



150W Single Output with PFC Function

HRP-150N series



User's Manual



■ 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
- Cooling by free air convection
- 1U low profile 38mm
- 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

■ GTIN CODE

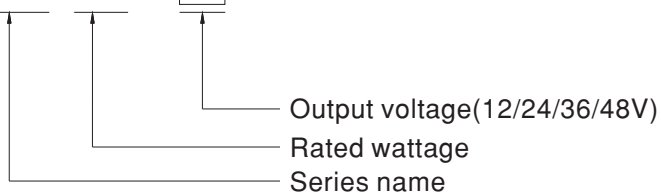
MW Search: <https://www.meanwell.com/serviceGTIN.aspx>

■ Description

HRP-150N is a 150W 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 free air convection, working for the temperature up to 70℃ without cover. Moreover, HRP-150N provides 250% short-duration peak power for motor applications and electromechanical loads requiring much higher power during start-up.

■ Model Encoding

HRP - 150N - 24





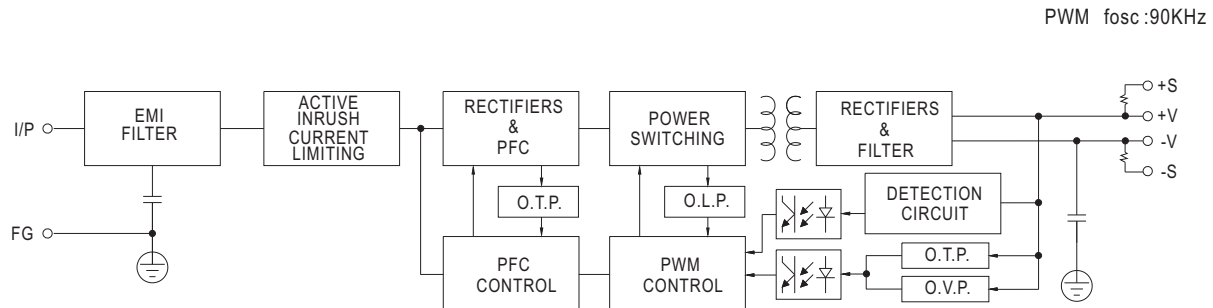
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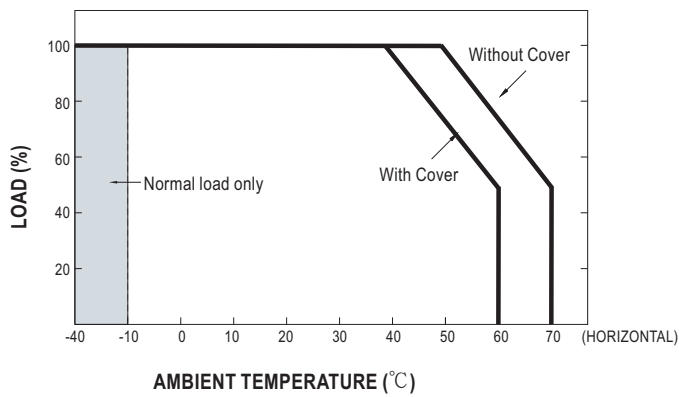
SPECIFICATION

MODEL		HRP-150N-12		HRP-150N-24		HRP-150N-36		HRP-150N-48	
OUTPUT	DC VOLTAGE	12V		24V		36V		48V	
	RATED CURRENT	13A		6.5A		4.3A		3.3A	
	CURRENT RANGE	0 ~ 13A		0 ~ 6.5A		0 ~ 4.3A		0 ~ 3.3A	
	RATED POWER	156W		156W		154.8W		158.4W	
	RIPPLE & NOISE (max.) Note.2	120mVp-p		150mVp-p		200mVp-p		240mVp-p	
	VOLTAGE ADJ. RANGE	10.2 ~ 13.8V		21.6 ~ 28.8V		28.8 ~ 39.6V		40.8 ~ 55.2V	
	VOLTAGE TOLERANCE Note.3	± 1.5%		± 1.5%		± 1.5%		± 1.5%	
	LINE REGULATION	± 0.3%		± 0.2%		± 0.2%		± 0.2%	
	LOAD REGULATION	± 0.5%		± 0.5%		± 0.5%		± 0.5%	
	SETUP, RISE TIME	3000ms, 50ms/230VAC				3000ms, 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>0.98/115VAC at full load					
	EFFICIENCY (Typ.)	88%		88%		89%		89%	
	AC CURRENT (Typ.)	1.7A/115VAC		0.9A/230VAC					
	INRUSH CURRENT (Typ.)	35A/115VAC		70A/230VAC					
	LEAKAGE CURRENT	<1mA / 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							
ENVIRONMENT	WORKING TEMP.	-40 ~ +70℃ (Refer to "Derating Curve")							
	WORKING HUMIDITY	20 ~ 90% RH non-condensing							
	STORAGE TEMP., HUMIDITY	-50 ~ +85℃, 10 ~ 95% RH							
	TEMP. COEFFICIENT	± 0.04%/℃ (0 ~ 50℃)							
	VIBRATION	10 ~ 500Hz, 5G 10min./1cycle, 60min. each along X, Y, Z axes							
	OPERATING ALTITUDE Note.6	5000 meters							
	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℃ / 70% RH								
SAFETY & EMC (Note 5)	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				-----		
	EMC IMMUNITY	BS EN/EN55035 , BS EN/EN61000-6-2(BS EN/EN50082-2)							
		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	1740.3K hrs min. Telcordia SR-332 (Bellcore) ; 221.7K hrs min. MIL-HDBK-217F (25℃)							
	DIMENSION	159*97*38mm (L*W*H)							
	PACKING	0.54Kg; 24pcs/12.96Kg/0.9CUFT							
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 0.1 μ F & 47 μ F 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 https://www.meanwell.com/Upload/PDF/EMI_statement_en.pdf) 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								

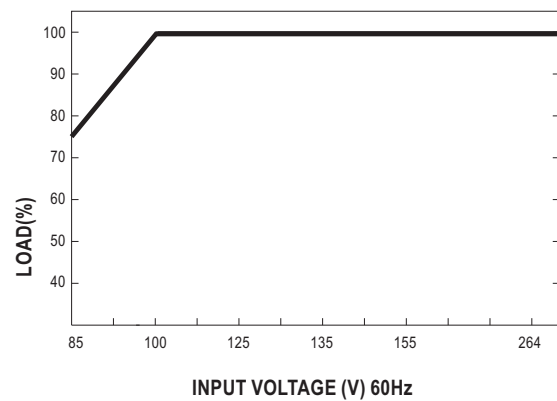
Block Diagram



Derating Curve



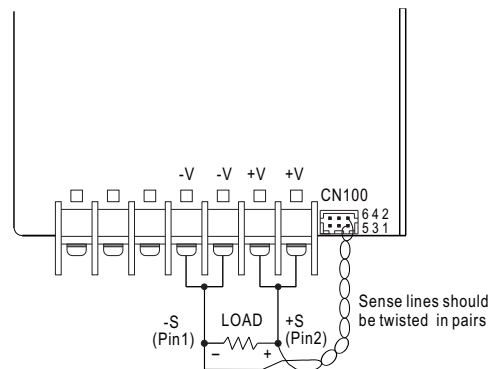
Output Derating VS Input Voltage



Function Manual

1.Remote Sense

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



CN100			
6	NC	NC	+S 2
5	NC	NC	-S 1

Fig 1.1

2. 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)

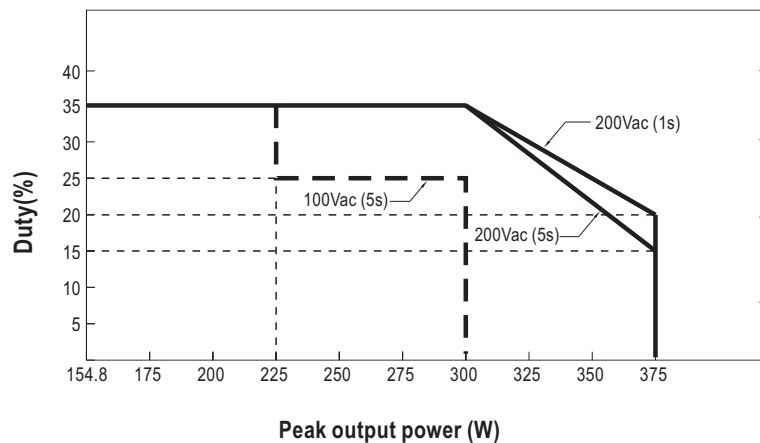
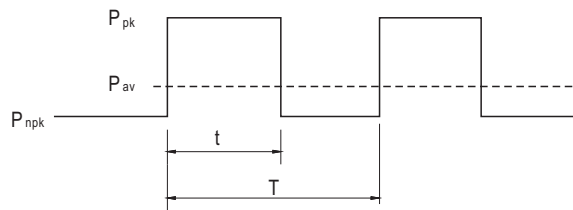
P_{pk} : Peak output power (W)

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) :

$V_{in} = 100V$ $\text{Duty_max} = 25\%$

$P_{av} = P_{rated} = 156W$

$P_{pk} = 300W$

$t \leq 5 \text{ sec}$

$T \geq 20 \text{ sec}$

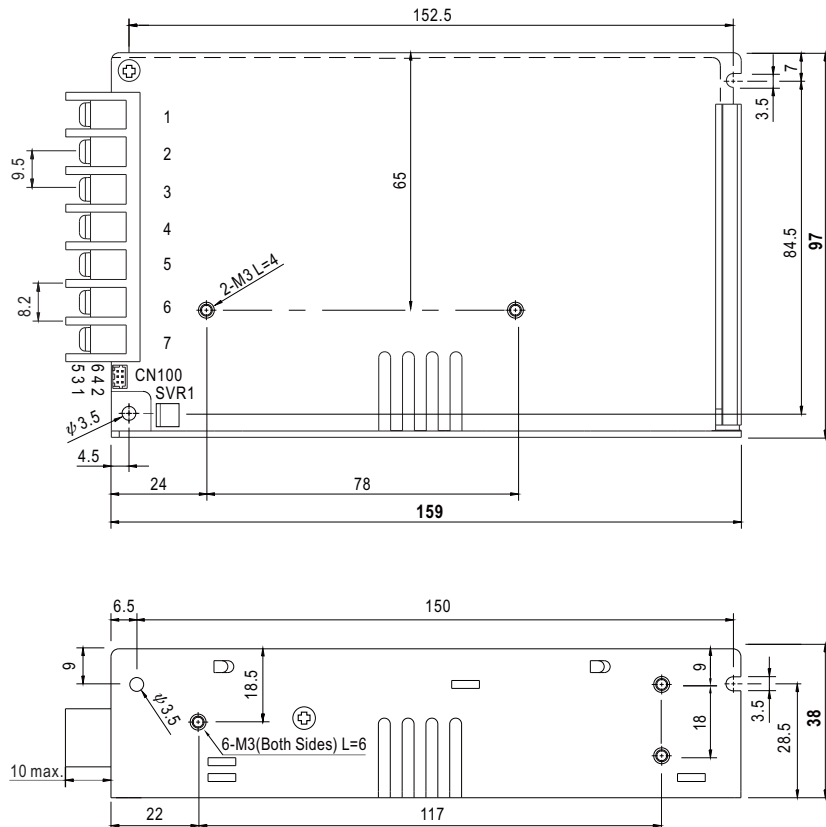
$$P_{av} = \frac{P_{pk} \times t + P_{npk} \times (T-t)}{T} = \frac{300 \times 5 + P_{npk} \times (20-5)}{20} \leq 156W$$

$$P_{npk} \leq 108W$$

Mechanical Specification

(Unit: mm , tolerance ± 1 mm)

Case No.9011



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 $\perp$		

Connector Pin No. Assignment (CN100) :

Pin No.	Assignment	Mating Housing	Terminal
1	-S	HRS DF11-6DS or equivalent	HRS DF11-**SC or equivalent
2	+S		
3-6	NC		

Installation Manual

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