**Features**
- AC input range selectable by switch
- Withstand 300VAC surge input for 5 second
- Protections: Short circuit / Overload / Over voltage / Over temperature
- Forced air cooling by built-in DC fan
- Built-in cooling Fan ON-OFF control
- 1U low profile
- Withstand 5G vibration test
- LED indicator for power on
- No load power consumption<0.75W
- 100% full load burn-in test
- High operating temperature up to 70°C
- Operating altitude up to 5000 meters (Note.8)
- High efficiency, long life and high reliability
- 3 years warranty

**Description**
LRS-350 series is a 350W single-output enclosed type power supply with 30mm of low profile design. Adopting the input of 115VAC or 230VAC (select by switch), the entire series provides an output voltage line of 3.3V, 4.2V, 5V, 12V, 15V, 24V, 36V and 48V. In addition to the high efficiency up to 89%, with the built-in long life fan LRS-350 can work under -25~+70°C with full load. Delivering an extremely low no load power consumption (less than 0.75W), it allows the end system to easily meet the worldwide energy requirement. LRS-350 has the complete protection functions and 5G anti-vibration capability; it is complied with the international safety regulations such as IEC/UL 62368-1. LRS-350 series serves as a high price-to-performance power supply solution for various industrial applications.

**Model Encoding**
LRS - 350 - [3.3]

- Output voltage
- Output power
- Series name
### Specification

#### Output

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>DC Voltage</td>
<td>3.3V</td>
<td>4.2V</td>
<td>5V</td>
<td>12V</td>
<td>15V</td>
<td>24V</td>
<td>36V</td>
<td>48V</td>
</tr>
<tr>
<td>Rated Current</td>
<td>0.6A</td>
<td>0.6A</td>
<td>0.6A</td>
<td>0.29A</td>
<td>0.23A</td>
<td>0.14A</td>
<td>0.097A</td>
<td>0.073A</td>
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<tr>
<td>Current Range</td>
<td>0 ~ 60A</td>
<td>0 ~ 60A</td>
<td>0 ~ 60A</td>
<td>0 ~ 26A</td>
<td>0 ~ 23.2A</td>
<td>0 ~ 14.6A</td>
<td>0 ~ 9.7A</td>
<td>0 ~ 7.3A</td>
</tr>
<tr>
<td>Rated Power</td>
<td>198W</td>
<td>252W</td>
<td>300W</td>
<td>348W</td>
<td>348W</td>
<td>350W</td>
<td>349.2W</td>
<td>350.4W</td>
</tr>
<tr>
<td>Ripple &amp; Noise</td>
<td>150mVp-p</td>
<td>150mVp-p</td>
<td>150mVp-p</td>
<td>150mVp-p</td>
<td>150mVp-p</td>
<td>200mVp-p</td>
<td>200mVp-p</td>
<td></td>
</tr>
<tr>
<td>Voltage Adj. Range</td>
<td>2.97 ~ 3.6V</td>
<td>3.6 ~ 4.4V</td>
<td>4.5 ~ 5.5V</td>
<td>10.2 ~ 13.8V</td>
<td>13.5 ~ 18V</td>
<td>21.6 ~ 28.8V</td>
<td>32.4 ~ 39.6V</td>
<td>43.2 ~ 52.8V</td>
</tr>
<tr>
<td>Voltage Tolerance</td>
<td>±4.0%</td>
<td>±4.0%</td>
<td>±3.0%</td>
<td>±1.5%</td>
<td>±1.0%</td>
<td>±1.0%</td>
<td>±1.0%</td>
<td>±1.0%</td>
</tr>
<tr>
<td>Line Regulation</td>
<td>±0.5%</td>
<td>±0.5%</td>
<td>±0.5%</td>
<td>±0.5%</td>
<td>±0.5%</td>
<td>±0.5%</td>
<td>±0.5%</td>
<td>±0.5%</td>
</tr>
<tr>
<td>Load Regulation</td>
<td>±2.5%</td>
<td>±2.5%</td>
<td>±2.0%</td>
<td>±1.0%</td>
<td>±0.5%</td>
<td>±0.5%</td>
<td>±0.5%</td>
<td>±0.5%</td>
</tr>
<tr>
<td>Setup, Rise Time</td>
<td>1300ms, 50ms/230VAC</td>
<td>1300ms, 50ms/115VAC</td>
<td>at full load</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hold Up Time (Typ.)</td>
<td>16ms/230VAC</td>
<td>12ms/115VAC</td>
<td>at full load</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Voltage Range</td>
<td>90 ~ 132VAC / 180 ~ 264VAC by switch</td>
<td>240 ~ 370VDC (switch on 230VAC)</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Frequency Range</td>
<td>47 ~ 63Hz</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Efficiency (Typ.)</td>
<td>79.5%</td>
<td>81.5%</td>
<td>83.5%</td>
<td>85%</td>
<td>86%</td>
<td>88%</td>
<td>88.5%</td>
<td>89%</td>
</tr>
<tr>
<td>AC Current (Typ.)</td>
<td>6.8A/115VAC</td>
<td>3.4A/230VAC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inrush Current (Typ.)</td>
<td>60A/115VAC</td>
<td>60A/230VAC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leakage Current</td>
<td>&lt;2mA/240VAC</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

#### Protection

- Over Load: 110 ~ 140% rated output power
- Over Voltage: 3.3 ~ 36V Hiccup mode, recovers automatically after fault condition is removed. 48V Shut down and latch off o/p voltage, re-power on to recover.
- Over Temperature: 3.3 ~ 36V Hiccup mode, recovers automatically after fault condition is removed. 48V Shut down and latch off o/p voltage, re-power on to recover.

#### Function

- Fan On/Off Control (Typ.): RTH3 ≥ 50°C FAN ON, ≤ 40°C FAN OFF
- Working Temp.: -25 ~ +70°C (Refer to "Derating Curve")
- Working Humidity: 20 ~ 90% RH non-condensing
- Storage Temp. Humidity: -40 ~ +85°C, 10 ~ 95% RH
- Temp. Coefficient: ±0.03%/°C (0 ~ 50°C)
- Vibration: 10 ~ 500Hz, 5G 10min./1cycle, 60min. each along X, Y, Z axes

#### Environment

- Safety Standards: IEC/UL 62368-1, BSMI CNS14336-1, EAC TP TC 004,KC 60950-1 (for LRS-350-12/24 only) approved
- Withstand Voltage: I-P/O/IP-3KVAC I-P/F-2KVAC O/P-FG.0.5KVAC
- Isolation Resistance: I-P/O/IP, I-P/F-G, O/P-FG-100 Ohms/500VDC / 25°C / 70% RH
- EMC Emission: Compliance to BSMI CNS13438, EAC TP TC 020,KC KN32,KN35(for LRS-350-12/24 only)
- EMC Immunity: Compliance to EAC TP TC 020,KC KN32,KN35(for LRS-350-12/24 only)

### Others

- MTBF: 327.9K hrs min. MIL-HDBK-217F (25°C)
- Dimension: 215*115*30mm (L"W"H)
- Packing: 0.76Kg; 15pcs/12.4kg/0.78CUFT

### Note

1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25 °C ambient temperature.
2. Ripple & noise are measured at 20MHz of bandwidth by using a 12” twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.
3. Tolerance: includes set up tolerance, line regulation and load regulation.
4. Line regulation is measured from low line to high line at rated load.
5. Load regulation is measured from 0% to 100% rated load.
6. Length of set up time is measured at cold start first. Turning ON/OFF the power supply very quickly may lead to increase of the set up time.
7. The 150% peak load capability is built in for up to 1 second for 12 – 48V LRS-350 will enter hiccup mode if the peak load is delivered for over 1 second and will recover once it resumes to the rated current level(115VAC/230VAC).
8. The ambient temperature derating of 5%/1000m is needed for operating altitude greater than 2000m(6500ft).
9. This power supply does not meet the harmonic current requirements outlined by EN61000-3-2. Please do not use this power supply under the following conditions:
   a. The end-devices is used within the European Union, and
   b. The end-devices is connected to public mains supply with 220Vac or greater rated nominal voltage, and
   c. The power supply is:
      - installed in end-devices with average or continuous input power greater than 75W, or
      - belong to part of a lighting system
   Exception:
   Power supplies used within the following end-devices do not need to fulfill EN61000-3-2
   a. Professional equipment with a total rated input power greater than 1000W.
   b. Symmetrically controlled heating elements with a rated power less than or equal to 200W.
350W Single Output Switching Power Supply

LRS-350 series

**Block Diagram**

- EMI FILTER
- RECTIFIERS
- POWER SWITCHING
- PWM CONTROL
- DETECTION CIRCUIT
- fosc : 65KHz

**Derating Curve**

- AMBIENT TEMPERATURE (°C)
- LOAD (%)

**Static Characteristics**

- INPUT VOLTAGE (VAC) 60Hz
- LOAD (%)
### Mechanical Specification

**Case No. 207A**  
**Unit:mm**

**Terminal Pin No. Assignment:**

<table>
<thead>
<tr>
<th>Pin No.</th>
<th>Assignment</th>
<th>Pin No.</th>
<th>Assignment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>AC/L</td>
<td>4~6</td>
<td>DC OUTPUT -V</td>
</tr>
<tr>
<td>2</td>
<td>AC/N</td>
<td>7~9</td>
<td>DC OUTPUT +V</td>
</tr>
<tr>
<td>3</td>
<td>FG</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Notes:**
- 4-M4 L=3mm
- 4-M4 (Both Sides) L=5mm

### Installation Manual