



150W Single Output Switching Power Supply

LRS-150F series



■ Features

- Universal AC input / Full range
- 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

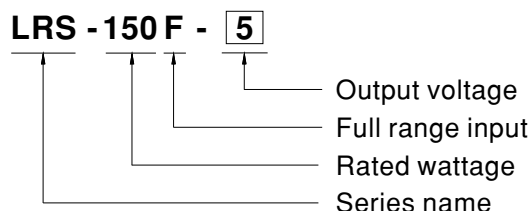
- Industrial automation machinery
- Industrial control system
- Mechanical and electrical equipment
- Electronic instruments, equipments or apparatus
- Household appliances

■ Description

LRS-150F series is a 150W single-output enclosed type power supply with 30mm of low profile design. Adopting the full range 85~264VAC input, the entire series provides an output voltage line of 5V, 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-150F 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-150F has the complete protection functions and 5G anti-vibration capability; it is complied with the international safety regulations such as TUV EN60950-1, EN60335-1, EN61558-1/-2-16, UL60950-1 and GB4943. LRS-150F series serves as a high price-to-performance power supply solution for various industrial applications.

■ Model Encoding





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SPECIFICATION

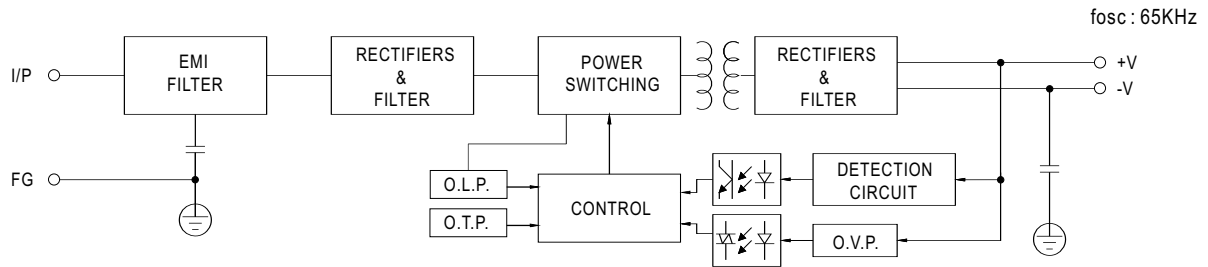
| MODEL | | LRS-150F-5 | LRS-150F-12 | LRS-150F-15 | LRS-150F-24 | LRS-150F-36 | LRS-150F-48 |
|-----------------------|---|--|--------------|----------------|--------------|--------------|--------------|
| OUTPUT | DC VOLTAGE | 5V | 12V | 15V | 24V | 36V | 48V |
| | RATED CURRENT | 22A | 12.5A | 10A | 6.5A | 4.3A | 3.3A |
| | CURRENT RANGE | 0 ~ 22A | 0 ~ 12.5A | 0 ~ 10A | 0 ~ 6.5A | 0 ~ 4.3A | 0 ~ 3.3A |
| | RATED POWER | 110W | 150W | 150W | 156W | 154.8W | 158.4W |
| | RIPPLE & NOISE (max.) Note.2 | 100mVp-p | 150mVp-p | 150mVp-p | 200mVp-p | 200mVp-p | 200mVp-p |
| | VOLTAGE ADJ. RANGE | 4.5 ~ 5.5V | 10.2 ~ 13.8V | 13.5 ~ 18V | 21.6 ~ 28.8V | 32.4 ~ 39.6V | 43.2 ~ 52.8V |
| | VOLTAGE TOLERANCE Note.3 | ±2.0% | ±1.0% | ±1.0% | ±1.0% | ±1.0% | ±1.0% |
| | LINE REGULATION Note.4 | ±0.5% | ±0.5% | ±0.5% | ±0.5% | ±0.5% | ±0.5% |
| | LOAD REGULATION Note.5 | ±1.0% | ±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.) | 16ms/230VAC 12ms/115VAC at full load | | | | | | |
| INPUT | VOLTAGE RANGE | 85 ~ 264VAC 120 ~ 370VDC | | | | | |
| | FREQUENCY RANGE | 47 ~ 63Hz | | | | | |
| | EFFICIENCY (Typ.) | 85% | 87.5% | 89% | 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 Protection type : Hiccup mode, recovers automatically after fault condition is removed | | | | | |
| | OVER VOLTAGE | 5.75 ~ 6.75V | 13.8 ~ 16.2V | 18.75 ~ 21.75V | 28.8 ~ 33.6V | 41.4 ~ 48.6V | 55.2 ~ 64.8V |
| | 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 | UL60950-1, TUV EN60950-1, EN60335-1, EN61558-1/-2-16, CCC GB4943.1, BSMI CNS14336-1, EAC TP TC004, AS/NZS 60950.1 (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(≤80% Load), EN61000-3-3, GB/T 9254, BSMI CNS13438, EAC TP TC 020 | | | | | |
| | 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 | | | | | |
| OTHERS | MTBF | 648.6K hrs min. MIL-HDBK-217F (25°C) | | | | | |
| | DIMENSION | 159*97*30mm (L*W*H) | | | | | |
| | PACKING | 0.48Kg ; 30pcs/15.4Kg/0.75CUFT | | | | | |
| NOTE | <p>1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.</p> <p>2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.</p> <p>3. Tolerance : includes set up tolerance, line regulation and load regulation.</p> <p>4. Line regulation is measured from low line to high line at rated load.</p> <p>5. Load regulation is measured from 0% to 100% rated load.</p> <p>6. 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.</p> <p>9. 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 http://www.meanwell.com)</p> <p>8. The ambient temperature derating of 5°C/1000m is needed for operating altitude greater than 2000m (6500ft).</p> | | | | | | |



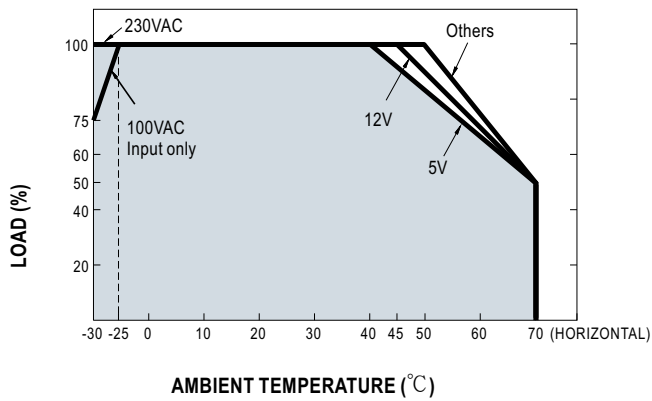
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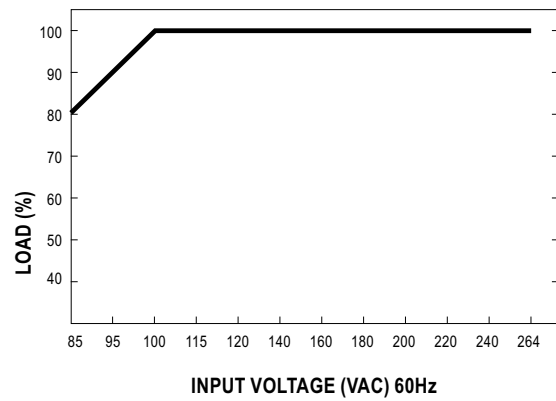
■ Block Diagram



■ Derating Curve



■ Static Characteristics



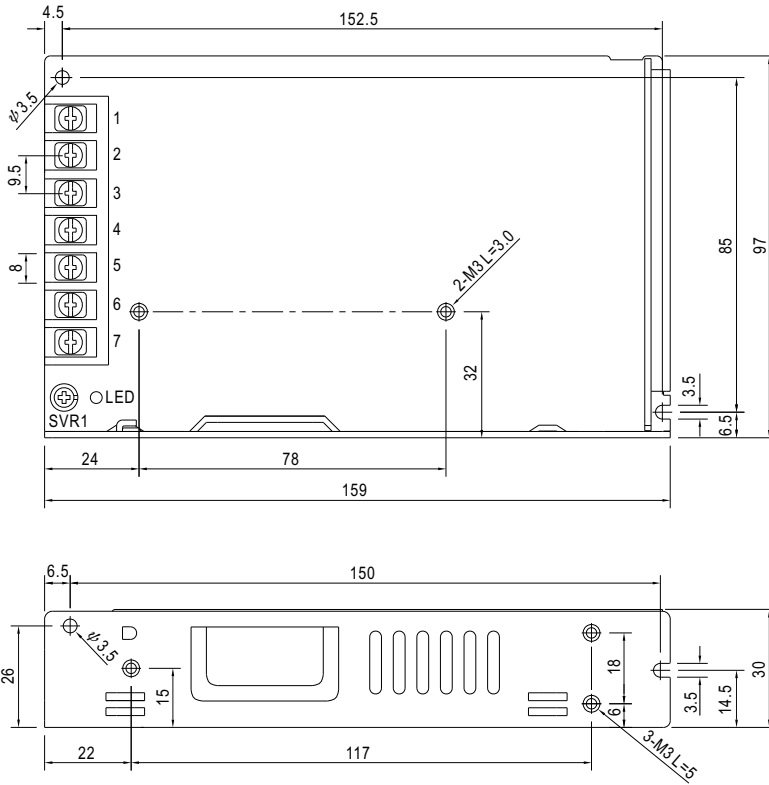


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Mechanical Specification

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>