



# 150W Single Output Power Supply

# LRS-150W Series



## ■ Feature :

- Universal AC input / Full range
- Withstand 300VAC surge input for 5 second
- Small volume and light weight
- Protections: Short circuit / Overload / Over voltage
- Cooling by free air convection
- Low power dissipation
- Operating altitude up to 5000 meters (Note.6)
- LED indicator for power on
- 100% full load burn-in test
- High efficiency, long life and high reliability

## SPECIFICATION

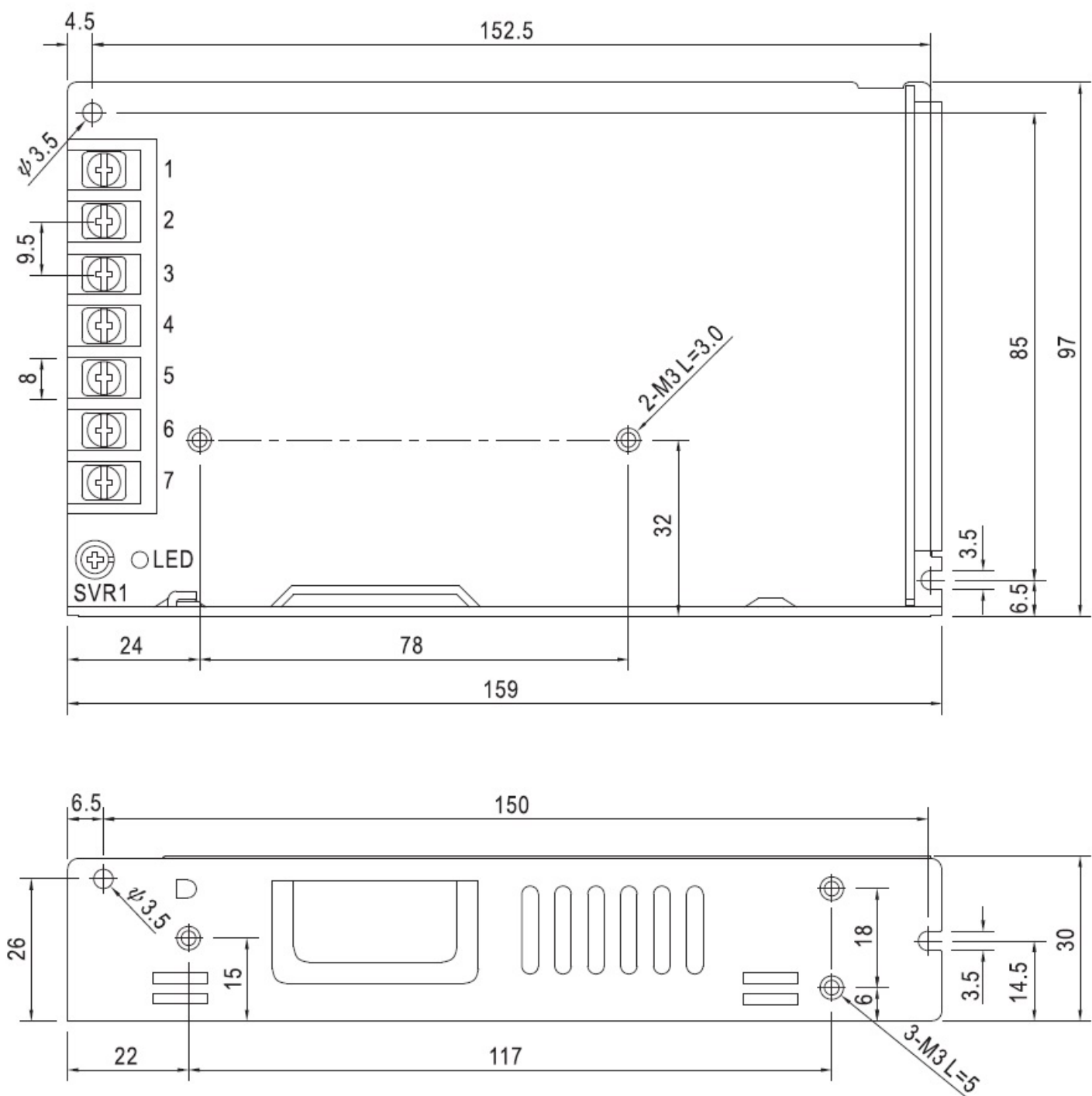


| MODEL       |                        | LRS-150-5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | LRS-150-12 | LRS-150-15 | LRS-150-24 | LRS-150-36 | LRS-150-48 |
|-------------|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|------------|------------|------------|------------|
| OUTPUT      | DC VOLTAGE             | 5V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 12V        | 15V        | 24V        | 36V        | 48V        |
|             | CURRENT RANGE          | 0-20A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 0-12.5A    | 0-10A      | 0-6.5A     | 0-4.3A     | 0-3.3A     |
|             | RATED CURRENT          | 20A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 12.5A      | 10A        | 6.5A       | 4.3A       | 3.3A       |
|             | RATED POWER            | 100W                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 150W       | 150W       | 156W       | 154.8W     | 158.4W     |
|             | RIPPLE&NOISE           | 120mVp-p                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 150mVp-p   | 150mVp-p   | 200mVp-p   | 200mVp-p   | 200mVp-p   |
|             | VOLTAGE ADJ. RANGE     | ±10%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | ±10%       | ±10%       | ±10%       | ±10%       | ±10%       |
|             | VOLTAGE TOLERANCE      | ±3%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | ±2%        | ±1%        | ±1%        | ±1%        | ±1%        |
|             | LINE REGULATION        | ±0.5%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | ±0.5%      | ±0.5%      | ±0.5%      | ±0.5%      | ±0.5%      |
|             | LOAD REGULATION        | ±2%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | ±1%        | ±0.5%      | ±0.5%      | ±0.5%      | ±0.5%      |
|             | SETUP, RISE TIME       | 800ms, 30ms, 40ms/230VAC (Full load)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |            |            |            |            |            |
| INPUT       | VOLTAGE RANGE          | 90-132VAC/170-264VAC Select by switch 240-373VDC (Withstand 300VAC surge input for 5 second)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |            |            |            |            |            |
|             | FREQUENCY RANGE        | 47-63Hz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |            |            |            |            |            |
|             | EFFICIENCY(Typ)        | 84.5%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 87%        | 88%        | 89%        | 89%        | 90%        |
|             | AC CURRENT             | 2.8A/115V, 1.6A/230VAC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |            |            |            |            |            |
|             | INRUSH CURRENT (Typ)   | COLD START 55A/230VAC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |            |            |            |            |
|             | LEAKAGE CURRENT        | <0.75mA/240VAC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |            |            |            |            |            |
| PROTECTION  | OVER LOAD              | 110%-150%rated output power                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |            |            |            |            |            |
|             |                        | Protection type: Hiccup mode recovers automatically after fault condition is removed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |            |            |            |            |            |
|             | OVER VOLTAGE           | 15%-135%rated output power                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |            |            |            |            |            |
|             |                        | Protection type: Shut down o/p voltage, re-power on to recover                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |            |            |            |            |            |
| ENVIRONMENT | OVER TEMPERATURE       | 100°C ±10°C (RT1 test next to transformer)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |            |            |            |            |            |
|             |                        | Protection type: Shut down o/p voltage, recovers automatically after normal temperature                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |            |            |            |            |            |
|             | WORKING TEMP           | -30°C~+70°C (Refer to "Derating Curve")                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |            |            |            |            |            |
|             | WORKING HUMIDITY       | 20%~90%RH non-condensing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |            |            |            |            |            |
| SAFETY      | STORAGE TEMP. HUMIDITY | -40°C~+85°C; 10%~95%RH non-condensing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |            |            |            |            |
|             | VIBRATION              | 10~500Hz, 3G 10min./1 cycle, 60min. each along X, Y, Z axes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |            |            |            |            |            |
|             | 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°C/70%RH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |            |            |            |            |            |
|             | SAFETY STANDARDS       | Compliance to UL60950-1, TUV EN60950-1, GB4943                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |            |            |            |            |            |
| OTHERS      | EMC EMISSION           | Compliance to EN55022(CISPR22) Class B, GB9254 Class B, EN55014, EN61000-3-2, 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |            |            |            |            |            |
|             | EMC IMMUNITY           | Compliance to EN61000-4-2, 3, 4, 5, 6, 8, 11, EN55024, EN61000-6-2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |            |            |            |            |            |
|             | DIMENSION              | 159*97*30mm (L*W*H)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |            |            |            |            |            |
| NOTE        | PACKING                | 0.45kg/00pcs/00kg/0000CBM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |            |            |            |            |            |
|             |                        | 1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C 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 parallel capacitor.<br>3. Tolerance: includes set up tolerance, line regulation and load regulation.<br>4. Line regulation is measured from low line to high line at rated load.<br>5. Load regulation is measured from 0% to 100% rated load.<br>6. The ambient temperature derating of 5/1000m is needed for operating altitude greater than 2000m(6500ft).<br>7. The power supply is considered a component which will be installed into a final equipment.<br>The final equipment must be re-confirmed that it still meets EMC directives. |            |            |            |            |            |



## Mechanical Specification

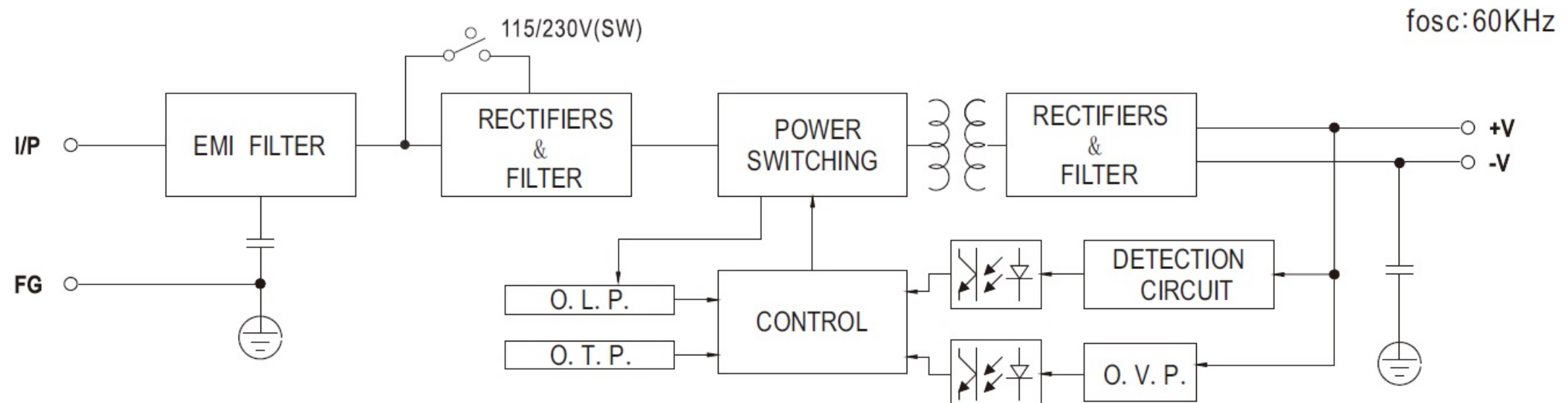
Unit :mm



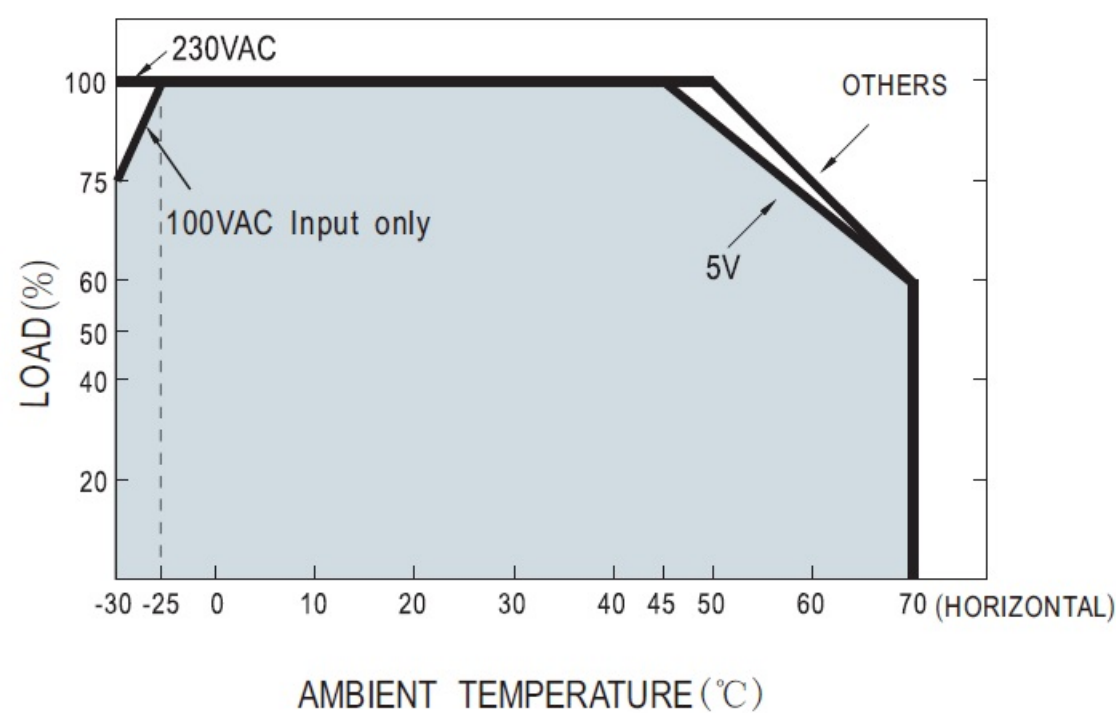
Terminal Pin NO. Assignment

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

## Block Diagram



## Derating Curve



## Static Characteristics

