



## ■ Features

- Universal AC input / Full range
- Withstand 300VAC surge input for 5 seconds
- 300% peak power capability
- Built-in constant current limiting circuit
- Fanless design, Cooling by free air convection
- Protections: Short circuit / Overload / Over voltage / Over temperature
- 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 38mm
- 5 years warranty

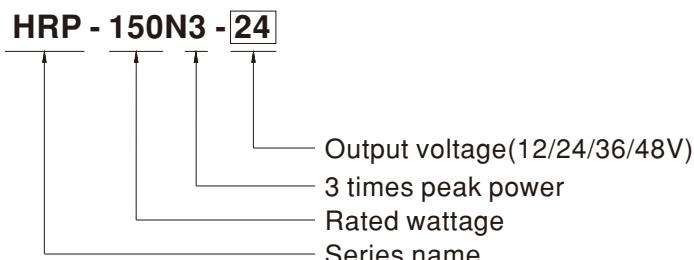
## ■ Applications

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

## ■ Description

HRP-150N3 series is a 150W 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 free air convection, working for the temperature up to 70°C without cover. Moreover, HRP-150N3 can provide 300% short-duration peak power for motor applications and electromechanical loads requiring much higher power during start-up.

## ■ Model Encoding





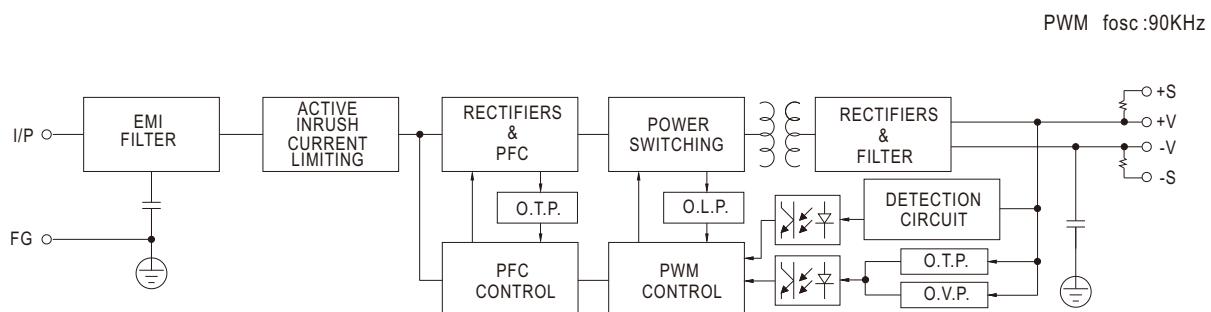
150W Ultra-High Peak Power Supply

HRP-150N3 series

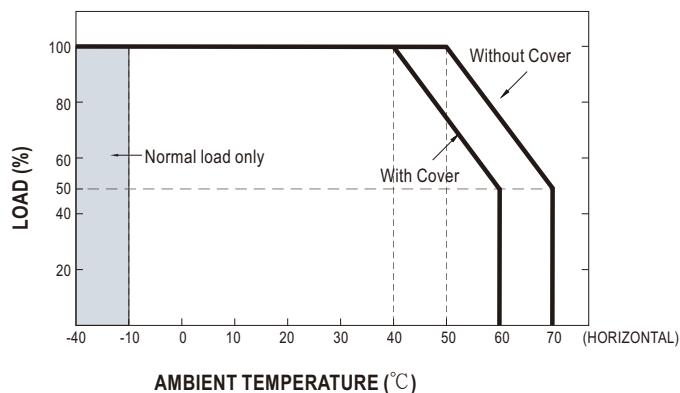
## SPECIFICATION

MODEL	HRP-150N3-12	HRP-150N3-24	HRP-150N3-36	HRP-150N3-48			
OUTPUT	DC VOLTAGE	12V	24V	36V			
	RATED CURRENT	13A	6.5A	4.3A			
	CURRENT RANGE	0 ~ 13A	0 ~ 6.5A	0 ~ 4.3A			
	RATED POWER	156W	156W	154.8W			
	RIPLE & NOISE (max.) Note.2	120mVp-p	150mVp-p	200mVp-p			
	VOLTAGE ADJ. RANGE	10.2 ~ 13.8V	21.6 ~ 28.8V	28.8 ~ 39.6V			
	VOLTAGE TOLERANCE Note.3	± 1.5%	± 1.5%	± 1.5%			
	LINE REGULATION	± 0.3%	± 0.2%	± 0.2%			
	LOAD REGULATION	± 0.5%	± 0.5%	± 0.5%			
INPUT	SETUP, RISE TIME	3000ms, 50ms/230VAC	3000ms, 50ms/115VAC at full load				
	HOLD UP TIME (Typ.)	16ms/230VAC	16ms/115VAC at full load				
PROTECTION	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%			
	AC CURRENT (Typ.)	1.7A/115VAC	0.9A/230VAC				
	INRUSH CURRENT (Typ.)	35A/115VAC	70A/230VAC				
ENVIRONMENT	LEAKAGE CURRENT	<1mA / 240VAC					
	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 >330% 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			
SAFETY & EMC (Note 6)	OVER TEMPERATURE	Protection type : Shut down o/p voltage, re-power on to recover					
	WORKING TEMP.	Shut down o/p voltage, recovers automatically after temperature goes down					
	WORKING HUMIDITY	-40 ~ +70°C (Refer to "Derating Curve")					
	STORAGE TEMP., HUMIDITY	20 ~ 90% RH non-condensing					
	TEMP. COEFFICIENT	-50 ~ +85°C, 10 ~ 95% RH non-condensing					
SAFETY & EMC (Note 6)	VIBRATION	± 0.04%/°C (0 ~ 50°C)					
	OPERATING ALTITUDE Note.5	10 ~ 500Hz, 5G 10min./1cycle, 60min. each along X, Y, Z axes					
	SAFETY STANDARDS	5000 meters					
	WITHSTAND VOLTAGE	UL62368-1, TUV BS EN/EN62368-1, EAC TP TC 004, AS/NZS 62368.1 approved					
	ISOLATION RESISTANCE	I/P-O/P: 3kVAC I/P-FG: 2kVAC O/P-FG: 0.5kVAC					
	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	----			
SAFETY & EMC (Note 6)	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	578.15K hrs min. Telcordia TR/SR-332 (Bellcore); 221.71K hrs min. MIL-HDBK-217F (25°C)					
	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°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 <a href="http://www.meanwell.com">http://www.meanwell.com</a> )						
	※ Product Liability Disclaimer : For detailed information, please refer to <a href="https://www.meanwell.com/serviceDisclaimer.aspx">https://www.meanwell.com/serviceDisclaimer.aspx</a>						

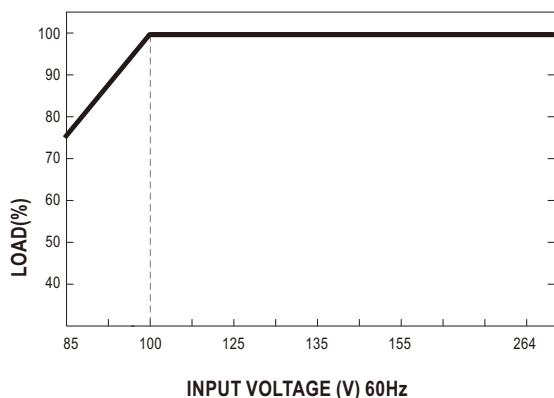
## ■ Block Diagram



## ■ Derating Curve



## ■ Output Derating VS Input Voltage



## ■ Function Manual

## 1. Peak Power

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

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

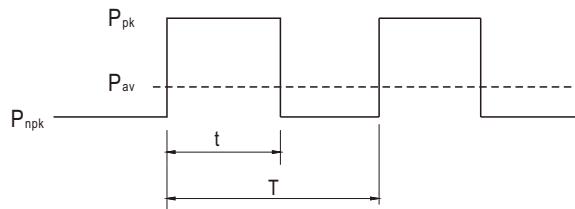
 $t \leq 5 \text{ sec}$ 
 $P_{av}$  : Average output power (W)

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

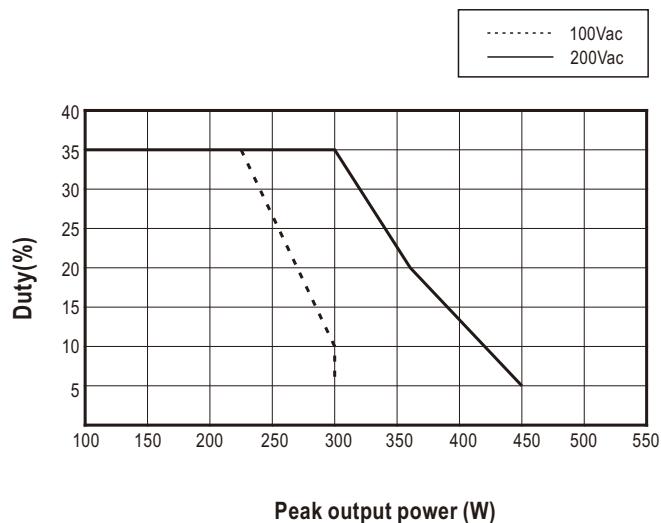
 $P_{npk}$  : Non-peak output power (W)

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

 $t$  : Peak power width (sec)

 $T$  : Period (sec)


(a) If 3 times peak is required, please see below figure ( $t \leq 5 \text{ sec}$ )



## For example (12V model) :

$$V_{in} = 200V \quad \text{Duty\_max} = 5\%$$

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

$$P_{pk} = 450W$$

$$t \leq 5 \text{ sec}$$

$$T \geq \frac{5 \text{ sec}}{5\%} \geq 100 \text{ sec}$$

$$P_{av} = \frac{P_{pk} \times t + P_{npk} \times (T-t)}{T} = \frac{450 \times 5 + P_{npk} (100-5)}{100} \leq 156W$$

$$P_{npk} \leq 140W$$

**2. Remote Sense**

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

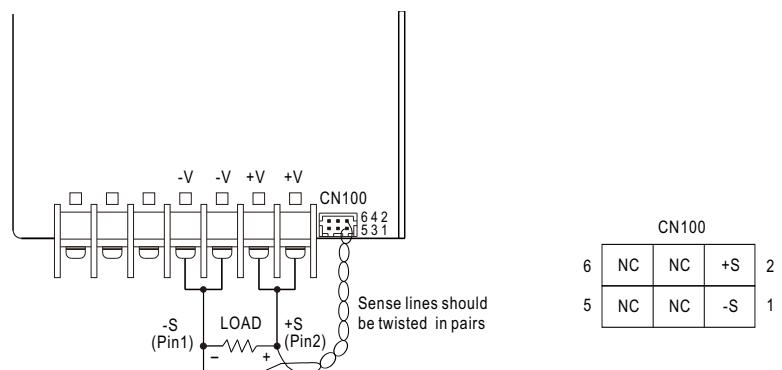
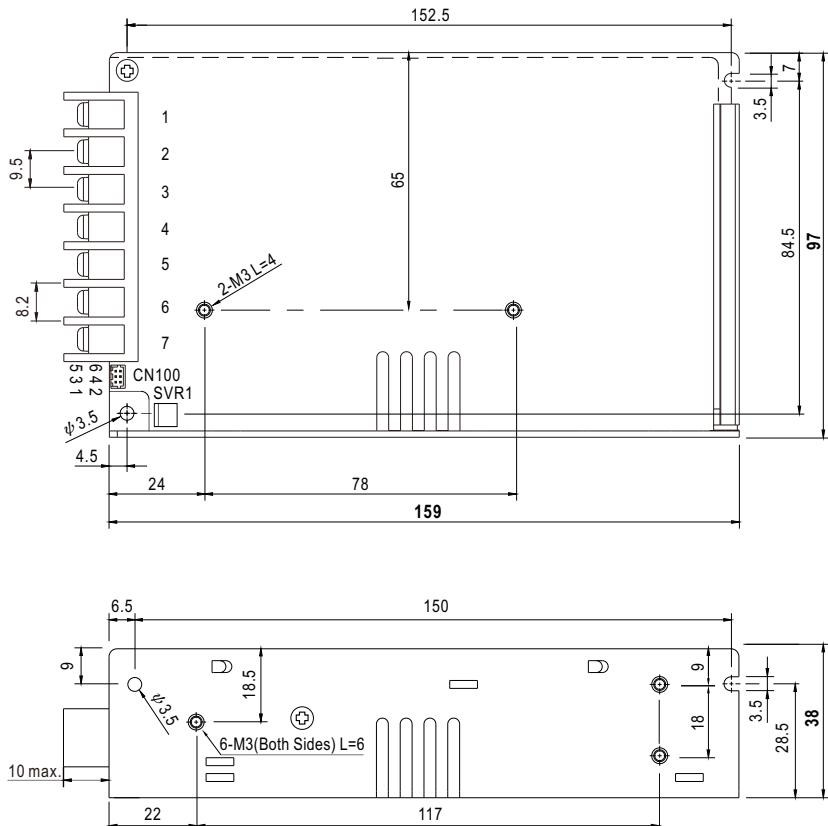


Fig 1.1

## ■ Mechanical Specification

Case No.9011 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 DF11-6DP-2DSA or equivalent

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

## ■ Installation Manual

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