600W Switching Power Supply for Harsh Environment HEP-600 series

User's Manual

IS 13252 (Note 8)

UL62368-1 BS EN/EN62368-1 TPTC004 IEC62368-1

Automate Industrial Security Network Telecom

Features

- Universal AC input / Full range
- Built-in active PFC function
- No load power consumption <0.5W at remote OFF
- High efficiency up to 96%
- Fanless design, cooling by free air convection
- -40 ~ +70℃ wide operating range
- Aluminum case and filling with heat-conducted glue
- Withstand 10G vibration test
- Output voltage and output current can be adjusted through internal potentiometer
- Protections: Short circuit / Over current / Over voltage / Over temperature
- LED indicator for power on
- Operating altitude up to 5000 meters (Note.7)
- 6 years warranty

Applications

- Outdoor telecommunication equipment
- Outdoor electronic signage and billboard
- Petroleum plant or mine shaft facility

GTIN CODE

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

Description

HEP-600 is a 600W industrial AC/DC power supply featuring the outstanding capability to operate under highly humid, dusty, oily, and high-vibration harsh environment. The entire series is housed with the aluminum case and fully potted with heat-conducted silicone. Thanks to state-of-the-art design, the working efficiency is up to 96%, enabling HEP-600 perfectly work between -40℃ and +70℃ under free air convection.

Model Encoding

HEP - 600 - 12

- 12 — Output voltage
- 600 — Output wattage
- HEP — Series name

SPECIFICATION

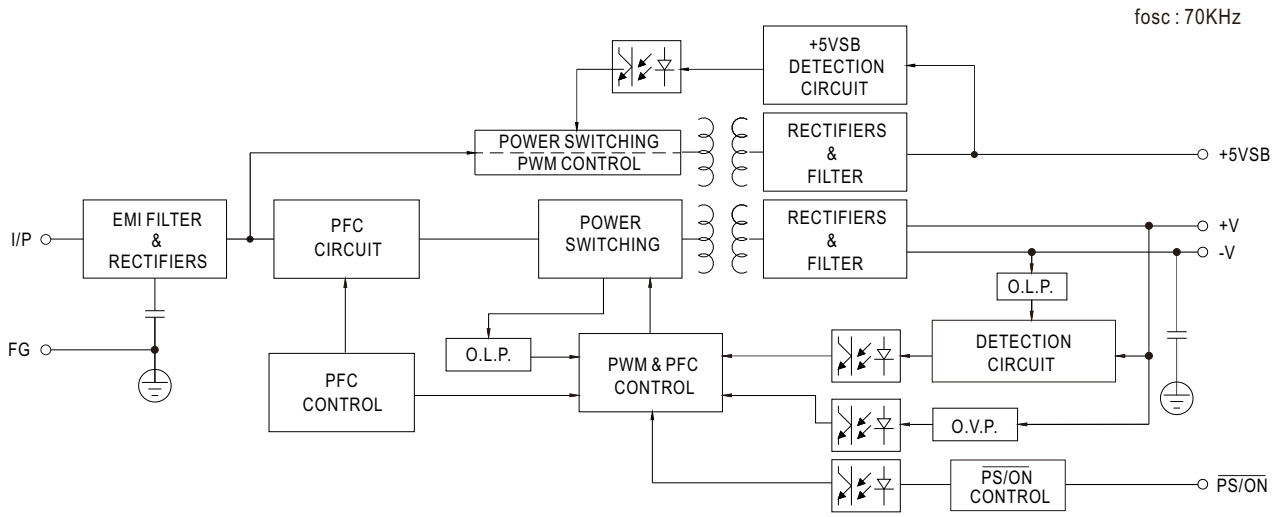
MODEL		HEP-600-12	HEP-600-15	HEP-600-20	HEP-600-24	HEP-600-30	HEP-600-36	HEP-600-42	HEP-600-48	HEP-600-54
OUTPUT	DC VOLTAGE	12V	15V	20V	24V	30V	36V	42V	48V	54V
	RATED CURRENT	40A	36A	28A	25A	20A	16.7A	14.3A	12.5A	11.2A
	RATED POWER	480W	540W	560W	600W	600W	601.2W	600.6W	600W	604.8W
	RIPPLE & NOISE (max.) Note.2	150mVp-p	150mVp-p	150mVp-p	150mVp-p	200mVp-p	250mVp-p	250mVp-p	250mVp-p	350mVp-p
	VOLTAGE ADJ. RANGE	10.2 ~ 12.6V	12.7 ~ 15.8V	17 ~ 21V	20.4 ~ 25.2V	25.5 ~ 31.5V	30.6 ~ 37.8V	35.7 ~ 44.1V	40.8 ~ 50.4V	45.9 ~ 56.7V
	CURRENT ADJ. RANGE	Can be adjusted by internal potentiometer								
		20 ~ 40A	18 ~ 36A	14 ~ 28A	12.5 ~ 25A	10 ~ 20A	8.3 ~ 16.7A	7.1 ~ 14.3A	6.2 ~ 12.5A	5.6 ~ 11.2A
	VOLTAGE TOLERANCE Note.3	±3.0%	±2.0%	±1.5%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%
	LINE REGULATION	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	LOAD REGULATION	±2.0%	±1.5%	±1.0%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	SETUP, RISE TIME Note.5	500ms, 80ms at full load 230VAC /115VAC								
	HOLD UP TIME (Typ.)	15ms at full load 230VAC /115VAC								
INPUT	VOLTAGE RANGE Note.4	90~264VAC(277VAC operational) 128~370VDC(390VDC operational)								
	FREQUENCY RANGE	47 ~ 63Hz								
	POWER FACTOR (Typ.)	PF>0.98/115VAC, PF>0.95/230VAC, PF>0.93/277VAC at full load								
	EFFICIENCY (Typ.)	93%	94%	95%	95%	95.5%	95.5%	96%	96%	96%
	AC CURRENT (Typ.)	7A / 115VAC 3.3A / 230VAC 2.9A / 277VAC								
	INRUSH CURRENT(Typ.)	COLD START 70A(t_{width}=1000μs measured at 50% I_{peak}) at 230VAC								
	LEAKAGE CURRENT	<0.75mA / 277VAC								
PROTECTION	OVER CURRENT	105 ~ 125%								
		Protection type : Constant current limiting, recovers automatically after fault condition is removed								
	SHORT CIRCUIT	Constant current limiting, recovers automatically after fault condition is removed								
	OVER VOLTAGE	13 ~ 16V	16.5 ~ 20.5V	22 ~ 26V	26 ~ 30V	32.5 ~ 36.5V	39.5 ~ 43.5V	46 ~ 50V	52.5 ~ 56.5V	59 ~ 63V
		Protection type : Shut down o/p voltage, re-power on to recover								
	OVER TEMPERATURE	Shut down o/p voltage, re-power on to recover								
FUNCTION	REMOTE ON/OFF CONTROL	Power on : "Hi" >2 ~ 5V or Open circuit Power off : "Low" <0 ~ 0.5V or Short circuit								
	5V STANDBY	$5V_{SB}$: 5V@0.5A ; tolerance ±5%, ripple : 100mVp-p(max.)								
ENVIRONMENT	WORKING TEMP.	-40 ~ +70℃ (Refer to "Derating Curve")								
	WORKING HUMIDITY	20 ~ 95% RH non-condensing								
	STORAGE TEMP., HUMIDITY	-40 ~ +85℃, 10 ~ 95% RH non-condensing								
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 60℃)								
	VIBRATION	20 ~ 500Hz, 10G 12min./1cycle, period for 72min. each along X, Y, Z axes								
SAFETY & EMC (Note.6)	SAFETY STANDARDS	UL62368-1,TUV BS EN/EN62368-1, EAC TP TC 004, BIS IS13252(Part1): 2010/IEC 60950-1:2005(NOTE 8) approved								
	WITHSTAND VOLTAGE	I/P-O/P:3.75KVAC I/P-FG:2KVAC O/P-FG:1.5KVAC								
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃/ 70% RH								
	EMC EMISSION	Compliance to BS EN/EN55032 (CISPR32) Class B, BS EN/EN61000-3-2,-3, EAC TP TC 020								
	EMC IMMUNITY	Compliance to BS EN/EN61000-4-2,3,4,5,6,8,11, BS EN/EN55024, heavy industry level, EAC TP TC 020								
OTHERS	MTBF	914.7K hrs min. Telcordia SR-332 (Bellcore) ; 76.9K hrs min. MIL-HDBK-217F (25℃)								
	DIMENSION	280*144*48.5mm (L*W*H)								
	PACKING	3.9Kg; 4pcs/16Kg/0.9CUFT								

NOTE

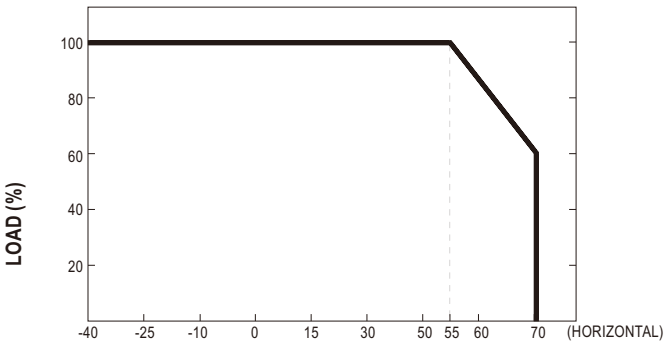
1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature.
2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.
3. Tolerance : includes set up tolerance, line regulation and load regulation.
4. Derating may be needed under low input voltages. Please check the static characteristics for more details.
5. Length of set up time is measured at cold first start. Turning ON/OFF the power supply may lead to increase of the set up time.
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 https://www.meanwell.com//Upload/PDF/EMI_statement_en.pdf)
7. 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).
8. Some model may not have the BIS logo, please contact your MEAN WELL sales for more information.

※ Product Liability Disclaimer： For detailed information, please refer to https://www.meanwell.com/serviceDisclaimer.aspx

■ Block Diagram

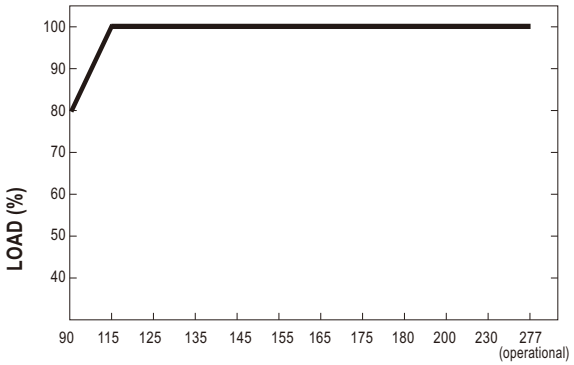


■ Derating Curve



AMBIENT TEMPERATURE (℃)

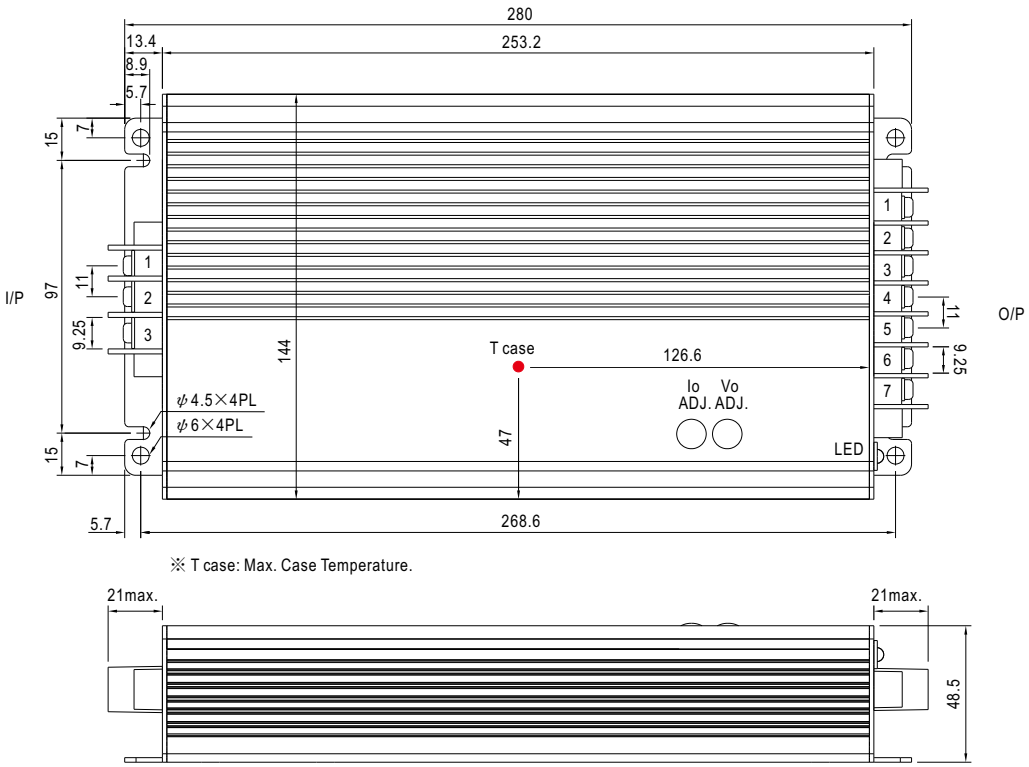
■ Static Characteristics



INPUT VOLTAGE (V) 60Hz

■ Mechanical Specification

Case No. 228A Unit:mm Tolerance:±1



※ T case: Max. Case Temperature.

※ Output voltage and constant current level can be adjusted through internal potentiometer.
(Can access by removing the rubber stopper on the case.)

AC Input Terminal Pin No. Assignment

Pin No.	Assignment
1	FG ⏚
2	AC/L
3	AC/N

DC Output Terminal Pin No. Assignment

Pin No.	Assignment	Pin No.	Assignment
1	RC+	4,5	-V
2	RC- & GND	6,7	+V
3	+5VSB		

■ Installation Manual

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