# 100W Switching Power Supply for Harsh Environment HEP-100 series

User's Manual
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IP65 IP68 (optional)

UL62368-1 TPTC004 IEC62368-1

Household Automate Industrial Security Network Telecom

## Features

- Universal AC input / Full range
- Built-in active PFC function
- High efficiency up to 93%
- Fanless design, cooling by free air convection
- -55~+70℃ wide operating range
- Aluminum case and filling with heat-conducted silicone
- IP65 design, optional IP68 rated model available
- Meet 6KV surge immunity level
- Withstand 10G vibration test
- Protections: Short circuit / Overload / Over voltage / Over temperature
- Operating altitude up to 5000 meters (Note.9)
- 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-100 is a 100W 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 93%, enabling HEP-100 perfectly work between -55℃ and +70℃ under free air convection.

## Model Encoding

HEP - 100 - 12 A

- Function mode option
  - A : Standard model, IP65, Vo and Io level can be adjusted through internal potentiometer.
  - Blank : Optional model, IP68, with fixed Vo and Io level.
- Output voltage
- Output wattage
- Series name

# 100W Switching Power Supply for Harsh Environment HEP-100 series

## SPECIFICATION

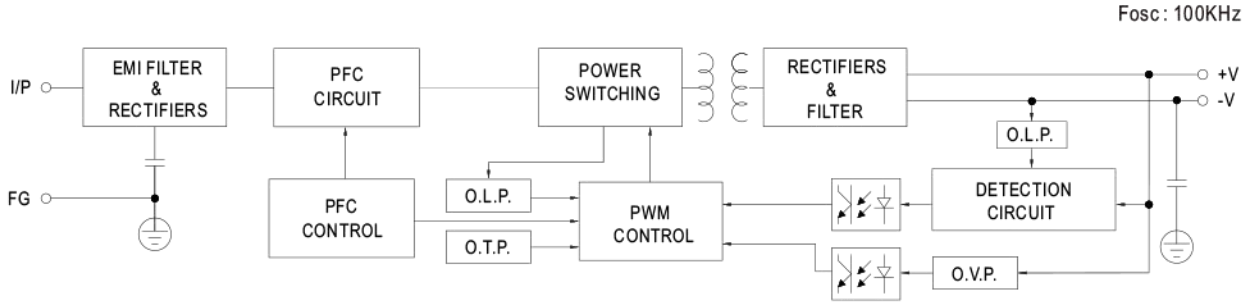
| MODEL | | HEP-100-12□ | HEP-100-15□ | HEP-100-24□ | HEP-100-36□ | HEP-100-48□ | HEP-100-54□ |
|---|---|---|---|---|---|---|---|
| OUTPUT | DC VOLTAGE | 12V | 15V | 24V | 36V | 48V | 54V |
| | RATED CURRENT | 8.34A | 6.67A | 4A | 2.65A | 2A | 1.77A |
| | RATED POWER | 100.08W | 100.05W | 96W | 95.4W | 96W | 95.58W |
| | RIPPLE & NOISE (max.) Note.2 | 120mVp-p | 150mVp-p | 150mVp-p | 200mVp-p | 200mVp-p | 200mVp-p |
| | VOLTAGE ADJ. RANGE Note.5 | 10.8 ~ 13.5V | 13.5 ~ 17V | 22 ~ 27V | 33 ~ 40V | 43 ~ 53V | 49 ~ 58V |
| | CURRENT ADJ. RANGE | Can be adjusted by internal potentiometer for A type only | | | | | |
| | | 5 ~ 8.34A | 4 ~ 6.67A | 2.5 ~ 4A | 1.65 ~ 2.65A | 1.25 ~ 2A | 1.1 ~ 1.77A |
| | VOLTAGE TOLERANCE Note.3 | ±2.0% | ±1.5% | ±1.0% | ±1.0% | ±1.0% | ±1.0% |
| | LINE REGULATION | ±0.5% | ±0.5% | ±0.5% | ±0.5% | ±0.5% | ±0.5% |
| | LOAD REGULATION | ±2.0% | ±1.5% | ±0.5% | ±0.5% | ±0.5% | ±0.5% |
| | SETUP, RISE TIME Note.7 | 1200ms,50ms/115VAC 500ms,50ms/230VAC at full load | | | | | |
| | HOLD UP TIME (Typ.) | 16ms 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>0.91/277VAC at full load | | | | | |
| | EFFICIENCY (Typ.) | 92% | 92% | 93% | 93% | 93% | 93% |
| | AC CURRENT (Typ.) | 1.2A / 115VAC 0.55A / 230VAC 0.5A / 277VAC | | | | | |
| | INRUSH CURRENT(Typ.) | COLD START 60A at 230VAC | | | | | |
| | LEAKAGE CURRENT | <0.75mA / 277VAC | | | | | |
| PROTECTION | OVERLOAD | 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 | 14 ~ 17V | 18 ~ 21V | 28 ~ 34V | 41 ~ 46V | 54 ~ 63V | 59 ~ 65V |
| | | Protection type : Shut down o/p voltage with auto-recovery or re-power on to recovery | | | | | |
| | OVER TEMPERATURE | Shut down o/p voltage, recovers automatically after temperature goes down | | | | | |
| ENVIRONMENT | WORKING TEMP. | -55 ~ +70℃ (Refer to "Derating Curve") | | | | | |
| | WORKING HUMIDITY | 20 ~ 95% RH non-condensing | | | | | |
| | STORAGE TEMP., HUMIDITY | -60 ~ +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 | SAFETY STANDARDS Note.6,9 | UL62368-1, IEC62368-1,IP65 (or IP68 for HEP-100 Blank type), EAC TP TC 004 approved ; Design refer to BS EN/EN62368-1 | | | | | |
| | 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/EN55035, light industry level (surge 6KV), EAC TP TC 020 | | | | | |
| OTHERS | MTBF | 1970.2K hrs min. Telcordia SR-332 (Bellcore) ; 164.8Khrs min. MIL-HDBK-217F (25℃) | | | | | |
| | DIMENSION | 220*68*38.8mm (L*W*H) | | | | | |
| | PACKING | 1.12Kg; 12pcs/14.4Kg/0.8CUFT | | | | | |

**NOTE**

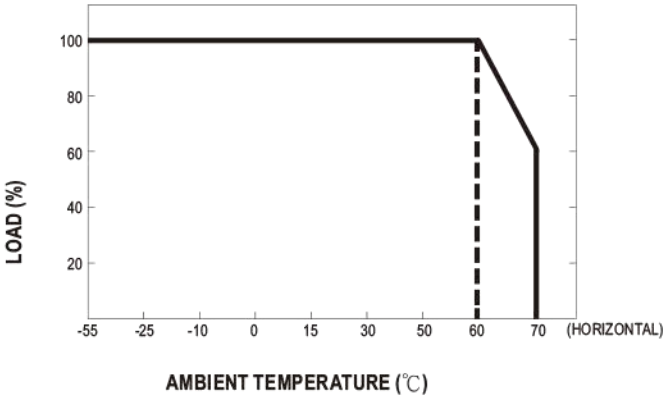
1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature.
2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.
3. Tolerance : includes set up tolerance, line regulation and load regulation.
4. Derating may be needed under low input voltages. Please check the static characteristics for more details.
5. A type only.
6. Safety and EMC design refer to BS EN/EN60598-1, CNS15233, GB7000.1, FCC part18.
7. 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.
8. The power supply is considered as a component that will be operated in combination with final equipment. Since EMC performance will be affected by the complete installation, the final equipment manufacturers must re-qualify EMC Directive on the complete installation again.
   (as available on https://www.meanwell.com//Upload/PDF/EMI_statement_en.pdf)
9. The water protection level test for the IP68 rating is performed 1000mm below the surface of the water for 1 month.
10. 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

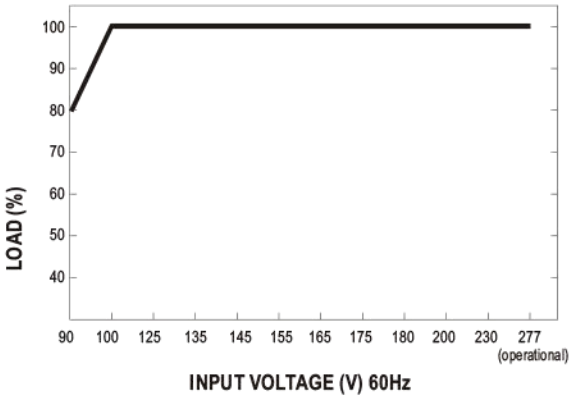
## ■ Block Diagram




## ■ Derating Curve



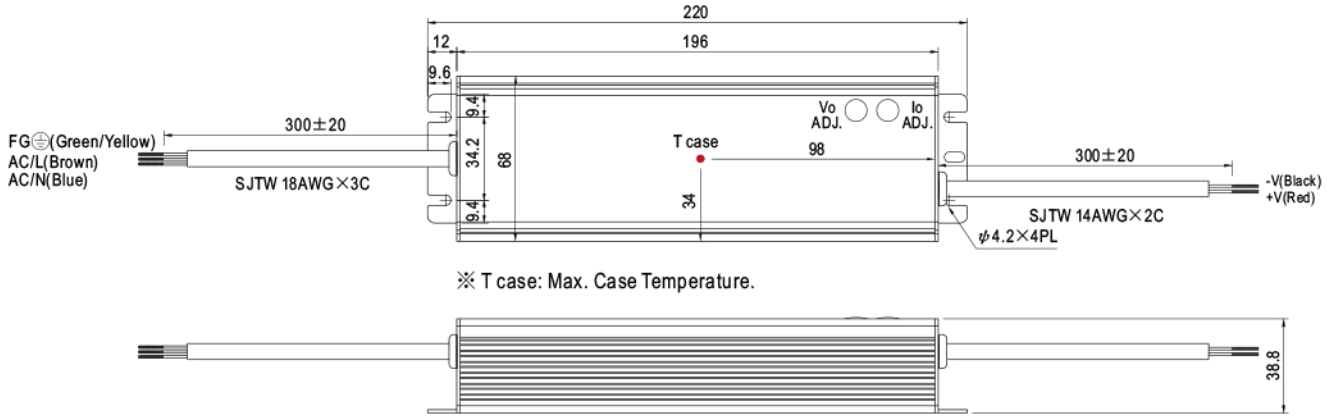

## ■ Static Characteristics



## ■ Mechanical Specification

Case No.994A Unit:mm Tolerance:±1

**A Type: HEP-100-_A(standard model)**

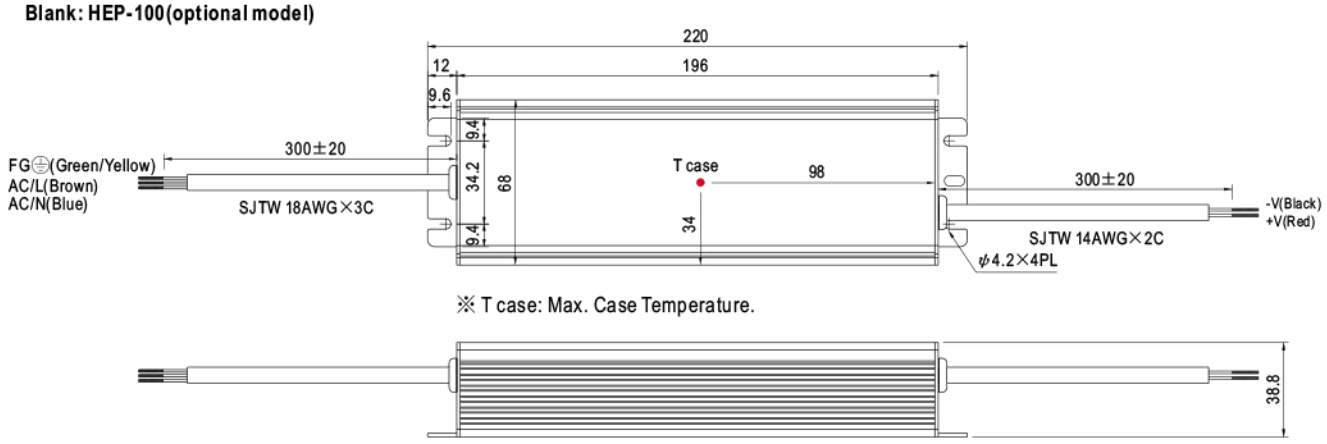



※ T case: Max. Case Temperature.




※ IP65 rated. Output voltage and constant current level can be adjusted through internal potentiometer.
(Can access by removing the rubber stopper on the case.)

**Blank: HEP-100(optional model)**




※ T case: Max. Case Temperature.




※IP68 rated. Cable for I/O connection.

## ■ Installation Manual

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