







- · 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</li>
- . 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

# ECC.











## Applications

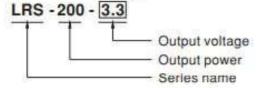
- · Industrial automation machinery
- · Industrial control system
- Mechanical and electrical equipment
- Electronic instruments, equipments or apparatus

# ■ 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





#### SPECIFICATION

ATED CURRENT JRRENT RANGE ATED POWER PPLE & NOISE (max.) Note.2	2.97 ~ 3.6V ±3.0% ±0.5% 1300ms, 50m 16ms/230VA 90 ~ 132VAC 47 ~ 63Hz 83% 4A/115VAC COLD STAR <2mA / 240V 110 ~ 140%	C 12ms/115 2 / 180 – 264VA 86% 2 2A/230V 60A/115VAC	VAC at full loa C by switch 87% VAC	240 - 370VI 87.5%		24V 8.8A 0 ~ 8.8A 211.2W 150mVp-p 21.6 ~ 28.8V ±1.0% ±0.5% xn 230VAC)	36V 5.9A 0 ~ 5.9A 212.4W 200mVp-p 32.4 ~ 39.6V ±1.0% ±0.5% ±0.5%	48V 4.4A 0 ~ 4.4A 211.2W 200mVp-p 43.2 ~ 52.8V ±1.0% ±0.5% ±0.5%				
JRRENT RANGE ATED POWER PPLE & NOISE (max.) Note.2 DLTAGE ADJ. RANGE DLTAGE TOLERANCE Note.3 NE REGULATION Note.4 DAD REGULATION Note.5 ETUP, RISE TIME DLD UP TIME (Typ.) DLTAGE RANGE REQUENCY RANGE FICIENCY (Typ.) C CURRENT (Typ.) RUSH CURRENT (Typ.)	0 - 40A 132W 150mVp-p 2.97 - 3.6V ±3.0% ±0.5% ±2.5% 1300ms, 50m 16ms/230VA 90 - 132VAC 47 - 63Hz 83% 4A/115VAC COLD STAR <2mA / 240V 110 - 140%	0 - 40A 168W 150mVp-p 3.6 - 4.4V ±4.0% ±0.5% ±2.5% ns/230VAC C 12ms/115 7 180 - 264VA 86% 2 2A/230V 60A/115VAC	0 - 40A 200W 150mVp-p 4.5 - 5.5V ±3.0% ±0.5% ±2.0% 1300ms,50m VAC at full loa C by switch	0~17A 204W 150mVp-p 10.2 ~ 13.8V ±1.5% ±0.5% ±1.0% ns/115VAC at full 240 ~ 370VI	0 ~ 14A 210W 150mVp-p 13.5 ~ 18V ±1.0% ±0.5% ±0.5% ill load	0~8.8A 211.2W 150mVp-p 21.6~28.8V ±1.0% ±0.5% ±0.5%	0~5.9A 212.4W 200mVp-p 32.4~39.6V ±1.0% ±0.5%	0-4.4A 211.2W 200mVp-p 43.2-52.8\ ±1.0% ±0.5% ±0.5%				
ATED POWER  PPLE & NOISE (max.) Note.2  PLTAGE ADJ. RANGE  PLTAGE TOLERANCE Note.3  NE REGULATION Note.4  PAD REGULATION Note.5  ETUP, RISE TIME  PLD UP TIME (Typ.)  PLTAGE RANGE  REQUENCY RANGE  FICIENCY (Typ.)  C CURRENT (Typ.)  RUSH CURRENT (Typ.)	132W 150mVp-p 2.97 - 3.6V ±3.0% ±0.5% ±2.5% 1300ms, 50m 16ms/230VA 90 - 132VAC 47 - 63Hz 83% 4A/115VAC COLD STAR <2mA / 240V 110 - 140%	168W 150mVp-p 3.6 - 4.4V ±4.0% ±0.5% ±2.5% ns/230VAC C 12ms/115 6/ 180 - 264VA 86% 2.2A/230V 60A/115VAC	200W 150mVp-p 4.5 - 5.5V ±3.0% ±0.5% ±2.0% 1300ms,50m VAC at full loa C by switch	204W 150mVp-p 10.2 - 13.8V ±1.5% ±0.5% ±1.0% ns/115VAC at fund 240 - 370VI	210W 150mVp-p 13.5 - 18V ±1.0% ±0.5% ±0.5% ill load	211.2W 150mVp-p 21.6 - 28.8V ±1.0% ±0.5% ±0.5%	212.4W 200mVp-p 32.4 - 39.6V ±1.0% ±0.5%	211.2W 200mVp-p 43.2 - 52.8V ±1.0% ±0.5% ±0.5%				
PPLE & NOISE (max.) Note 2 DLTAGE ADJ. RANGE DLTAGE TOLERANCE Note.3 NE REGULATION Note.4 DAD REGULATION Note.5 ETUP, RISE TIME DLD UP TIME (Typ.) DLTAGE RANGE REQUENCY RANGE FICIENCY (Typ.) C CURRENT (Typ.) RUSH CURRENT (Typ.)	150mVp-p 2.97 - 3.6V ±3.0% ±0.5% ±2.5% 1300ms, 50m 16ms/230VA 90 - 132VAC 47 - 63Hz 83% 4A/115VAC COLD STAR <2mA / 240V 110 - 140%	150mVp-p 3.6 - 4.4V ±4.0% ±0.5% ±2.5% ms/230VAC C 12ms/115 6/180 - 264VA 86% 2.2A/230V 60A/115VAC	150mVp-p 4.5 ~ 5.5V ±3.0% ±0.5% ±2.0% 1300ms,50m VAC at full loa C by switch	150mVp-p 10.2 - 13.8V ±1.5% ±0.5% ±1.0% ns/115VAC at fund 240 - 370VI	150mVp-p 13.5 - 18V ±1.0% ±0.5% ±0.5% sill load	150mVp-p 21.6 ~ 28.8V ±1.0% ±0.5% ±0.5%	200mVp-p 32.4 ~ 39.6V ±1.0% ±0.5% ±0.5%	206mVp-p 43.2 - 52.8 <sup>1</sup> ±1.0% ±0.5% ±0.5%				
DITAGE ADJ. RANGE DITAGE TOLERANCE Note.3 NE REGULATION Note.4 DAD REGULATION Note.5 ETUP, RISE TIME DILD UP TIME (Typ.) DITAGE RANGE REQUENCY RANGE FICIENCY (Typ.) C CURRENT (Typ.) RUSH CURRENT (Typ.)	2.97 ~ 3.6V ±3.0% ±0.5% 1300ms, 50m 16ms/230VA 90 ~ 132VAC 47 ~ 63Hz 83% 4A/115VAC COLD STAR <2mA / 240V 110 ~ 140%	3.6 - 4.4V ±4.0% ±0.5% ±2.5% ns/230VAC C 12ms/115 6/180 - 264VA 86% 2.2A/230V 60A/115VAC	4.5 - 5.5V ±3.0% ±0.5% ±2.0% 1300ms,50m VAC at full loa C by switch	10.2 - 13.8V ±1.5% ±0.5% ±1.0% ns/115VAC at fund 240 - 370VI	13.5 - 18V ±1.0% ±0.5% ±0.5% ill load	21.6 ~ 28.8V ±1.0% ±0.5% ±0.5%	32.4 - 39.6V ±1.0% ±0.5% ±0.5%	43.2 - 52.8 ±1.0% ±0.5% ±0.5%				
DITAGE TOLERANCE Note.3 NE REGULATION Note.4 DAD REGULATION Note.5 ETUP, RISE TIME DLD UP TIME (Typ.) DITAGE RANGE REQUENCY RANGE FICIENCY (Typ.) C CURRENT (Typ.) RUSH CURRENT (Typ.)	±3.0% ±0.5% ±2.5% 1300ms, 50m 16ms/230VA 90 - 132VAC 47 - 63Hz 83% 4A/115VAC COLD STAR <2mA / 240V 110 - 140%	±4.0% ±0.5% ±2.5% ns/230VAC C 12ms/115 C/180 - 264VA 86% 2.2A/230V 60A/115VAC	±3.0% ±0.5% ±2.0% 1300ms,50m VAC at full loa C by switch	±1.5% ±0.5% ±1.0% ns/115VAC at fund 240 - 370VI	±1.0% ±0.5% ±0.5% ill load	±1.0% ±0.5% ±0.5%	±1.0% ±0.5% ±0.5%	±1.0% ±0.5% ±0.5%				
NE REGULATION Note.4 DAD REGULATION Note.5 ETUP, RISE TIME DLD UP TIME (Typ.) DLTAGE RANGE REQUENCY RANGE FICIENCY (Typ.) C CURRENT (Typ.) RUSH CURRENT (Typ.)	±0.5% ±2.5% 1300ms, 50m 16ms/230VA 90 - 132VAC 47 - 63Hz 83% 4A/115VAC COLD STAR <2mA / 240V 110 - 140%	±0.5% ±2.5% ns/230VAC C 12ms/115 2 / 180 - 264VA 86% 2 .2A/230V 60A/115VAC	±0.5% ±2.0% 1300ms,50m VAC at full loa C by switch  87%	±0.5% ±1.0% ns/115VAC at fuld 240 - 370VI	±0.5% ±0.5% sill load	±0.5% ±0.5%	±0.5% ±0.5%	±0.5% ±0.5%				
DAD REGULATION Note.5 ETUP, RISE TIME DLD UP TIME (Typ.) DLTAGE RANGE REQUENCY RANGE FICIENCY (Typ.) C CURRENT (Typ.) RUSH CURRENT (Typ.) EAKAGE CURRENT	±2.5% 1300ms, 50m 16ms/230VA 90 - 132VAC 47 - 63Hz 83% 4A/115VAC COLD STAR <2mA / 240V 110 - 140%	±2.5% ns/230VAC C 12ms/115 6/180 - 264VA 86% 2.2A/230V 60A/115VAC	±2.0% 1300ms,50m VAC at full loa C by switch 87% VAC	±1.0% ns/115VAC at fund 240 = 370VI	±0.5% ill load DC (switch o	±0.5%	±0.5%	±0.5%				
ETUP, RISE TIME DLD UP TIME (Typ.) DLTAGE RANGE REQUENCY RANGE FICIENCY (Typ.) C CURRENT (Typ.) RUSH CURRENT (Typ.) EAKAGE CURRENT	1300ms, 50m 16ms/230VA 90 - 132VAC 47 ~ 63Hz 83% 4A/115VAC COLD STAR <2mA / 240V 110 ~ 140%	86% 2.2A/230VAC 1180 - 264VA 2.2A/230V 60A/115VAC	1300ms,50m VAC at full loa C by switch 87% VAC	240 - 370Vi	oll load	on 230VAC)						
DLD UP TIME (Typ.) DLTAGE RANGE REQUENCY RANGE FICIENCY (Typ.) C CURRENT (Typ.) RUSH CURRENT (Typ.) EAKAGE CURRENT	16ms/230VA 90 - 132VAC 47 ~ 63Hz 83% 4A/115VAC COLD STAR <2mA / 240V 110 ~ 140%	C 12ms/115 2 / 180 – 264VA 86% 2 2A/230V 60A/115VAC	VAC at full loa C by switch 87% VAC	240 - 370VI	DC (switch o		89.5%	90%				
CLTAGE RANGE REQUENCY RANGE FICIENCY (Typ.) C CURRENT (Typ.) RUSH CURRENT (Typ.) AKAGE CURRENT	90 - 132VAC 47 ~ 63Hz 83% 4A/115VAC COLD STAR <2mA / 240V 110 ~ 140%	86% 2.2A/230V 60A/115VAC	C by switch 87% /AC	240 - 370VI 87.5%			89.5%	90%				
CLTAGE RANGE REQUENCY RANGE FICIENCY (Typ.) C CURRENT (Typ.) RUSH CURRENT (Typ.) AKAGE CURRENT	47 ~ 63Hz 83% 4A/115VAC COLD STAR <2mA / 240V 110 ~ 140%	86% 2.2A/230V 60A/115VAC AC	87% /AC	87.5%			89.5%	90%				
FICIENCY (Typ.) C CURRENT (Typ.) RUSH CURRENT (Typ.) EAKAGE CURRENT	83% 4A/115VAC COLD STAR <2mA / 240V 110 ~ 140%	2.2A/230V 60A/115VAC /AC	/AC		88%	89.5%	89.5%	90%				
CURRENT (Typ.) RUSH CURRENT (Typ.) AKAGE CURRENT	4A/115VAC COLD STAR <2mA / 240V 110 ~ 140%	2.2A/230V 60A/115VAC /AC	/AC		88%	89.5%	89.5%	90%				
CURRENT (Typ.) RUSH CURRENT (Typ.) AKAGE CURRENT	COLD STAR <2mA / 240V 110 ~ 140%	60A/115VAC /AC	Alexander of the second	AC								
AKAGE CURRENT	<2mA / 240V	/AC	60A/230V	AC								
	110 ~ 140%	1973.			COLD STAR 60A/115VAC 60A/230VAC							
VER LOAD		rated output pa	<2mA / 240VAC									
VER LOAD		110 ~ 140% rated output power										
	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 VOLTAGE  OVER TEMPERATURE	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 - 64.8				
				cally after fault re-power on to r		moved.						
						moved.						
WORKING TEMP.	-25 ~ +70°C	(Refer to "Dera	iting Curve*)									
ORKING HUMIDITY	20 - 90% RH	non-condensi	ng									
ORAGE TEMP., HUMIDITY	1901 DO 14 O 15											
MP. COEFFICIENT												
VIBRATION	10 - 500Hz, 5G 10min./1cycle, 60min. each along X, Y, Z axes											
AFETY STANDARDS	IEC/UL 62368-1, BSMI CNS14336-1, EAC TP TC 904, KC K69950-1(for LRS-290-12/24 only) approved							ed				
THSTAND VOLTAGE	VP-O/P:3KVAC VP-FG:2KVAC O/P-FG:0.5KVAC											
OLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25°C / 70% RH											
MC EMISSION	Compliance to BSMI CNS13438, EAC TP TC 020,KC KN32,KN35(for LRS-200-12/24 only)											
AC IMMUNITY	Compliance to EAC TP TC 020,KC KN32,KN35(for LRS-200-12/24 only)											
TBF		STATES OF STREET		The state of the s	and contrast of							
MENSION	And the state of t											
DIMENSION PACKING	Section 1997		CUET									
OR OR OR OR OR OR OR OR OR OR OR OR OR O	RKING TEMP. RKING HUMIDITY RAGE TEMP., HUMIDITY P. COEFFICIENT RATION ETY STANDARDS HSTAND VOLTAGE LATION RESISTANCE EMISSION IMMUNITY F	R TEMPERATURE 48V Shut do  RKING TEMP25 - +70°C  RKING HUMIDITY 20 - 90% Rh  RAGE TEMP., HUMIDITY -40 - +85°C,  P. COEFFICIENT ±0.03%/°C  RATION 10 - 500Hz,  ETY STANDARDS IEC/UL 6236  HSTAND VOLTAGE I/P-O/P:3KV.  ATION RESISTANCE I/P-O/P, I/P-I  EMISSION Compliance II  IMMUNITY Compliance II  IMMUNITY COMPLIANCE  ENSION 215°115°30r	R TEMPERATURE  48V Shut down and latch of  -25 - +70°C (Refer to "Dera  RKING HUMIDITY 20 - 90% RH non-condensis  RAGE TEMP., HUMIDITY -40 - +85°C, 10 - 95% RH  P. COEFFICIENT ±0.03%/°C (0 - 50°C)  RATION 10 - 500Hz, 5G 10min./1cy  ETY STANDARDS IEC/UL 62368-1, BSMI CNS  HSTAND VOLTAGE I/P-O/P:3KVAC I/P-FG:20  EMISSION Compliance to BSMI CNS13  EMMUNITY Compliance to EAC TP TC 0  347.5K hrs min. MIL-HD  ENSION 215°115°30mm (L°W°H)	### ABV Shut down and latch off o/p voitage, ####################################	## TEMPERATURE   ## ABV Shut down and latch off o/p voltage, re-power on to receive the control of the control	### A8V Shut down and latch off o/p voltage, re-power on to recover.  ### RKING TEMP.  -25 - +70°C (Refer to "Derating Curve")  ### RKING HUMIDITY  20 - 90% RH non-condensing  ### A0 - +85°C, 10 ~ 95% RH  ### P. COEFFICIENT  ### ±0.03%/°C (0 ~ 50°C)  ### ### ### 10 - 500Hz, 5G 10min./1cycle, 60min. each along X, Y, Z axes  ### ### ### ### IEC/UL 62368-1, BSMI CNS14336-1, EAC TP TC 004, KC K60950-1(for HSTAND VOLTAGE   VP-O/P:3KVAC   VP-FG:2KVAC   O/P-FG:0.5KVAC    ### ATION RESISTANCE   VP-O/P. I/P-FG, O/P-FG:100M Ohms / 500VDC / 25°C / 70% RH  ### EMISSION   Compliance to BSMI CNS13438, EAC TP TC 020, KC KN32, KN35(for LRS - 100M)  ### ### IMMUNITY   Compliance to EAC TP TC 020, KC KN32, KN35(for LRS - 200-12/24 only)  ### ### 347.5K hrs min. MIL-HDBK-217F (25°C)  ENSION   215°115°30mm (L°W°H)	### Shut down and latch off by voltage, re-power on to recover.  #### RKING TEMP.  -25 - +70°C (Refer to "Derating Curve")  ###################################	### ABV Shut down and latch off o/p voltage, re-power on to recover.  ###################################				

## NOTE

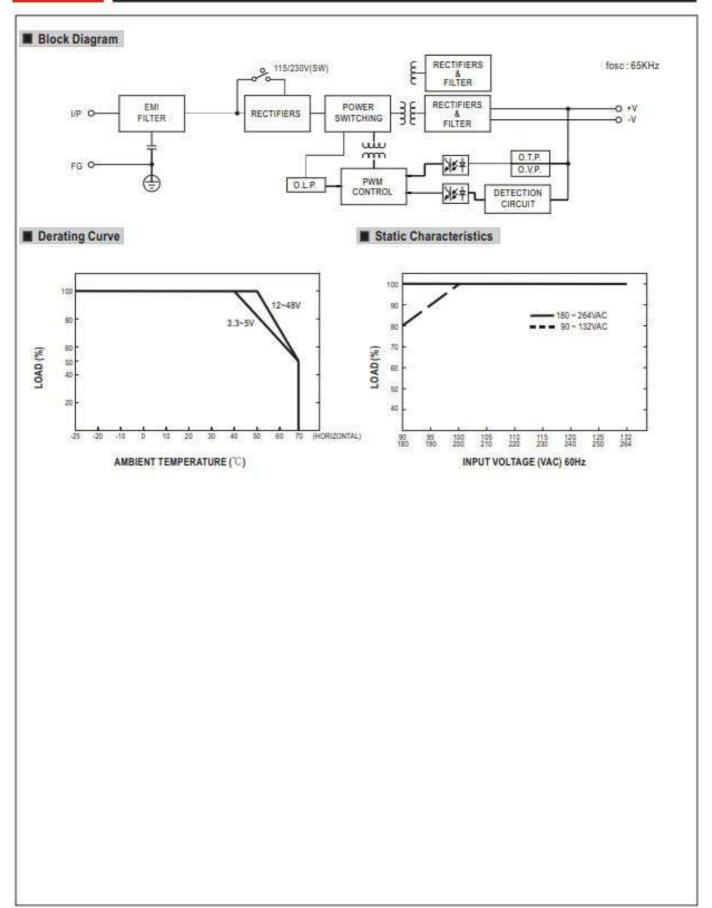
- 1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.
- 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.
- 3. Tolerance : includes set up tolerance, line regulation and load regulation.
- Line regulation is measured from low line to high line at rated load.
- 5. Load regulation is measured from 0% to 100% rated load.
- 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.
- 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).
- The ambient temperature derating of 5°C/1000m is needed for operating altitude greater than 2000m(6500ft).
- 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:

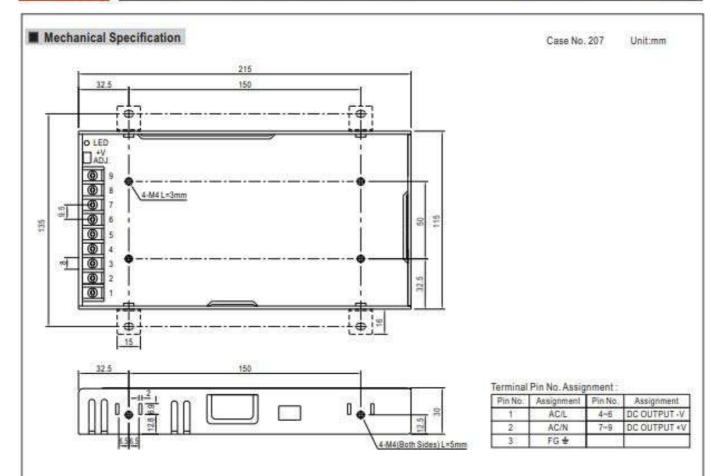
Power supplies used within the following end-devices do not need to fulfill EN61000-3-2

- 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









### ■ Installation Manual

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