



300W Ultra-High Peak Power Supply

HRP-300N3 series



CB **CE** **UKCA**

AS/NZS 62368.1 UL62368-1

BS EN/EN62368-1 TPTC004 IEC62368-1



■ Features

- Universal AC input / Full range
- Withstand 300VAC surge input for 5 seconds
- 350% peak power capability
- Built-in constant current limiting circuit
- Protections: Short circuit / Overload / Over voltage / Over temperature
- Built-in cooling fan ON-OFF control
- Built-in DC OK signal
- Built-in remote sense function
- Withstand 5G vibration
- Operating altitude up to 5000 meters(Note.5)
- Output voltage adjustable $\pm 15\%$ (Avg.)
- 1U low profile 41mm
- 5 years warranty

■ Applications

- Industrial automation machinery
- Industrial control system
- Mechanical and electrical equipment
- Diagnostic or biological facilities
- Test or measurement systems
- Telecommunication equipment

■ GTIN CODE

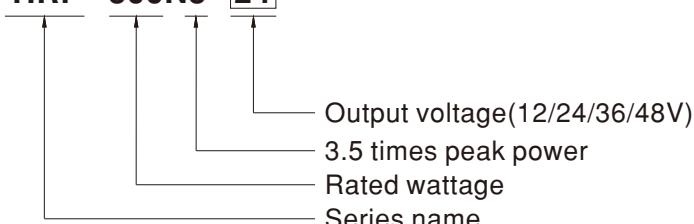
MW Search: <https://www.meanwell.com/serviceGTIN.aspx>

■ Description

HRP-300N3 series is a 300W single output AC/DC ultra-high peak power supply. This series operates at 85~264VAC input voltage and offers the models with the DC output mostly demanded from the industry. Each model is cooled by the built-in fan with fan ON-OFF control, working for the temperature up to 70°C. Moreover, HRP-300N3 can provide 350% short-duration peak power for motor applications and electromechanical loads requiring much higher power during start-up.

■ Model Encoding

HRP - 300N3 - 24





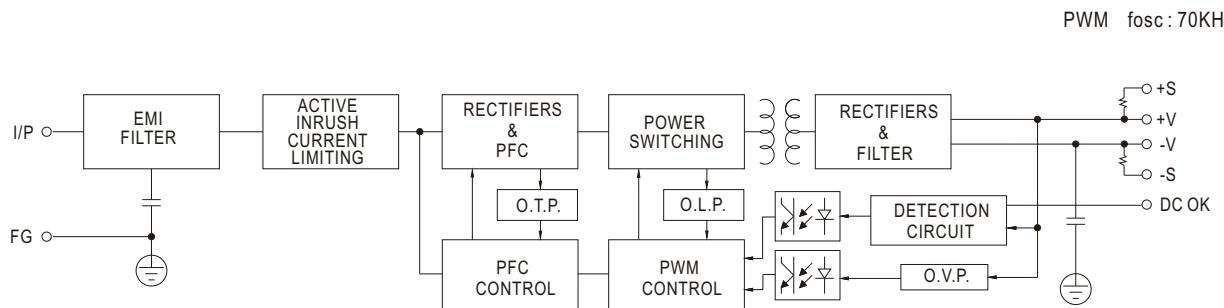
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HRP-300N3 series

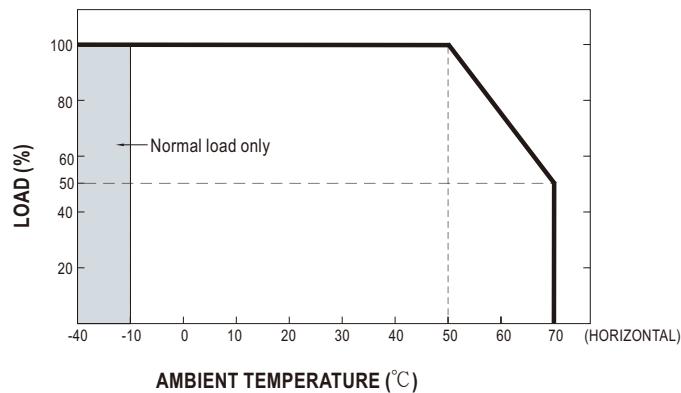
SPECIFICATION

| MODEL | HRP-300N3-12 | HRP-300N3-24 | HRP-300N3-36 | HRP-300N3-48 |
|---------------------------|--|--|-----------------------------|--|
| OUTPUT | DC VOLTAGE | 12V | 24V | 36V |
| | RATED CURRENT | 27A | 14A | 9A |
| | CURRENT RANGE | 0 ~ 27A | 0 ~ 14A | 0 ~ 9A |
| | RATED POWER | 324W | 336W | 324W |
| | RIPPLE & NOISE (max.) Note.2 | 120mVp-p | 150mVp-p | 250mVp-p |
| | VOLTAGE ADJ. RANGE | 10.2 ~ 13.8V | 21.6 ~ 28.8V | 28.8 ~ 39.6V |
| | VOLTAGE TOLERANCE Note.3 | ± 1.0% | ± 1.0% | ± 1.0% |
| | LINE REGULATION | ± 0.3% | ± 0.2% | ± 0.2% |
| | LOAD REGULATION | ± 0.5% | ± 0.5% | ± 0.5% |
| SETUP, RISE TIME | | 1000ms, 50ms/230VAC 2500ms, 50ms/115VAC at full load | | |
| HOLD UP TIME (Typ.) | | 16ms/230VAC | 16ms/115VAC at full load | |
| INPUT | VOLTAGE RANGE Note.4 | 85 ~ 264VAC | 120 ~ 370VDC | |
| | FREQUENCY RANGE | 47 ~ 63Hz | | |
| | POWER FACTOR (Typ.) | PF>0.95/230VAC | PF>0.99/115VAC at full load | |
| | EFFICIENCY (Typ.) | 88% | 87% | 88% |
| | AC CURRENT (Typ.) | 3.5A/115VAC | 1.8A/230VAC | |
| | INRUSH CURRENT (Typ.) | 35A/115VAC | 75A/230VAC | |
| LEAKAGE CURRENT | | <2mA / 240VAC | | |
| PROTECTION | OVERLOAD | Output power >105% rated for more than 5 seconds then shut down o/p voltage, re-power on to recover | | |
| | | Constant current limiting for output power >380%(1140W) rated for more than 5 seconds and then shut down o/p voltage, re-power on to recover | | |
| | OVER VOLTAGE | 14.4 ~ 16.8V | 30 ~ 34.8V | 41.4 ~ 48.6V |
| | | Protection type : Shut down o/p voltage, re-power on to recover | | |
| FUNCTION | OVER TEMPERATURE | TSW1: Shut down o/p voltage, recovers automatically after temperature goes down RTH3: Shut down o/p voltage, re-power on to recover | | |
| | DC OK SIGNAL | PSU turns on : 3.3 ~ 5.6V ; PSU turns off : 0 ~ 1V | | |
| | FAN CONTROL (Typ.) | Load 35±15% or RTH2≥50°C Fan on | | |
| ENVIRONMENT | WORKING TEMP. | -40 ~ +70°C (Refer to "Derating Curve") | | |
| | WORKING HUMIDITY | 20 ~ 90% RH non-condensing | | |
| | STORAGE TEMP., HUMIDITY | -40 ~ +85°C , 10 ~ 95% RH non-condensing | | |
| | TEMP. COEFFICIENT | ± 0.03%/°C (0 ~ 50°C) | | |
| | VIBRATION | 10 ~ 500Hz, 5G 10min./1cycle, 60min. each along X, Y, Z axes | | |
| OPERATING ALTITUDE Note.5 | | 5000 meters | | |
| SAFETY & EMC (Note 6) | SAFETY STANDARDS | UL62368-1, TUV BS EN/EN62368-1, EAC TP TC 004, AS/NZS 62368.1 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°C / 70% RH | | |
| | EMC EMISSION | Parameter | Standard | Test Level / Note |
| | | Conducted | BS EN/EN55032 | Class B |
| | | Radiated | BS EN/EN55032 | Class B |
| | | Harmonic current | BS EN/EN61000-3-2 | Class A |
| | | Voltage Flicker | BS EN/EN61000-3-3 | ----- |
| | BS EN/EN55035 , BS EN/EN61000-6-2(BS EN/EN50082-2) | | | |
| | EMC IMMUNITY | Parameter | Standard | Test Level / Note |
| | | ESD | BS EN/EN61000-4-2 | Level 3, 8KV air; Level 2, 4KV contact |
| | | RF field | BS EN/EN61000-4-3 | Level 3, 10V/m |
| | | EFT/ Burst | BS EN/EN61000-4-4 | Level 3, 2KV |
| | | Surge | BS EN/EN61000-4-5 | Level 4, 4KV/Line-FG; 2KV/Line-Line |
| | | Conducted | BS EN/EN61000-4-6 | Level 3, 10V |
| | | Magnetic Field | BS EN/EN61000-4-8 | Level 4, 30A/m |
| | | Voltage Dips and Interruptions | BS EN/EN61000-4-11 | 95% dip 0.5 periods, 30% dip 25 periods, 95% interruptions 250 periods |
| OTHERS | MTBF | 1524.0K hrs min. Telcordia TR/SR-332 (Bellcore) ; 187.7K hrs min. MIL-HDBK-217F (25°C) | | |
| | DIMENSION | 199*105*41mm (L*W*H) | | |
| | PACKING | 0.9Kg;15pcs/14.5Kg/0.84CUFT | | |
| NOTE | 1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation. 4. Derating may be needed under low input voltages. Please check the derating curve for more details. 5. The ambient temperature derating of 3.5°C/1000m with fanless models and of 5°C/1000m with fan models for operating altitude higher than 2000m(6500ft). 6. The power supply is considered a component which will be installed into a final equipment. All the EMC tests are been executed by mounting the unit on a 360mm*360mm metal plate with 1mm of thickness. The final equipment must be re-confirmed that it still meets EMC directives. For guidance on how to perform these EMC tests, please refer to "EMI testing of component power supplies." (as available on http://www.meanwell.com) ※ Product Liability Disclaimer : For detailed information, please refer to https://www.meanwell.com/serviceDisclaimer.aspx | | | |

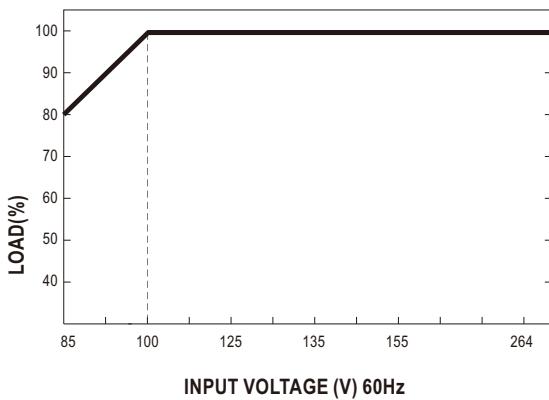
■ Block Diagram



■ Derating Curve



■ Output Derating VS Input Voltage

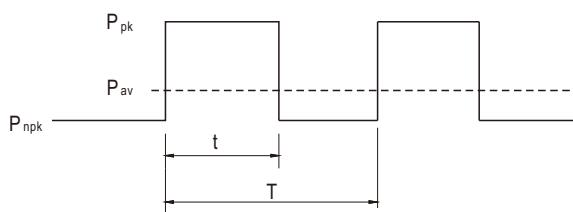


■ Function Manual

1. Peak Power

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

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

 $t \leq 5 \text{ sec}$

 P_{av} : Average output power (W)

 P_{pk} : Peak output power (W)

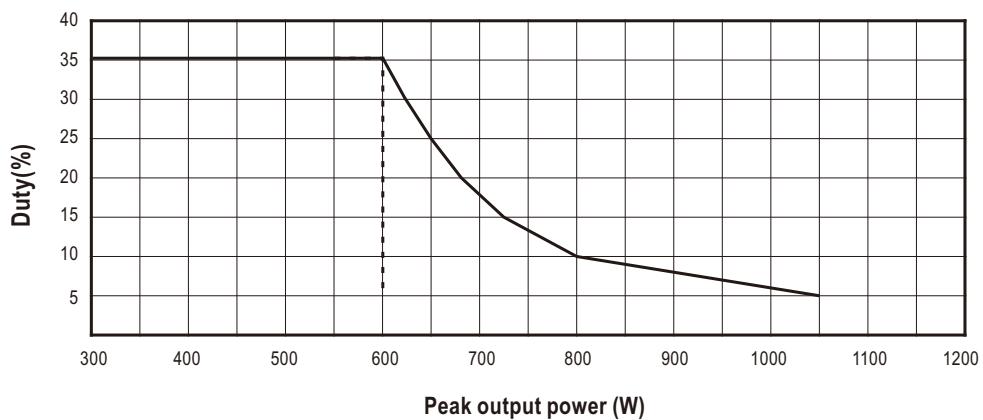
 P_{npk} : Non-peak output power (W)

 P_{rated} : Rated output power (W)

 t : Peak power width (sec)

 T : Period (sec)

| | |
|-------|--------|
| | 100Vac |
| — | 200Vac |



For example (24V model):

 $V_{in} = 200V \quad \text{Duty}_{max} = 10\%$
 $P_{av} = P_{rated} = 336W$
 $P_{pk} = 800W$
 $t \leq 5 \text{ sec}$

$$T \geq \frac{5 \text{ sec}}{10\%} \geq 50 \text{ sec}$$

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

$$P_{npk} \leq 284.4W$$

2. Remote Sense

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

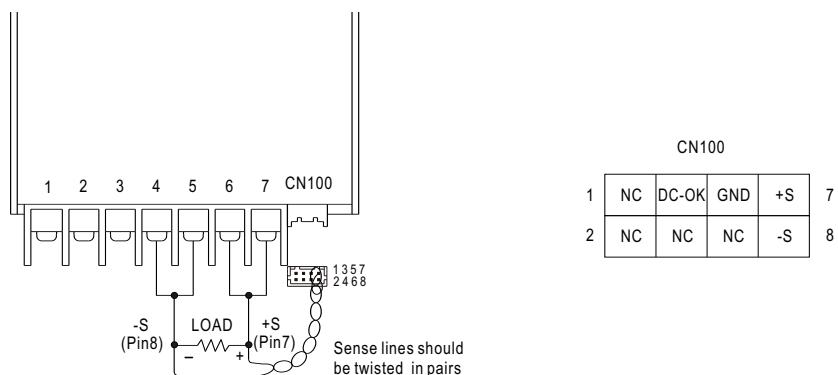


Fig 1.1

3. DC-OK Signal

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

| Between DC-OK(pin3) and GND(pin5) | Output Status |
|-----------------------------------|---------------|
| 3.3 ~ 5.6V | ON |
| 0 ~ 1V | OFF |

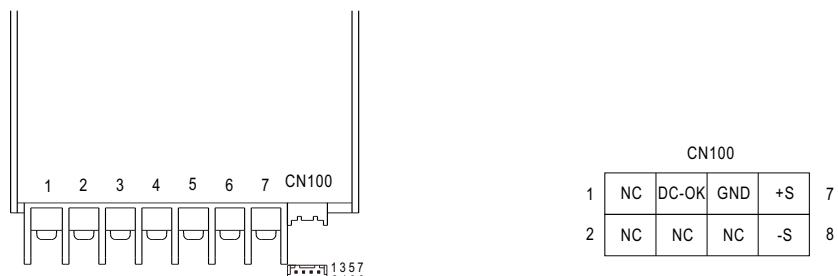
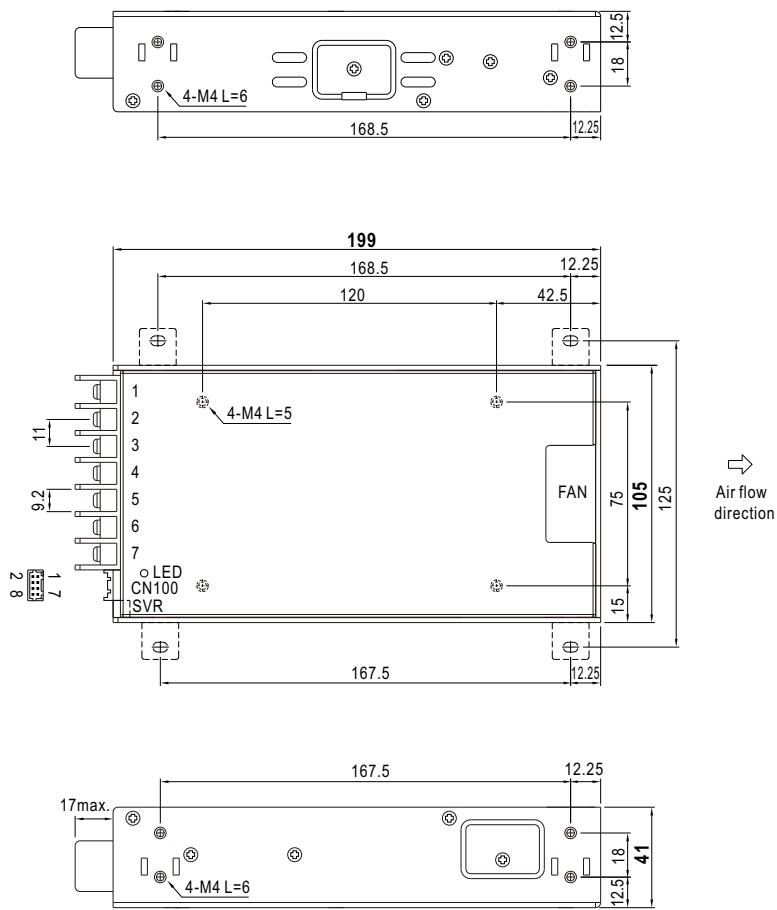


Fig 2.1

■ Mechanical Specification

Case No.980A Unit:mm



Terminal Pin No. Assignment

| Pin No. | Assignment | Pin No. | Assignment |
|---------|------------|---------|--------------|
| 1 | AC/L | 4,5 | DC OUTPUT -V |
| 2 | AC/N | 6,7 | DC OUTPUT +V |
| 3 | FG \pm | | |

Connector Pin No. Assignment (CN100) :

HRS DF11-08DP-2DS or equivalent

| Pin No. | Assignment | Mating Housing | Terminal |
|---------|------------|----------------------------|-----------------------------|
| 1,2,4,6 | NC | | |
| 3 | DC-OK | | |
| 5 | GND | HRS DF11-8DS or equivalent | HRS DF11-**SC or equivalent |
| 7 | +S | | |
| 8 | -S | | |

■ Installation Manual

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