



**■ Features**

- AC input range selectable by switch
- Withstand 300VAC surge input for 5 second
- No load power consumption < 0.5W
- Miniature size and 1U low profile
- High operating temperature up to 70°C
- Protections: Short circuit / Overload / Over voltage / Over temperature
- Cooling by free air convection
- Compliance to IEC/EN 60335-1(PD3) and IEC/EN61558-1, 2-16 for household appliances
- Operating altitude up to 5000 meters
- Withstand 5G vibration test
- High efficiency, long life and high reliability
- LED indicator for power on
- Over voltage category III
- 100% full load burn-in test
- 3 years warranty

**■ Applications**

- Industrial automation machinery
- Industrial control system
- Mechanical and electrical equipment
- Electronic instruments, equipments or apparatus
- Household appliances

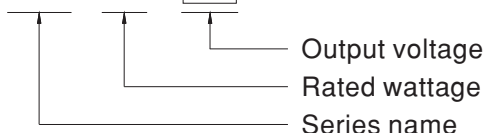
**■ Description**

LRS-150 series is a 150W single-output enclosed type power supply with 30mm of low profile design. Adopting the input of 115VAC or 230VAC(selectable by switch), the entire series provides an output voltage line of 12V, 15V, 24V, 36V and 48V.

In addition to the high efficiency up to 90%, the design of metallic mesh case enhances the heat dissipation of LRS-150 that the whole series operates from -30°C through 70°C under air convection without a fan. Delivering an extremely low no load power consumption (less than 0.5W), it allows the end system to easily meet the worldwide energy requirement. LRS-150 has the complete protection functions and 5G anti-vibration capability; it is complied with the international safety regulations such as TUV EN62368-1, EN60335-1, EN61558-1/-2-16, UL62368-1 and GB4943. LRS-150 series serves as a high price-to-performance power supply solution for various industrial applications.

**■ Model Encoding**

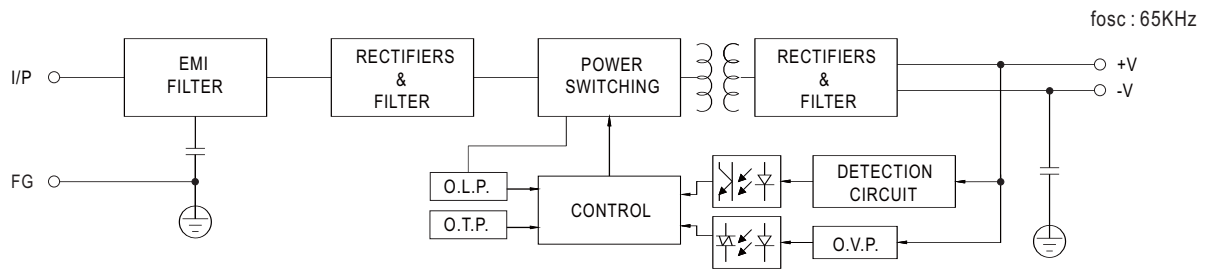
LRS - 150 - 12



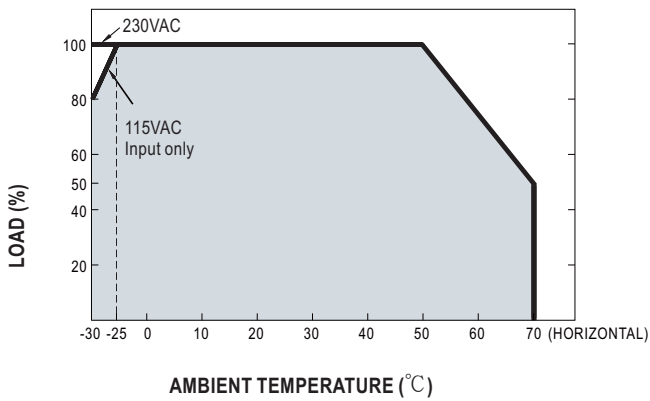
**SPECIFICATION**

| MODEL                 |  | LRS-150-12  | LRS-150-15     | LRS-150-24   | LRS-150-36   | LRS-150-48   |
|-----------------------|--|---|----------------|--------------|--------------|--------------|
| OUTPUT                | DC VOLTAGE   | 12V   | 15V            | 24V          | 36V          | 48V          |
|                       | RATED CURRENT  | 12.5A   | 10A            | 6.5A         | 4.3A         | 3.3A         |
|                       | CURRENT RANGE  | 0 ~ 12.5A   | 0 ~ 10A        | 0 ~ 6.5A     | 0 ~ 4.3A     | 0 ~ 3.3A     |
|                       | RATED POWER  | 150W  | 150W           | 156W         | 154.8W       | 158.4W       |
|                       | RIPPLE & NOISE (max.) Note.2   | 150mVp-p  | 150mVp-p       | 200mVp-p     | 200mVp-p     | 200mVp-p     |
|                       | VOLTAGE ADJ. RANGE   | 10.2 ~ 13.8V  | 13.5 ~ 18V     | 21.6 ~ 28.8V | 32.4 ~ 39.6V | 43.2 ~ 52.8V |
|                       | VOLTAGE TOLERANCE Note.3   | ±1.0%   | ±1.0%          | ±1.0%        | ±1.0%        | ±1.0%        |
|                       | LINE REGULATION Note.4   | ±0.5%   | ±0.5%          | ±0.5%        | ±0.5%        | ±0.5%        |
|                       | LOAD REGULATION Note.5   | ±0.5%   | ±0.5%          | ±0.5%        | ±0.5%        | ±0.5%        |
|                       | SETUP, RISE TIME   | 500ms, 30ms/230VAC    500ms,30ms/115VAC at full load  |                |              |              |              |
| HOLD UP TIME (Typ.)   | 40ms/230VAC    35ms/115VAC at full load  |   |                |              |              |              |
| INPUT                 | VOLTAGE RANGE  | 85 ~ 132VAC / 170 ~ 264VAC by switch    240 ~ 370VDC(switch on 230VAC)  |                |              |              |              |
|                       | FREQUENCY RANGE  | 47 ~ 63Hz   |                |              |              |              |
|                       | EFFICIENCY (Typ.)  | 87.5%   | 88.5%          | 89%          | 89%          | 90%          |
|                       | AC CURRENT (Typ.)  | 3A/115VAC    1.7A/230VAC  |                |              |              |              |
|                       | INRUSH CURRENT (Typ.)  | COLD STAR 60A/230VAC  |                |              |              |              |
|                       | LEAKAGE CURRENT  | <0.75mA / 240VAC  |                |              |              |              |
| PROTECTION            | OVER LOAD  | 110 ~ 140% rated output power<br>Protection type : Hiccup mode, recovers automatically after fault condition is removed   |                |              |              |              |
|                       | OVER VOLTAGE   | 13.8 ~ 16.2V  | 18.75 ~ 21.75V | 28.8 ~ 33.6V | 41.4 ~ 48.6V | 55.2 ~ 64.8V |
|                       |  | Protection type : Shut down o/p voltage, re-power on to recover   |                |              |              |              |
|                       | OVER TEMPERATURE   | Shut down o/p voltage, re-power on to recover   |                |              |              |              |
| ENVIRONMENT           | WORKING TEMP.  | -30 ~ +70°C (Refer to "Derating Curve")   |                |              |              |              |
|                       | WORKING HUMIDITY   | 20 ~ 90% RH non-condensing  |                |              |              |              |
|                       | STORAGE TEMP., HUMIDITY  | -40 ~ +85°C, 10 ~ 95% RH non-condensing   |                |              |              |              |
|                       | TEMP. COEFFICIENT  | ±0.03%/°C (0 ~ 50°C)  |                |              |              |              |
|                       | VIBRATION  | 10 ~ 500Hz, 5G 10min./1cycle, 60min. each along X, Y, Z axes  |                |              |              |              |
|                       | OVER VOLTAGE CATEGORY  | III ; Compliance to EN61558, EN50178, EN60664-1, EN62477-1; altitude up to 2000 meters  |                |              |              |              |
| SAFETY & EMC (Note 7) | SAFETY STANDARDS   | UL62368-1, TUV EN62368-1, EN60335-1, EN61558-1/-2-16, CCC GB4943.1, BSMI CNS14336-1, EAC TP TC 004, KC K60950-1(for LRS-150-12 only) ,AS/NZS 62368.1(by CB) approved      |                |              |              |              |
|                       | WITHSTAND VOLTAGE  | I/P-O/P:4KVAC    I/P-FG:2KVAC    O/P-FG:1.25KVAC  |                |              |              |              |
|                       | ISOLATION RESISTANCE   | I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25°C / 70% RH  |                |              |              |              |
|                       | EMC EMISSION   | Compliance to EN55032 (CISPR32) Class B, EN55014, EN61000-3-2 Class A(≤75% Load),EN61000-3-3, GB/T 9254, BSMI CNS13438, EAC TP TC 020, KC KN32, KN35(for LRS-150-12 only) |                |              |              |              |
|                       | EMC IMMUNITY   | Compliance to EN61000-4-2,3,4,5,6,8,11, EN61000-6-2 (EN50082-2), heavy industry level, criteria A, EAC TP TC 020, KC KN32, KN35(for LRS-150-12 only)                      |                |              |              |              |
| OTHERS                | MTBF   | 601K hrs min.    MIL-HDBK-217F (25°C)   |                |              |              |              |
|                       | DIMENSION  | 159*97*30mm (L*W*H)   |                |              |              |              |
|                       | PACKING  | 0.48Kg ; 30pcs/15.4Kg/0.75CUFT  |                |              |              |              |
| NOTE                  | <ol style="list-style-type: none"> <li>All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.</li> <li>Ripple &amp; noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf &amp; 47uf parallel capacitor.</li> <li>Tolerance : includes set up tolerance, line regulation and load regulation.</li> <li>Line regulation is measured from low line to high line at rated load.</li> <li>Load regulation is measured from 0% to 100% rated load.</li> <li>Length of set up time is measured at cold first start. Turning ON/OFF the power supply very quickly may lead to increase of the set up time.</li> <li>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>)</li> <li>The ambient temperature derating of 5°C/1000m is needed for operating altitude greater than 2000m (6500ft).</li> </ol> |   |                |              |              |              |

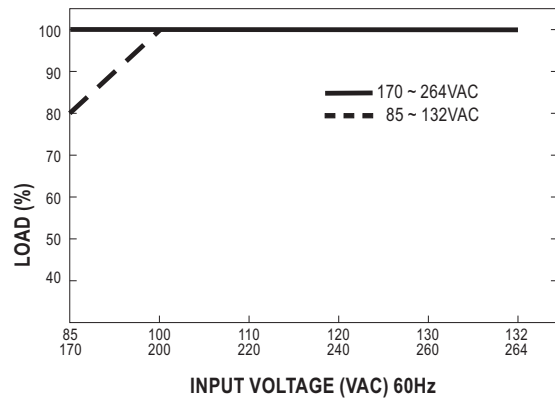
■ Block Diagram



■ Derating Curve

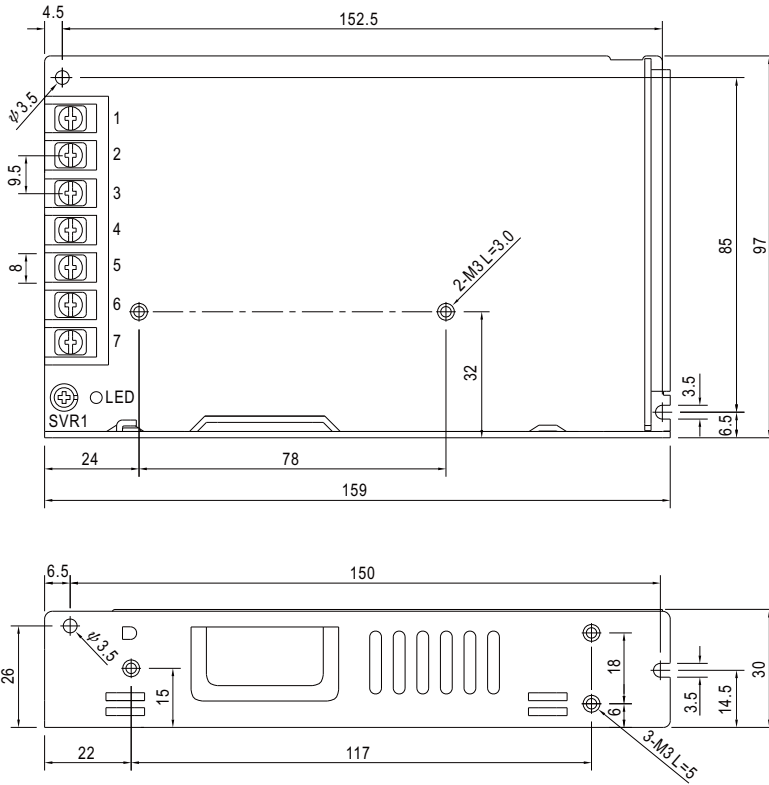


■ Static Characteristics



■ Mechanical Specification

Case No.241A 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 $\perp$ |         |              |

■ Installation Manual

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