



## 150W Single Output with PFC Function

# HRP-150 series



### ■ Features :

- Universal AC input / Full range
- Built-in active PFC function, PF>0.95
- 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
- Built-in constant current limiting circuit
- 1U low profile 38mm
- Built-in remote sense function
- 5 years warranty

User's Manual



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

### SPECIFICATION

| MODEL                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | HRP-150-3.3                                                                                                                           | HRP-150-5  | HRP-150-7.5 | HRP-150-12   | HRP-150-15   | HRP-150-24   | HRP-150-36   | HRP-150-48   |
|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|------------|-------------|--------------|--------------|--------------|--------------|--------------|
| OUTPUT                   | DC VOLTAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 3.3V                                                                                                                                  | 5V         | 7.5V        | 12V          | 15V          | 24V          | 36V          | 48V          |
|                          | RATED CURRENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 30A                                                                                                                                   | 26A        | 20A         | 13A          | 10A          | 6.5A         | 4.3A         | 3.3A         |
|                          | CURRENT RANGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 0 ~ 30A                                                                                                                               | 0 ~ 26A    | 0 ~ 20A     | 0 ~ 13A      | 0 ~ 10A      | 0 ~ 6.5A     | 0 ~ 4.3A     | 0 ~ 3.3A     |
|                          | RATED POWER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 99W                                                                                                                                   | 130W       | 150W        | 156W         | 150W         | 156W         | 154.8W       | 158.4W       |
|                          | RIPPLE & NOISE (max.) Note.2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 80mVp-p                                                                                                                               | 80mVp-p    | 100mVp-p    | 120mVp-p     | 150mVp-p     | 150mVp-p     | 200mVp-p     | 240mVp-p     |
|                          | VOLTAGE ADJ. RANGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 2.8 ~ 3.8V                                                                                                                            | 4.3 ~ 5.8V | 6.8 ~ 9V    | 10.2 ~ 13.8V | 13.5 ~ 18V   | 21.6 ~ 28.8V | 28.8 ~ 39.6V | 40.8 ~ 55.2V |
|                          | VOLTAGE TOLERANCE Note.3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | ± 2.5%                                                                                                                                | ± 2.5%     | ± 2.5%      | ± 1.5%       | ± 1.5%       | ± 1.5%       | ± 1.5%       | ± 1.5%       |
|                          | LINE REGULATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | ± 0.5%                                                                                                                                | ± 0.5%     | ± 0.5%      | ± 0.3%       | ± 0.3%       | ± 0.2%       | ± 0.2%       | ± 0.2%       |
|                          | LOAD REGULATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | ± 1.0%                                                                                                                                | ± 1.0%     | ± 1.0%      | ± 0.5%       | ± 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.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 85 ~ 264VAC      120 ~ 370VDC                                                                                                         |            |             |              |              |              |              |              |
|                          | FREQUENCY RANGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 47 ~ 63Hz                                                                                                                             |            |             |              |              |              |              |              |
|                          | POWER FACTOR (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | PF>0.95/230VAC      PF>0.99/115VAC at full load                                                                                       |            |             |              |              |              |              |              |
|                          | EFFICIENCY (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 78.5%                                                                                                                                 | 85%        | 87%         | 88%          | 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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 105 ~ 135% rated output power<br>Protection type : Constant current limiting, recovers automatically after fault condition is removed |            |             |              |              |              |              |              |
|                          | OVER VOLTAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 3.96 ~ 4.62V                                                                                                                          | 6 ~ 7V     | 9.4 ~ 10.9V | 14.4 ~ 16.8V | 18.8 ~ 21.8V | 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                                                                          |            |             |              |              |              |              |              |
| SAFETY & EMC<br>(Note 4) | SAFETY STANDARDS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | UL62368-1, TUV BS EN/EN62368-1, AS/NZS62368.1, EAC TP TC 004 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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 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, BS EN/EN61000-6-2, heavy industry level, criteria A, EAC TP TC 020       |            |             |              |              |              |              |              |
| OTHERS                   | MTBF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 238.8K hrs min.      MIL-HDBK-217F (25℃)                                                                                              |            |             |              |              |              |              |              |
|                          | DIMENSION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 159*97*38mm (L*W*H)                                                                                                                   |            |             |              |              |              |              |              |
|                          | PACKING                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 0.61Kg; 24pcs/15.6Kg/0.9CUFT                                                                                                          |            |             |              |              |              |              |              |
| NOTE                     | 1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature.<br>2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.<br>3. Tolerance : includes set up tolerance, line regulation and load regulation.<br>4. 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> )<br>5. Derating may be needed under low input voltages. Please check the derating curve for more details.<br>6. Strongly recommended that external output capacitance should not exceed 5000uF. (Only for: HRP-150-3.3/-5/-7.5/-12/-15)<br>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).<br>※ Product Liability Disclaimer : For detailed information, please refer to <a href="https://www.meanwell.com/serviceDisclaimer.aspx">https://www.meanwell.com/serviceDisclaimer.aspx</a> |                                                                                                                                       |            |             |              |              |              |              |              |

## Mechanical Specification

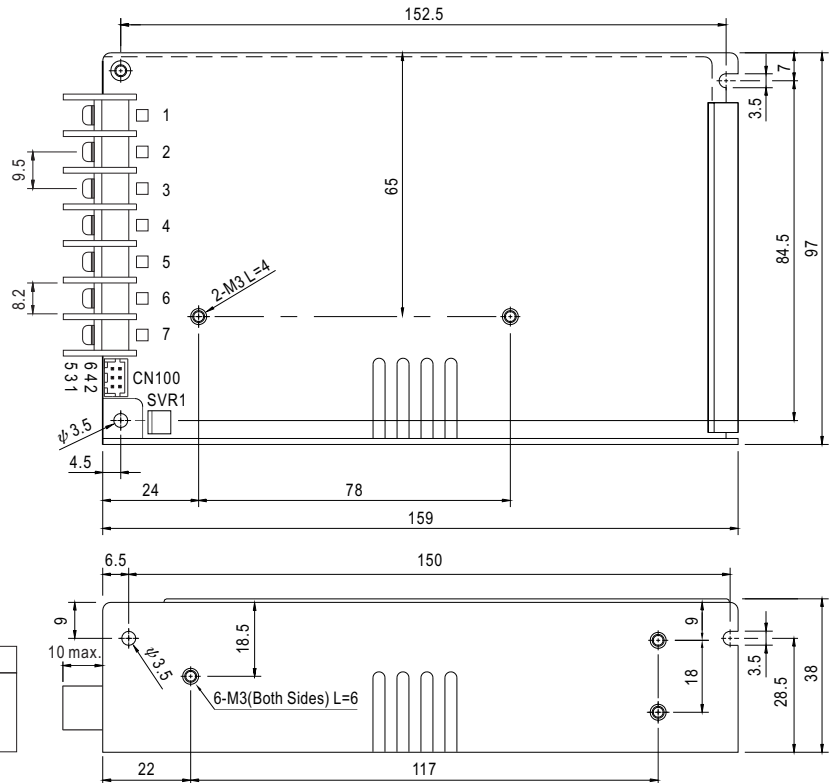
Case No.901I Unit:mm

### Terminal Pin No. Assignment :

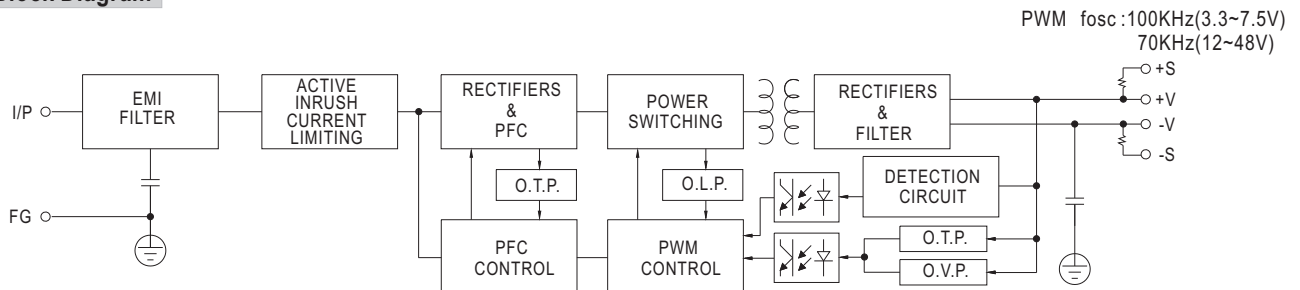
| Pin No. | Assignment | Pin No. | Assignment   |
|---------|------------|---------|--------------|
| 1       | AC/L       | 4,5     | DC OUTPUT -V |
| 2       | AC/N       | 6,7     | DC OUTPUT +V |
| 3       | FG $\perp$ |         |              |

### Connector Pin No. Assignment (CN100) :

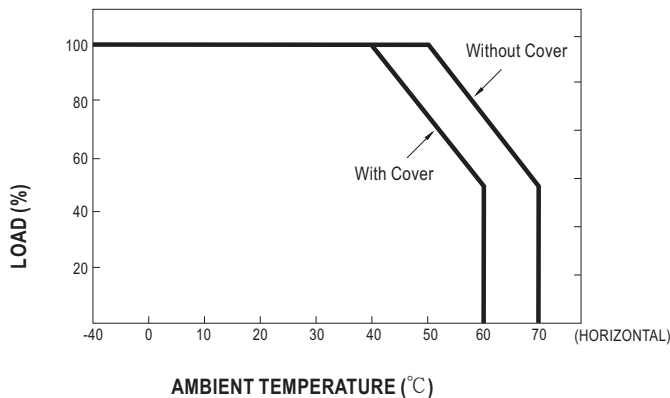
| Pin No. | Assignment | Mating Housing             | Terminal                    |
|---------|------------|----------------------------|-----------------------------|
| 1       | -S         | HRS DF11-6DS or equivalent | HRS DF11-**SC or equivalent |
| 2       | +S         |                        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



## Block Diagram



## Derating Curve



## Output Derating VS Input Voltage

