-in active PFC function, PF>0.95
- High efficiency up to 94%
- Withstand 300VAC surge input for 5 seconds
- Up to 320% peak power capability
- Protections: Short circuit / Overload / Over voltage / Over temperature
- Built-in cooling fan ON-OFF control
- Current sharing up to 4000W (3+1)
- Built-in DC OK / remote ON-OFF / remote sense functions
- Standby power 5V@0.3A
- No load power consumption<0.85W (Note.7)
- 5 years warranty

## Description

HRPG-1000N3 series is a 1000W single output AC/DC with ultra-high peak power supply. This series operates for 90~264 VAC input voltage and offers models with different rated voltage ranging between 12 and 48 V that can satisfy the demands for all kinds of industrial equipments. Each model is cooled by the built-in fan with speed control, working for the temperature up to 70°C. Moreover, HRPG-1000N3 has various built-in functions such as auxiliary power, remote sense and remote on-off control, offering vast design flexibility for industrial application. It can provide 320% short-duration peak power for motor applications and electromechanical loads requiring much higher power during start-up.

## Model Encoding

HRPG -1000N3 - 12

Output voltage (12/24/36/48V)

3 times peak power

Rated wattage

Series name

## Applications

- Factory control or automation apparatus
- Test and measurement instrument
- Laser related machine
- Aging equipment
- RF application
- For inductive and capacitive load

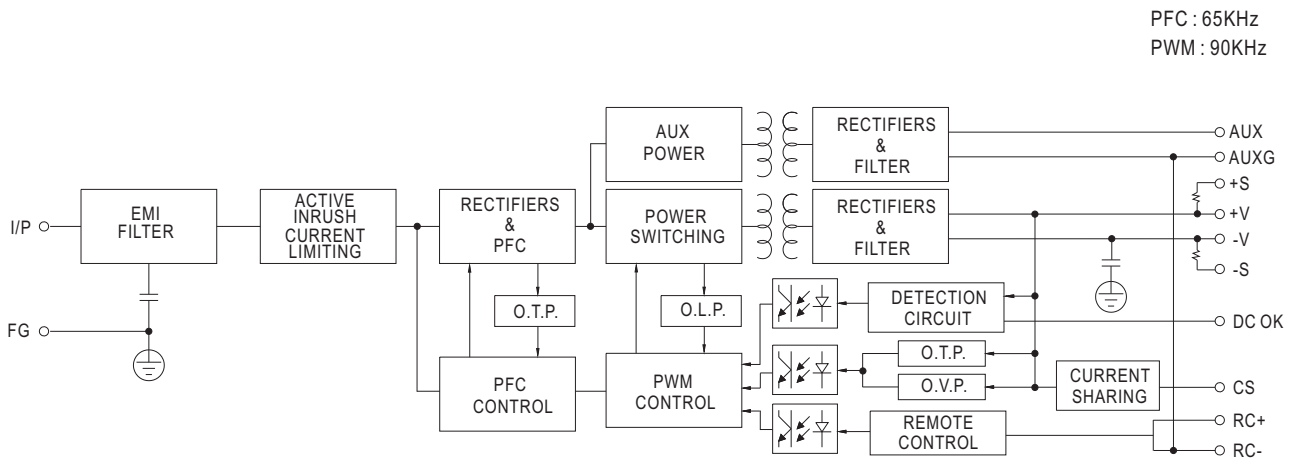
## GTIN CODE

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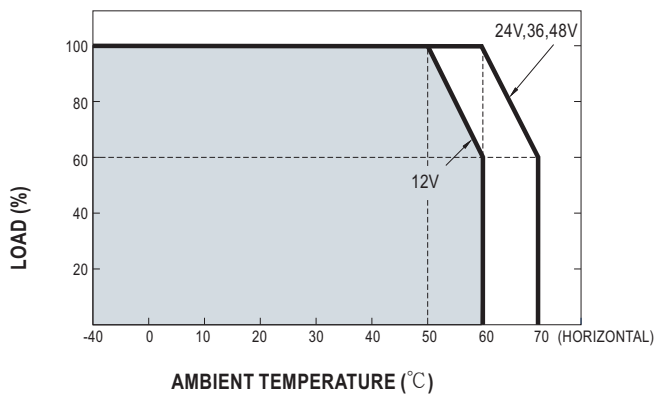
## SPECIFICATION

| MODEL                          |                                             | HRPG-1000N3-12                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | HRPG-1000N3-24                                                           | HRPG-1000N3-36                          | HRPG-1000N3-48 |  |
|--------------------------------|---------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|-----------------------------------------|----------------|--|
| OUTPUT                         | DC VOLTAGE                                  | 12V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 24V                                                                      | 36V                                     | 48V            |  |
|                                | RATED CURRENT                               | 80A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 42A                                                                      | 28A                                     | 21A            |  |
|                                | CURRENT RANGE                               | 0 ~ 80A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 0 ~ 42A                                                                  | 0 ~ 28A                                 | 0 ~ 21A        |  |
|                                | RATED POWER                                 | 960W                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 1008W                                                                    | 1008W                                   | 1008W          |  |
|                                | RIPPLE & NOISE (max.) <small>Note.2</small> | 150mVp-p                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 200mVp-p                                                                 | 250mVp-p                                | 250mVp-p       |  |
|                                | VOLTAGE ADJ. RANGE                          | 11 ~ 14V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 22 ~ 28V                                                                 | 32 ~ 38V                                | 46 ~ 56V       |  |
|                                | VOLTAGE TOLERANCE <small>Note.3</small>     | ±2.0%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | ±1.0%                                                                    | ±1.0%                                   | ±1.0%          |  |
|                                | LINE REGULATION                             | ±0.5%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | ±0.5%                                                                    | ±0.5%                                   | ±0.5%          |  |
|                                | LOAD REGULATION                             | ±2.0%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | ±0.5%                                                                    | ±0.5%                                   | ±0.5%          |  |
|                                | SETUP, RISE TIME                            | 1000ms, 50ms/230VAC      2000ms, 50ms/115VAC at full load                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                          |                                         |                |  |
|                                | HOLD UP TIME (Typ.)                         | 16ms/230VAC      16ms/115VAC at full load                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                          |                                         |                |  |
| INPUT                          | VOLTAGE RANGE                               | 90 ~ 264VAC(300VAC for 5 sec.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                          | 127 ~ 370VDC                            |                |  |
|                                | FREQUENCY RANGE                             | 47 ~ 63Hz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                          |                                         |                |  |
|                                | POWER FACTOR (Typ.)                         | PF>0.95/230VAC      PF>0.99/115VAC at full load                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                          |                                         |                |  |
|                                | EFFICIENCY (Typ.)                           | 91.5%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 93%                                                                      | 93%                                     | 94%            |  |
|                                | AC CURRENT (Typ.)                           | 8.5A/115VAC      5A/230VAC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                          |                                         |                |  |
|                                | INRUSH CURRENT (Typ.)                       | 25A/115VAC      40A/230VAC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                          |                                         |                |  |
|                                | LEAKAGE CURRENT                             | <1.2mA / 240VAC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                          |                                         |                |  |
| PROTECTION                     | OVERLOAD <small>Note.4</small>              | Output power >105% rated for more than 5 seconds then shut down o/p voltage, re-power on to recover<br>Output power > 320% rated then shut down o/p voltage, re-power on to recover for 12V<br>Output power > 350% rated then shut down o/p voltage, re-power on to recover for 24V, 36V and 48V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                          |                                         |                |  |
|                                | OVER VOLTAGE                                | 14.5 ~ 16.5V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 29 ~ 33V                                                                 | 39 ~ 46V                                | 58 ~ 65V       |  |
|                                |                                             | Protection type : Shut down o/p voltage, re-power on to recover                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                          |                                         |                |  |
|                                | OVER TEMPERATURE                            | Shut down o/p voltage, recovers automatically after temperature goes down                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                          |                                         |                |  |
| FUNCTION                       | CURRENT SHARING                             | Up to 4000W or (3+1) units. Please refer to the function manual.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                          |                                         |                |  |
|                                | REMOTE ON-OFF CONTROL                       | Power ON : short; Power OFF : open. Please refer to the function manual.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                          |                                         |                |  |
|                                | REMOTE SENSE                                | Compensate voltage drop on the load wiring up to 0.5V. Please refer to the function manual.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                          |                                         |                |  |
|                                | DC-OK SIGNAL                                | The TTL signal out, PSU turn on = 3.3 ~ 5.6V ; PSU turn off = 0 ~ 1V. Please refer to the function manual.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                          |                                         |                |  |
|                                | 5V STANDBY                                  | 5VSB : 5V@0.3A ; tolerance ±5%, ripple : 50mVp-p(max.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                          |                                         |                |  |
|                                | FAN CONTROL                                 | Fan on/off by NTC(RT50) or 30% load min.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                          |                                         |                |  |
| ENVIRONMENT                    | WORKING TEMP.                               | -40 ~ +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, 5G 10min./1cycle, 60min. each along X, Y, Z axes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                          |                                         |                |  |
| SAFETY & EMC                   | SAFETY STANDARDS                            | UL62368-1, CAN/CSA C22.2 No. 62368-1, TUV BS EN/EN62368-1, AS/NZS62368.1, EAC TP TC 004 approved                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                          |                                         |                |  |
|                                | WITHSTAND VOLTAGE                           | I/P-O/P:3KVAC    I/P-FG:2KVAC    O/P-FG:0.5KVAC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                          |                                         |                |  |
|                                | 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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | BS EN/EN55032 (CISPR32)                                                  | Class B                                 |                |  |
|                                |                                             | Radiated                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | BS EN/EN55032 (CISPR32)                                                  | Class B                                 |                |  |
|                                |                                             | Harmonic Current                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | BS EN/EN61000-3-2                                                        | Class A                                 |                |  |
|                                |                                             | Voltage Flicker                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | BS EN/EN61000-3-3                                                        | -----                                   |                |  |
|                                | EMC IMMUNITY                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | BS EN/EN55035, BS EN/EN61000-6-2                                         |                                         |                |  |
|                                |                                             | Parameter                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Standard                                                                 | Test Level / Note                       |                |  |
|                                |                                             | ESD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | BS EN/EN61000-4-2                                                        | Level 3, 8KV air ; Level 2, 4KV contact |                |  |
|                                |                                             | Radiated                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | BS EN/EN61000-4-3                                                        | Level 3                                 |                |  |
|                                |                                             | EFT / Burst                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | BS EN/EN61000-4-4                                                        | Level 3                                 |                |  |
|                                |                                             | Surge                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | BS EN/EN61000-4-5                                                        | Level 4, 2KV/Line-Line 4KV/Line-Earth   |                |  |
|                                |                                             | Conducted                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | BS EN/EN61000-4-6                                                        | Level 3                                 |                |  |
| Magnetic Field                 |                                             | BS EN/EN61000-4-8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Level 4                                                                  |                                         |                |  |
| Voltage Dips and Interruptions |                                             | BS EN/EN61000-4-11                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | >95% dip 0.5 periods, 30% dip 25 periods, >95% interruptions 250 periods |                                         |                |  |
| OTHERS                         | MTBF                                        | 989.2K hrs min.    Telcordia SR-332 (Bellcore) ;    130.6K hrs min.    MIL-HDBK-217F (25℃)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                          |                                         |                |  |
|                                | DIMENSION                                   | 218*105*61.5mm (L*W*H)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                          |                                         |                |  |
|                                | PACKING                                     | 1.46Kg;8pcs/12.8Kg/1.58CUFT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                          |                                         |                |  |
| 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 0.1 μ F & 47 μ F parallel capacitor.<br>3. Tolerance : includes set up tolerance, line regulation and load regulation.<br>4. After the output protection, restart the device about 30 seconds after the input disconnection interval.<br>5. Derating may be needed under low input voltages. Please check the derating curve for more details.<br>6. Length of set up time is measured at first cold start. Turning ON/OFF the power supply may lead to increase of the set up time.<br>7. No load power consumption<0.85W when RC+ & RC- (CN100 pin3,4) open.<br>8. 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 360mm*700mm 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."<br>(as available on <a href="https://www.meanwell.com/Upload/PDF/EMI_statement_en.pdf">https://www.meanwell.com/Upload/PDF/EMI_statement_en.pdf</a> )<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).<br>※ Product Liability Disclaimer : For detailed information, please refer to <a href="https://www.meanwell.com/serviceDisclaimer.aspx">https://www.meanwell.com/serviceDisclaimer.aspx</a> |                                                                          |                                         |                |  |

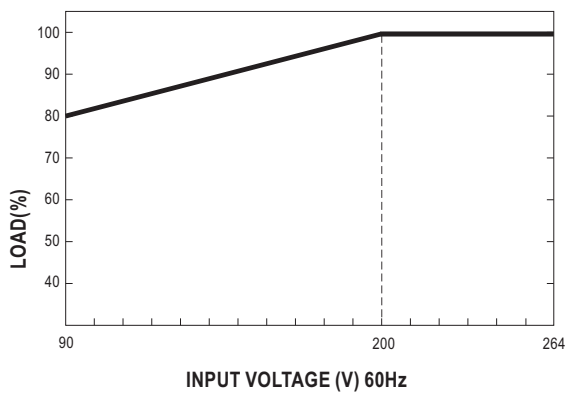
## Block Diagram



## Derating Curve



## Output Derating VS Input Voltage



## Function Manual

### 1. Peak Power

$$P_{av} = \frac{P_{pk} \times t + P_{npk} \times (T-t)}{T} \leq P_{rated}$$

$$\text{Duty} = \frac{t}{T} \times 100\% \leq 35\%$$

$P_{av}$ : Average output power (W)

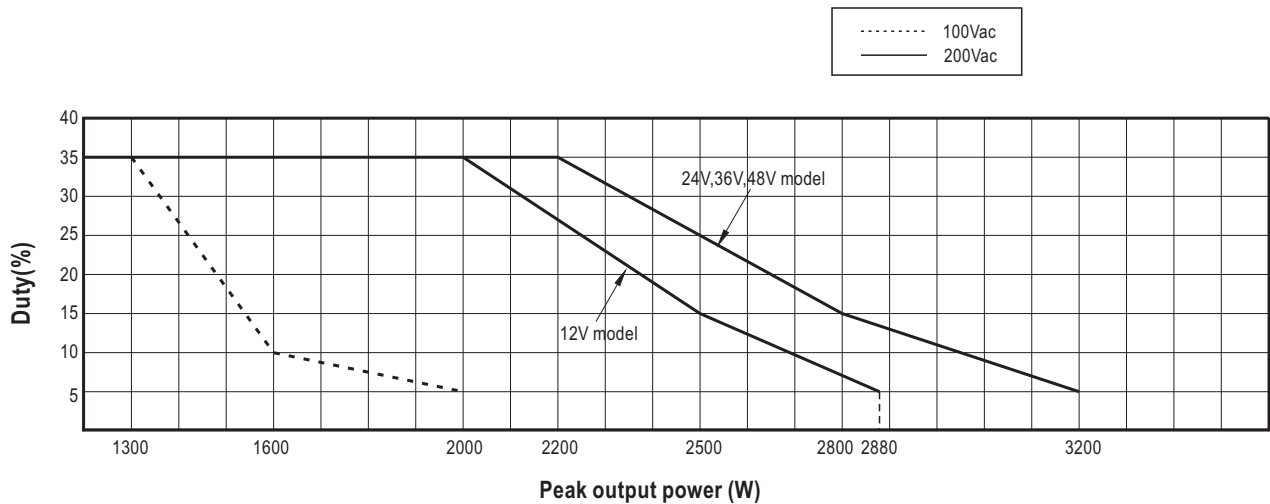
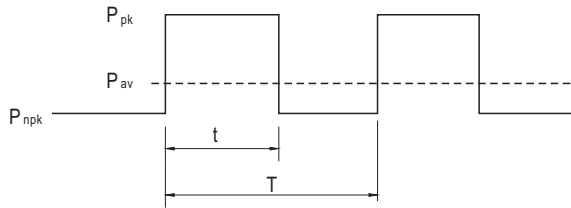
$P_{pk}$ : Peak output power (W)

$P_{npk}$ : Non-peak output power (W)

$P_{rated}$ : Rated output power (W)

$t$ : Peak power width (sec)

$T$ : Period (sec)



#### For example (24V model) :

$V_{in} = 200V$      $\text{Duty\_max} = 25\%$

$P_{av} = P_{rated} = 1008W$

$P_{pk} = 2500W$

$t \leq 5 \text{ sec}$

$T \geq \frac{5 \text{ sec}}{25\%} \geq 20 \text{ sec}$

$$P_{npk} \leq \frac{T P_{av} - t P_{pk}}{T-t}$$

$P_{npk} \leq 511W$

## Function Description of CN100

| Pin No. | Function | Description                                                                                                                                                                                                           |
|---------|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1       | AUXG     | Auxiliary voltage output ground.                                                                                                                                                                                      |
| 2       | AUX      | Auxiliary voltage output, 4.75~5.25V, referenced to pin 1(AUXG). The maximum load current is 0.3A. This output is not controlled by the "remote ON/OFF control".                                                      |
| 3       | RC+      | Turns the output on and off by electrical or dry contact between pin 4 (RC-), Short: Power ON, Open: Power OFF.                                                                                                       |
| 4       | RC-      | Remote control ground.                                                                                                                                                                                                |
| 5       | CS       | Current sharing signal. When units are connected in parallel, the CS pins of the units should be connected to allow current balance between units.                                                                    |
| 6,8     | GND      | This pin connects to the negative terminal(-V). Return for DC-OK signal output.                                                                                                                                       |
| 7       | DC-OK    | DC-OK signal is a TTL level signal, referenced to pin8(DC-OK GND). High when PSU turns on.                                                                                                                            |
| 9       | +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. |
| 10      | -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. |

## Function Manual

### 1.Remote Sense

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

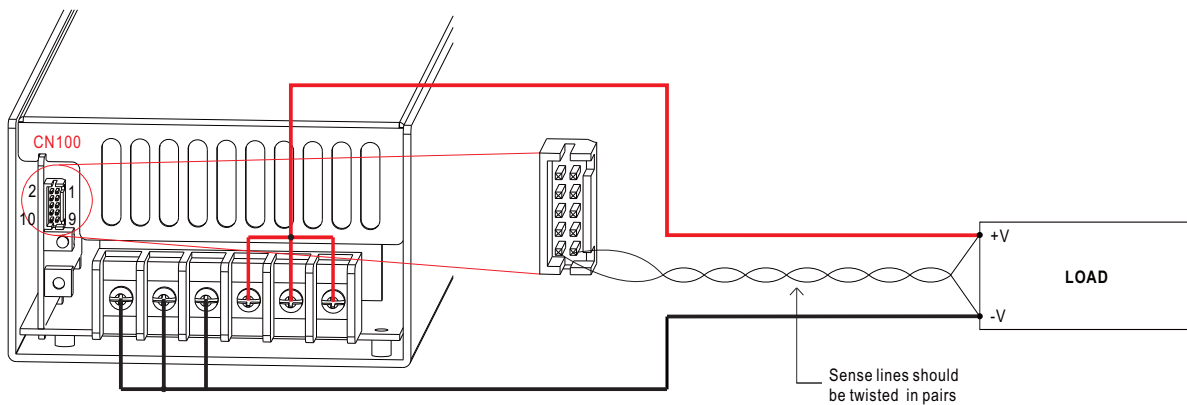


Fig 1.1

### 2.DC-OK Signal

DC-OK signal is a TTL level signal. High when PSU turns on.

| Between DC-OK(pin7) and GND(pin6,8) | Output Status |
|-------------------------------------|---------------|
| 3.3 ~ 5.6V                          | ON            |
| 0 ~ 1V                              | OFF           |

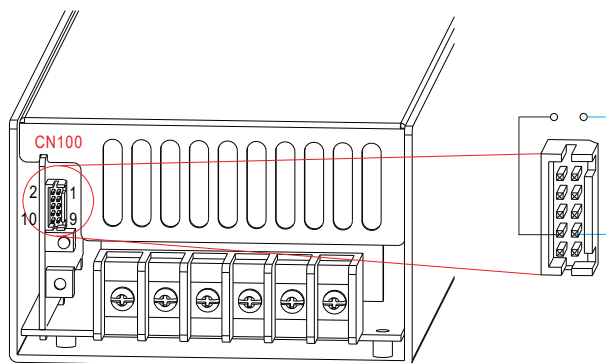


Fig 2.1

### 3.Remote ON-OFF Control

The PSU can be turned ON/OFF by using the "Remote Control" function.

| Between RC+(pin3) and RC-(pin4) | Output Status |
|---------------------------------|---------------|
| SW ON (Short)                   | ON            |
| SW OFF (Open)                   | OFF           |

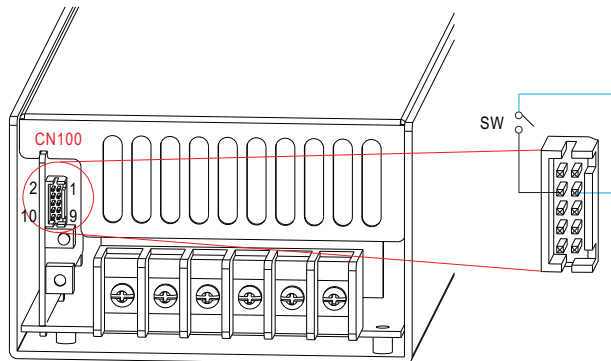


Fig 3.1

### 4.Current Sharing

HRPG-1000N3 has the built-in active current sharing function and can be connected in parallel, up to 4 units, to provide higher output power as exhibited below :

※The power supplies should be paralleled using short and large diameter wiring and then connected to the load.

※ Difference of output voltages among parallel units should be less than 0.2V.

※ The total output current must not exceed the value determined by the following equation:

Maximum output current at parallel operation=(Rated current per unit) × (Number of unit) × 0.9

※ When the total output current is less than 5% of the total rated current, or say (5% of Rated current per unit) × (Number of unit) the current shared among units may not be fully balanced.

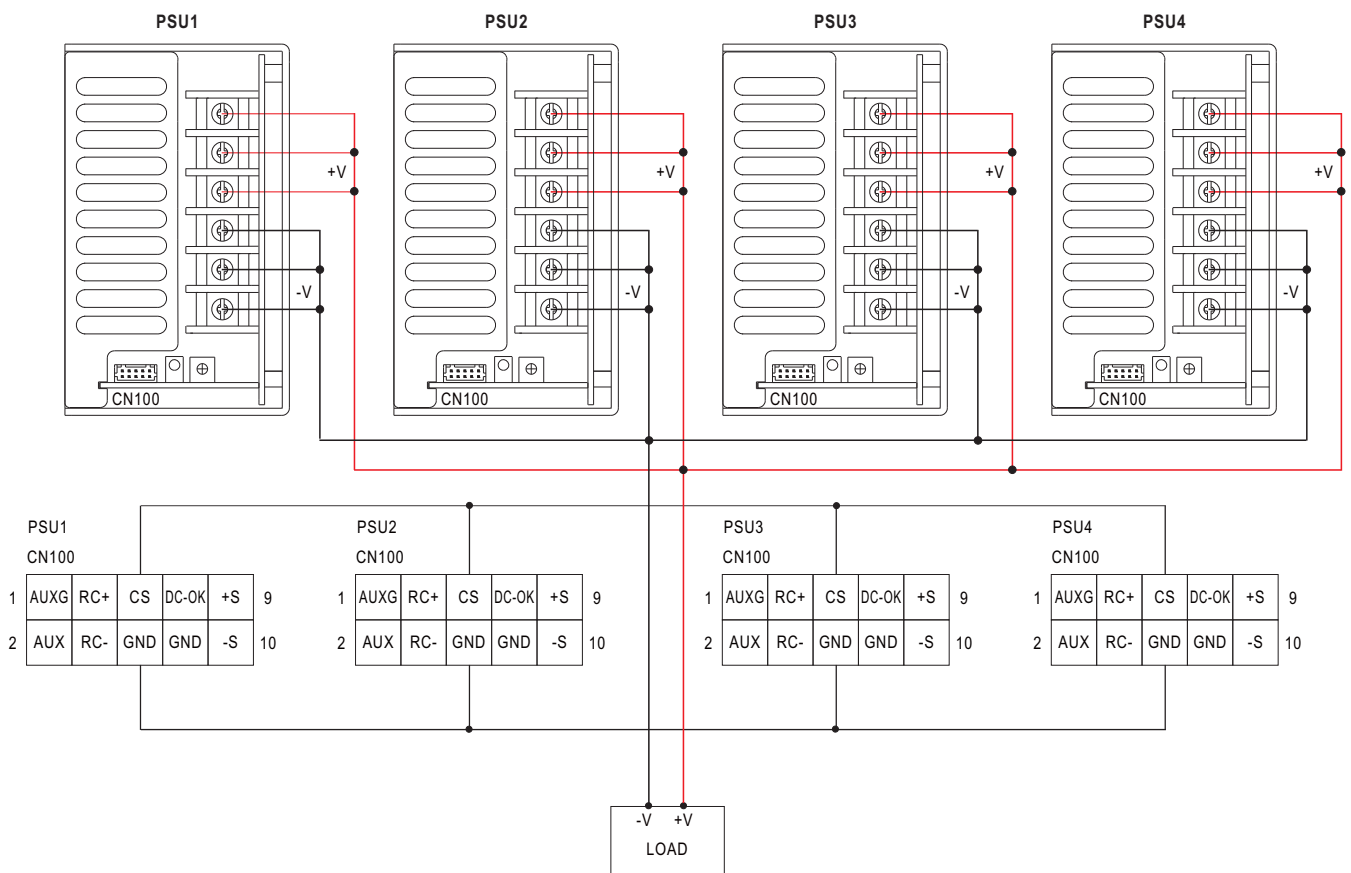
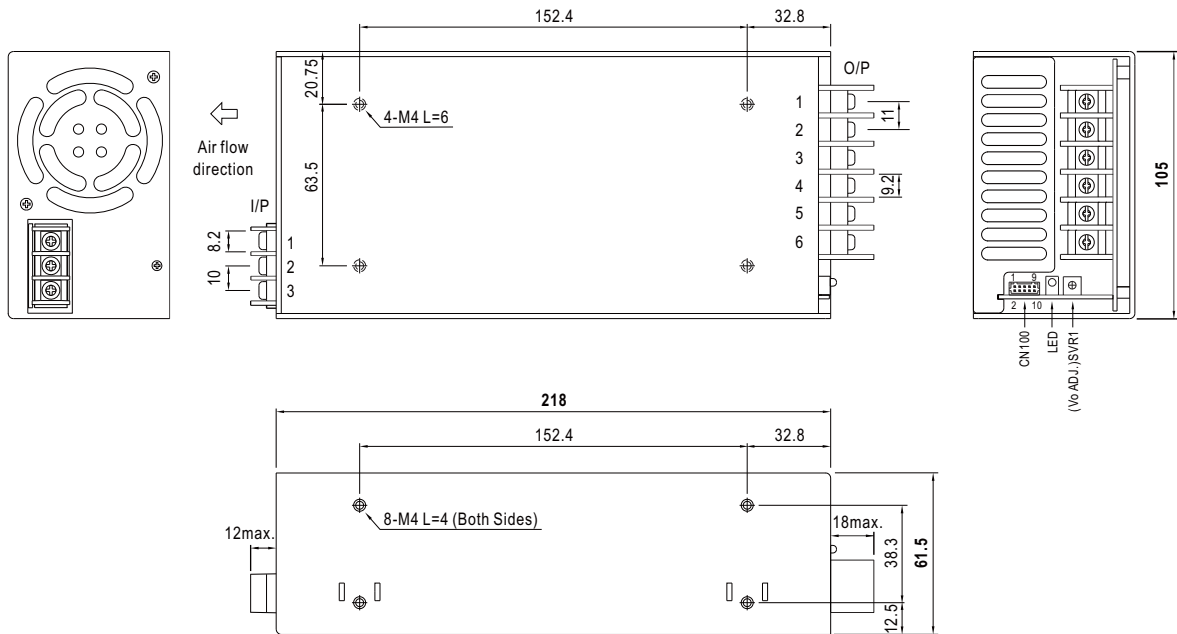


Fig 4.1

## Mechanical Specification

Case No. 977H Unit:mm



AC Input Terminal Pin No. Assignment

| Pin No. | Assignment |
|---------|------------|
| 1       | AC/L       |
| 2       | AC/N       |
| 3       | FG $\perp$ |

DC Output Terminal Pin No. Assignment

| Pin No. | Assignment |
|---------|------------|
| 1~3     | +V         |
| 4~6     | -V         |

Connector Pin No. Assignment(CN100) : HRS DF11-10DP-2DS or equivalent

| Pin No. | Assignment | Pin No. | Assignment | Mating Housing              | Terminal                    |
|---------|------------|---------|------------|-----------------------------|-----------------------------|
| 1       | AUXG       | 6,8     | GND        | HRS DF11-10DS or equivalent | HRS DF11-10SC or equivalent |
| 2       | AUX        | 7       | DC-OK      |                             |                             |
| 3       | RC+        | 9       | +S         |                             |                             |
| 4       | RC-        | 10      | -S         |                             |                             |
| 5       | CS         |         |            |                             |                             |

## Installation Manual

Please refer to : <http://www.meanwell.com/manual.html>