



IS 13252(Part 1):2010/  
IEC 60950-1:2005



## ■ Features

- AC input range selectable by switch
- Withstand 300VAC surge input for 5 second
- Protections: Short circuit / Overload / Over voltage / Over temperature
- Cooling by free air convection
- 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

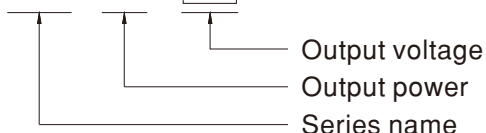
LRS-200 series is a 200W single-output enclosed type power supply with 30mm of low profile design. Adopting the input of 115VAC or 230VAC (select by switch), the entire series provides an output voltage line of 3.3V, 4.2V, 5V, 12V, 15V, 24V, 36V and 48V.

In addition to the high efficiency up to 90%, the design of metallic mesh case enhances the heat dissipation of LRS-200 that the whole series operates from -25°C through 70°C under air convection without a fan. 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-200 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-200 series serves as a high price-to-performance power supply solution for various industrial applications.

## ■ Model Encoding

LRS - 200 - 3.3



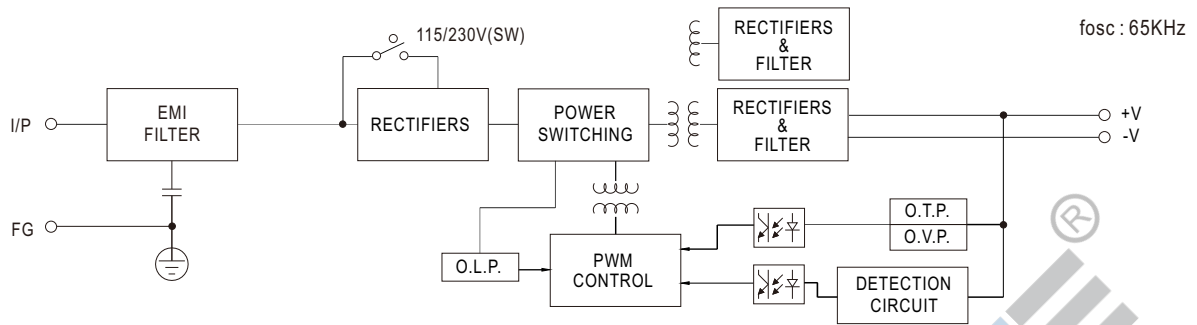
## ■ Applications

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

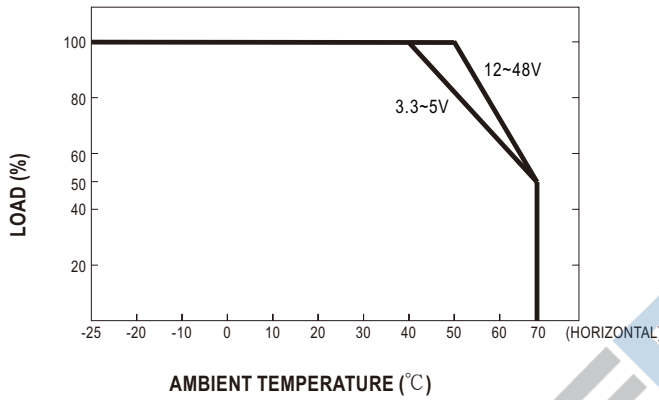
**SPECIFICATION**

| MODEL               | LRS-200-3.3  | LRS-200-4.2   | LRS-200-5  | LRS-200-12   | LRS-200-15   | LRS-200-24 | LRS-200-36   | LRS-200-48   |              |
|---------------------|--|---|------------|--------------|--------------|------------|--------------|--------------|--------------|
| OUTPUT              | DC VOLTAGE   | 3.3V  | 4.2V       | 5V           | 12V          | 15V        | 24V          | 36V          | 48V          |
|                     | RATED CURRENT  | 40A   | 40A        | 40A          | 17A          | 14A        | 8.8A         | 5.9A         | 4.4A         |
|                     | CURRENT RANGE  | 0 ~ 40A   | 0 ~ 40A    | 0 ~ 40A      | 0 ~ 17A      | 0 ~ 14A    | 0 ~ 8.8A     | 0 ~ 5.9A     | 0 ~ 4.4A     |
|                     | RATED POWER  | 132W  | 168W       | 200W         | 204W         | 210W       | 211.2W       | 212.4W       | 211.2W       |
|                     | RIPPLE & NOISE (max.) Note.2   | 150mVp-p  | 150mVp-p   | 150mVp-p     | 150mVp-p     | 150mVp-p   | 150mVp-p     | 200mVp-p     | 200mVp-p     |
|                     | VOLTAGE ADJ. RANGE   | 2.97 ~ 3.6V   | 3.6 ~ 4.4V | 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   | ±3.0%   | ±4.0%      | ±3.0%        | ±1.5%        | ±1.0%      | ±1.0%        | ±1.0%        | ±1.0%        |
|                     | LINE REGULATION Note.4   | ±0.5%   | ±0.5%      | ±0.5%        | ±0.5%        | ±0.5%      | ±0.5%        | ±0.5%        | ±0.5%        |
|                     | LOAD REGULATION Note.5   | ±2.5%   | ±2.5%      | ±2.0%        | ±1.0%        | ±0.5%      | ±0.5%        | ±0.5%        | ±0.5%        |
|                     | SETUP, RISE TIME   | 1300ms, 50ms/230VAC    1300ms,50ms/115VAC at full load  |            |              |              |            |              |              |              |
| HOLD UP TIME (Typ.) | 16ms/230VAC    12ms/115VAC at full load  |   |            |              |              |            |              |              |              |
| INPUT               | VOLTAGE RANGE  | 90 ~ 132VAC / 180 ~ 264VAC by switch    240 ~ 370VDC (switch on 230VAC)   |            |              |              |            |              |              |              |
|                     | FREQUENCY RANGE  | 47 ~ 63Hz   |            |              |              |            |              |              |              |
|                     | EFFICIENCY (Typ.)  | 83%   | 86%        | 87%          | 87.5%        | 88%        | 89.5%        | 89.5%        | 90%          |
|                     | AC CURRENT (Typ.)  | 4A/115VAC    2.2A/230VAC  |            |              |              |            |              |              |              |
|                     | INRUSH CURRENT (Typ.)  | COLD STAR 60A/115VAC    60A/230VAC  |            |              |              |            |              |              |              |
|                     | LEAKAGE CURRENT  | <2mA / 240VAC   |            |              |              |            |              |              |              |
| PROTECTION          | OVER LOAD  | 110 ~ 140% rated output power<br>3.3~36V Hiccup mode, recovers automatically after fault condition is removed.<br>48V Shut down and latch off o/p voltage, re-power on to recover.                        |            |              |              |            |              |              |              |
|                     | OVER VOLTAGE   | 3.8 ~ 4.45V   | 4.6 ~ 5.4V | 5.75 ~ 6.75V | 13.8 ~ 16.2V | 18 ~ 21V   | 28.8 ~ 33.6V | 41.4 ~ 46.8V | 55.2 ~ 64.8V |
|                     | OVER TEMPERATURE   | 3.3~36V Hiccup mode, recovers automatically after fault condition is removed.<br>48V Shut down and latch off o/p voltage, re-power on to recover.   |            |              |              |            |              |              |              |
| ENVIRONMENT         | 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  |            |              |              |            |              |              |              |
| SAFETY              | SAFETY STANDARDS   | IEC/UL 62368-1, BSMI CNS14336-1, BS EN/EN60335-1, EAC TP TC 004, KC K60950-1(for LRS-200-12/24 only), BIS IS13252(Part1): 2010/IEC 60950-1: 2005, AS/NZS62368.1 approved; Design refer to BS EN/EN62368-1 |            |              |              |            |              |              |              |
|                     | 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  |            |              |              |            |              |              |              |
|                     | EMC EMISSION   | Compliance to BSMI CNS13438, EAC TP TC 020, KC KN32, KN35(for LRS-200-12/24 only)   |            |              |              |            |              |              |              |
|                     | EMC IMMUNITY   | Compliance to EAC TP TC 020, KC KN32, KN35(for LRS-200-12/24 only)  |            |              |              |            |              |              |              |
| OTHERS              | MTBF   | 347.5K hrs min.    MIL-HDBK-217F (25°C)   |            |              |              |            |              |              |              |
|                     | DIMENSION  | 215*115*30mm (L*W*H)  |            |              |              |            |              |              |              |
|                     | PACKING  | 0.66Kg; 15pcs/10.9Kg/0.78CUFT   |            |              |              |            |              |              |              |
| 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 &amp; noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf &amp; 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>7. The 150% peak load capability is built in for up to 1 second for 12~48V. LRS-200 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).</p> <p>8. The ambient temperature derating of 5°C/1000m is needed for operating altitude greater than 2000m(6500ft).</p> <p>9. This power supply does not meet the harmonic current requirements outlined by BS EN/EN61000-3-2. Please do not use this power supply under the following conditions:</p> <ul style="list-style-type: none"> <li>a) the end-devices is used within the European Union, and</li> <li>b) the end-devices is connected to public mains supply with 220Vac or greater rated nominal voltage, and</li> <li>c) the power supply is: <ul style="list-style-type: none"> <li>- installed in end-devices with average or continuous input power greater than 75W, or</li> <li>- belong to part of a lighting system</li> </ul> </li> </ul> <p>Exception:<br/>Power supplies used within the following end-devices do not need to fulfill BS EN/EN61000-3-2</p> <ul style="list-style-type: none"> <li>a) professional equipment with a total rated input power greater than 1000W;</li> <li>b) symmetrically controlled heating elements with a rated power less than or equal to 200W</li> </ul> <p>※ Product Liability Disclaimer : For detailed information, please refer to <a href="https://www.meanwell.com/serviceDisclaimer.aspx">https://www.meanwell.com/serviceDisclaimer.aspx</a></p> |   |            |              |              |            |              |              |              |

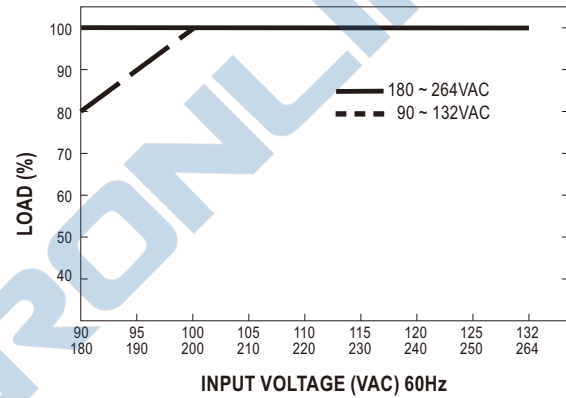
■ Block Diagram



■ Derating Curve

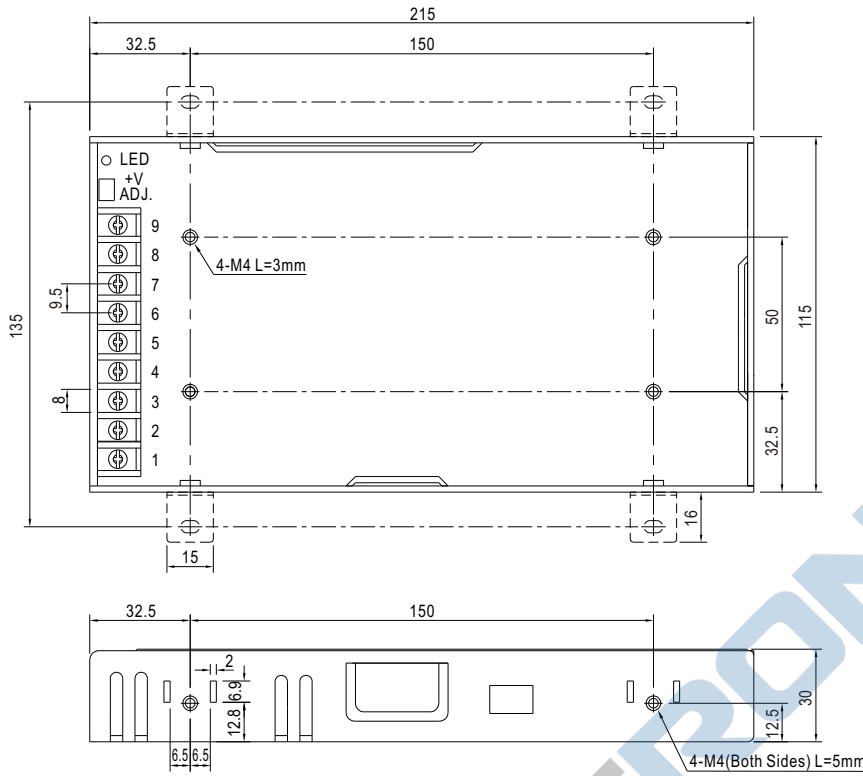


■ Static Characteristics



■ Mechanical Specification

Case No. 207 Unit:mm



Terminal Pin No. Assignment :

| Pin No. | Assignment | Pin No. | Assignment   |
|---------|------------|---------|--------------|
| 1       | AC/L       | 4~6     | DC OUTPUT -V |
| 2       | AC/N       | 7~9     | DC OUTPUT +V |
| 3       | FG $\perp$ |         |              |

■ Installation Manual

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