



AS/NZS 62368.1 UL62368-1 EN62368-1 TPTC004 IEC62368-1



Features

- Universal AC input / Full range
- Built-in active PFC function, PF>0.95
- 250% peak power capability
- High efficiency up to 89%
- Withstand 300VAC surge input for 5 seconds
- Protections: Short circuit / Overload / Over voltage / Over temperature
- 1U low profile 41mm
- Built-in cooling fan ON-OFF control
- Built-in DC OK signal
- Built-in remote sense function
- 5 years warranty

Applications

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

Description

HRP-300N is a 300W single output type AC/DC power supply. This series operates for 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-300N provides 250% short-duration peak power for motor applications and electromechanical loads requiring much higher power during start-up.

Model Encoding

HRP - 300N - 24

Output voltage(12/24/36/48V)
Rated wattage
Series name



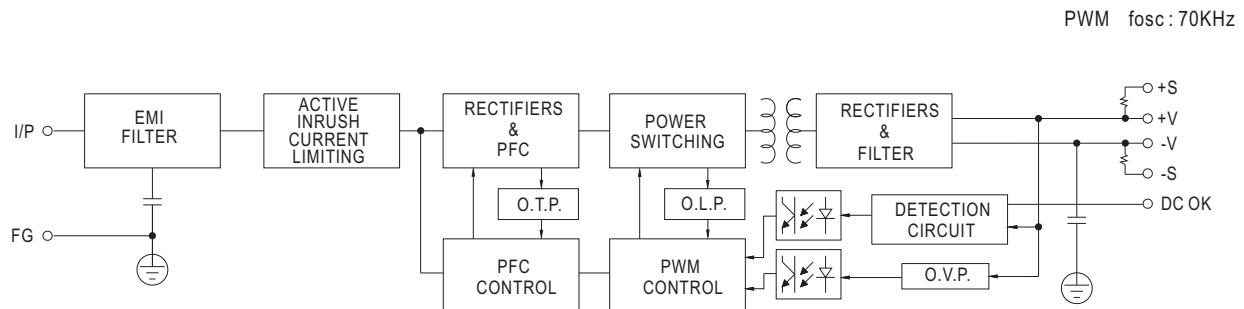
300W Single Output with PFC Function

HRP-300N series

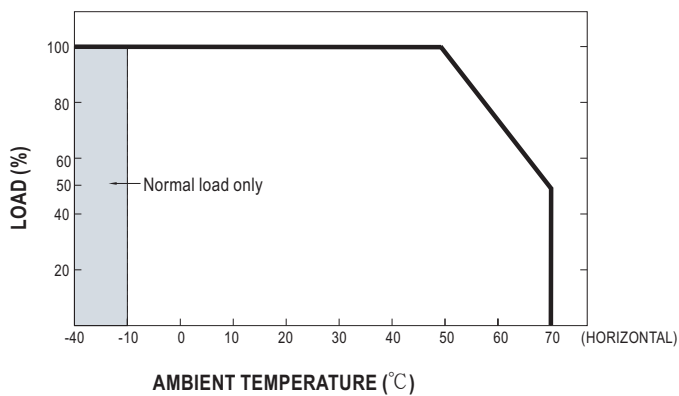
SPECIFICATION

MODEL		HRP-300N-12		HRP-300N-24		HRP-300N-36		HRP-300N-48	
OUTPUT	DC VOLTAGE	12V		24V		36V		48V	
	RATED CURRENT	27A		14A		9A		7A	
	CURRENT RANGE	0 ~ 27A		0 ~ 14A		0 ~ 9A		0 ~ 7A	
	RATED POWER	324W		336W		324W		336W	
	RIPPLE & NOISE (max.) Note.2	120mVp-p		150mVp-p		250mVp-p		250mVp-p	
	VOLTAGE ADJ. RANGE	10.2 ~ 13.8V		21.6 ~ 28.8V		28.8 ~ 39.6V		40.8 ~ 55.2V	
	VOLTAGE TOLERANCE Note.3	± 1.0%		± 1.0%		± 1.0%		± 1.0%	
	LINE REGULATION	± 0.3%		± 0.2%		± 0.2%		± 0.2%	
	LOAD REGULATION	± 0.5%		± 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%		89%	
	AC CURRENT (Typ.)	3.5A/115VAC		1.8A/230VAC					
	INRUSH CURRENT (Typ.)	35A/115VAC		75A/230VAC					
	LEAKAGE CURRENT	<1.5mA / 240VAC							
PROTECTION	OVERLOAD	Normally works within 105 ~ 200% rated output power for more than 5 seconds and then shut down o/p voltage, re-power on to recover Constant current limiting for output power >280% 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		57.6 ~ 67.2V	
		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	DC OK SIGNAL	PSU turns on : 3.3 ~ 5.6V ; PSU turns off : 0 ~ 1V							
	FAN CONTROL (Typ.)	Load 35±15% or RTH2≥50℃ Fan on							
ENVIRONMENT	WORKING TEMP.	-40 ~ +70℃ (Refer to "Derating Curve")							
	WORKING HUMIDITY	20 ~ 90% RH non-condensing							
	STORAGE TEMP., HUMIDITY	-40 ~ +85℃ , 10 ~ 95% RH							
	TEMP. COEFFICIENT	± 0.03%/℃ (0 ~ 50℃)							
	VIBRATION	10 ~ 500Hz, 5G 10min./1cycle, 60min. each along X, Y, Z axes							
SAFETY & EMC (Note 5)	SAFETY STANDARDS	UL62368-1, TUV 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℃ / 70% RH							
	EMC EMISSION	Parameter	Standard				Test Level / Note		
		Conducted	EN55032				Class B		
		Radiated	EN55032				Class B		
		Harmonic current	EN61000-3-2				Class A		
		Voltage Flicker	EN61000-3-3				-----		
	EMC IMMUNITY	EN55035 , EN61000-6-2(EN50082-2)							
		Parameter	Standard				Test Level / Note		
		ESD	EN61000-4-2				Level 3, 8KV air; Level 2, 4KV contact		
		RF field	EN61000-4-3				Level 3, 10V/m		
		EFT/ Burst	EN61000-4-4				Level 3, 2KV		
		Surge	EN61000-4-5				Level 4, 4KV/Line-FG; 2KV/Line-Line		
		Conducted	EN61000-4-6				Level 3, 10V		
		Magnetic Field	EN61000-4-8				Level 4, 30A/m		
		Voltage Dips and Interruptions	EN61000-4-11				95% dip 0.5 periods, 30% dip 25 periods, 95% interruptions 250 periods		
OTHERS	MTBF	529.1K hrs min. Telcordia TR/SR-332 (Bellcore) ; 201.43K hrs min. MIL-HDBK-217F (25℃)							
	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℃ 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 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) 6. The ambient temperature derating of 3.5℃/1000m with fanless models and of 5℃/1000m with fan models for operating altitude higher than 2000m(6500ft). ※ Product Liability Disclaimer : For detailed information, please refer to https://www.meanwell.com/serviceDisclaimer.aspx								

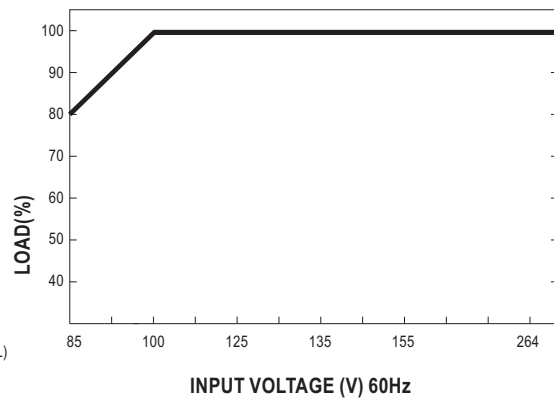
Block Diagram



Derating Curve



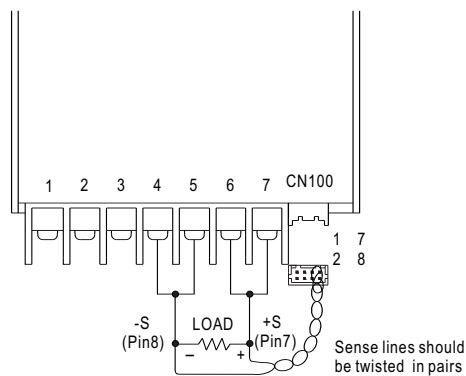
Output Derating VS Input Voltage



Function Manual

1.Remote Sense

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



CN100

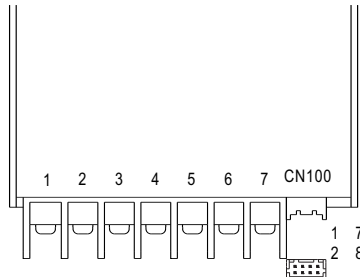
1	NC	DC-OK	GND	+S	7
2	NC	NC	NC	-S	8

Fig 1.1

2.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



CN100					
1	NC	DC-OK	GND	+S	7
2	NC	NC	NC	-S	8

Fig 2.1

3.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)

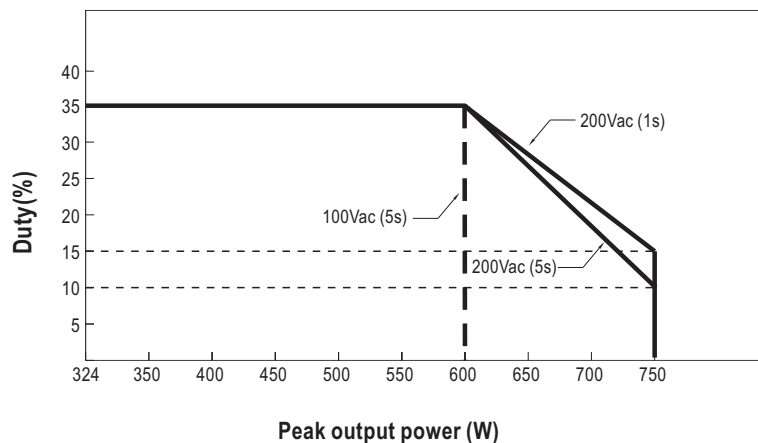
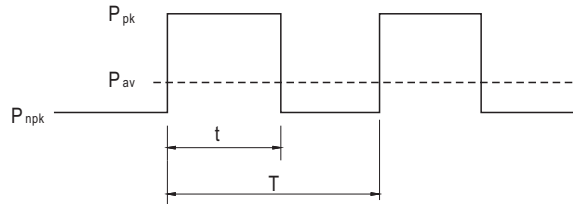
P_{pk} : Peak output power (W)

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

P_{rated} : Rated output power(W)

t : Peak power width(sec)

T : Period(sec)



For example (12V model) :

$V_{in} = 100V$ $\text{Duty}_{max} = 35\%$

$P_{av} = P_{rated} = 324W$

$P_{pk} = 600W$

$t \leq 5 \text{ sec}$

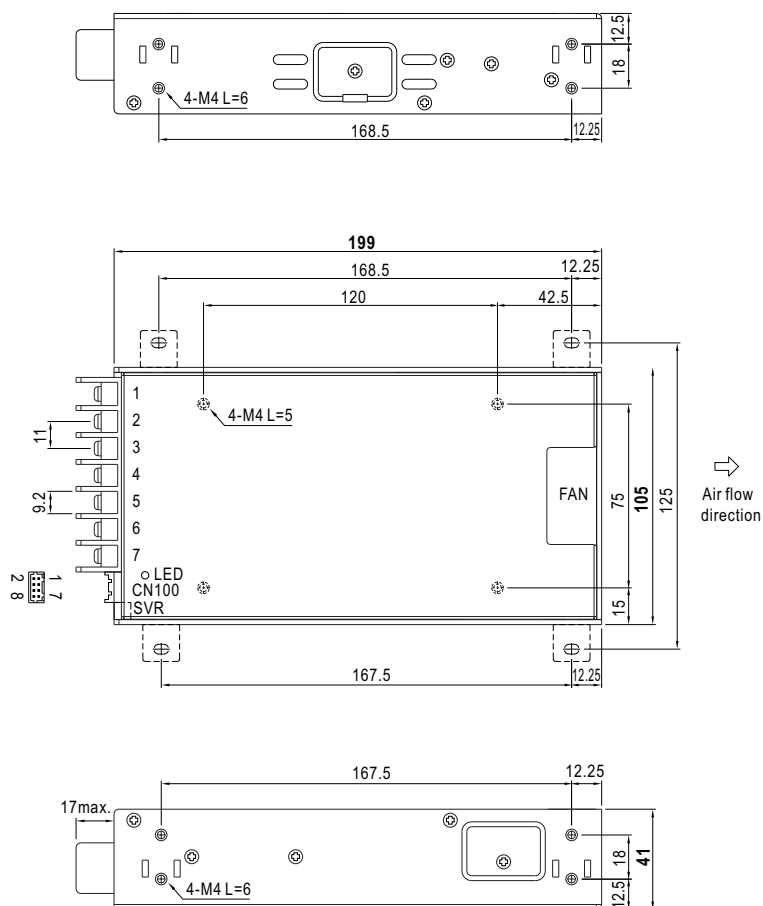
$T \geq 14.29 \text{ sec}$

$$P_{av} = \frac{P_{pk} \times t + P_{npk} \times (T-t)}{T} = \frac{600 \times 5 + P_{npk} \times (14.29-5)}{14.29} \leq 324W$$

$$P_{npk} \leq 175.4W$$

■ 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	EG $\frac{\perp}{\perp}$		

Connector Pin No. Assignment (CN100):
HRS DF11-08DP-2DS or equivalent

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

■ Installation Manual

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