

AC/DC DIN Rail Mounted Power Supply, 50W



Features

For factory automation, traffic & transportation systems and other industrial applications

100% full load burn-in test

Cooling by free air convection

All round protections: short circuit, over voltage, over current, over temperature

LED indicator for DC power on

LED indicator for DC low



Electrical

Part Number	Nominal Input Voltage	Output Voltage	Output Current	Ripple (Typ.)	Efficiency (Typ.)	Certificate
RND 315-00005	100-240VAC	12V	4.2A	25mV	80%	CE
RND 315-00006	100-240VAC	24V	2.2A	40mV	83%	CE

Note:

1. The ripple values are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with 0.1uF & 47uF parallel capacitor under ambient temperature 25°C at rated input voltage and rated load;
2. The efficiency values are measured under ambient temperature 25°C at rated input voltage and rated load.

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Input

Parameter	Conditions	MIN	TYP	MAX	UNITS
Input voltage		90		264	Vac
Input frequency		47		63	Hz
Input current	Full load, Vin=115Vac Full load, Vin=230Vac		1.06 0.52		A A
Inrush current	Cold start, Vin=115Vac Cold start, Vin=230Vac			30 60	A A
	<p>1. This product is built in inrush limiting circuit to protect the circuit from surge current damages when the power is turned on. Malfunction can occur by repeating the input voltage on and off rapidly. Therefore, sufficient interval should be given between turning on and off the power;</p> <p>2. To avoid connecting the switch or fuse to input terminal(outside of the power supply), more consideration should be given when selecting the parts that can endure the inrush current</p>				
Stand-by power consumption	Vin=230Vac		2		W
Surge voltage	L-N		2		KV

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Output

Parameter	Conditions	MIN	TYP	MAX	UNITS
Output voltage accuracy			±1		%
Output voltage adjustment range	RND 315-00005		11.6-12.3		V
	RND 315-00006		23.5-24.5		V
	Output voltage can be adjusted within above range by V-ADJ. variable resistance inside of the power supply. When output voltage exceeds the range, the power supply will be in failure or get into over voltage protection mode. To avoid the case that the output voltage is higher than rated voltage, output current should be used under rated current				
Minimum load		0			A
Line regulation	Vin from 100Vac to 240Vac		1		%
Load regulation	Vout from min. to max.		1		%
Turn-on delay time	Full load, Vin=115Vac		560		ms
Hold up time	Full load, Vin=115Vac		20		ms

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Protection

Short circuit	Hiccup mode, it will recover automatically after fault condition is removed
Over voltage	RND 315-00005: over voltage protection value 20V RND 315-00006: over voltage protection value 33V
	(1) When output voltage exceeds above over voltage protection value or reversal voltage occurs, the protection will be started and the output voltage will be cut off in order to protect the power supply; (2) The power supply will recover after the power is turned on again
Over current	RND 315-00005: over current protection value 6A RND 315-00006: over current protection value 3A
	(1) When output voltage exceeds above over current protection value, the protection will be started and the output voltage will be cut off in order to protect the power supply; (2) The power supply will recover automatically after the fault condition is removed
Over temperature	Over temperature protection value: $100\pm 10^{\circ}\text{C}$
	(1) When the ambient temperature exceeds above over temperature protection value, the protection will be started and the output voltage will be cut off in order to protect the power supply; (2) The power supply will recover after the power is turned on again

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Environment

PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
Ambient operating temperature	Startup at rated voltage	-25		+70	°C
Operating relative humidity	Non condensing	20		95	%
Storage temperature	Humidity 5 ~ 95% RH	-40		+85	°C
MTBF	Full load, 220Vac input, 25°C ambient temperature	200			Khrs
DC-OK led	LED(Green) DC OK LED light will be ON when the power supply is properly operated				
DC-Low led	LED(Red) DC Low LED light will be ON: (1) when output voltage is below 85%(±2.5%) from the rated output voltage; (2) when get over voltage, over current, over temperature and short circuit fault				
Cooling	Free air convection				
Mounting method	Vertical				
Dimension(W x H x D)	30.0 x 130.0 x 125.0mm (1.18 x 5.12 x 4.92inch)				
Weight	570g				

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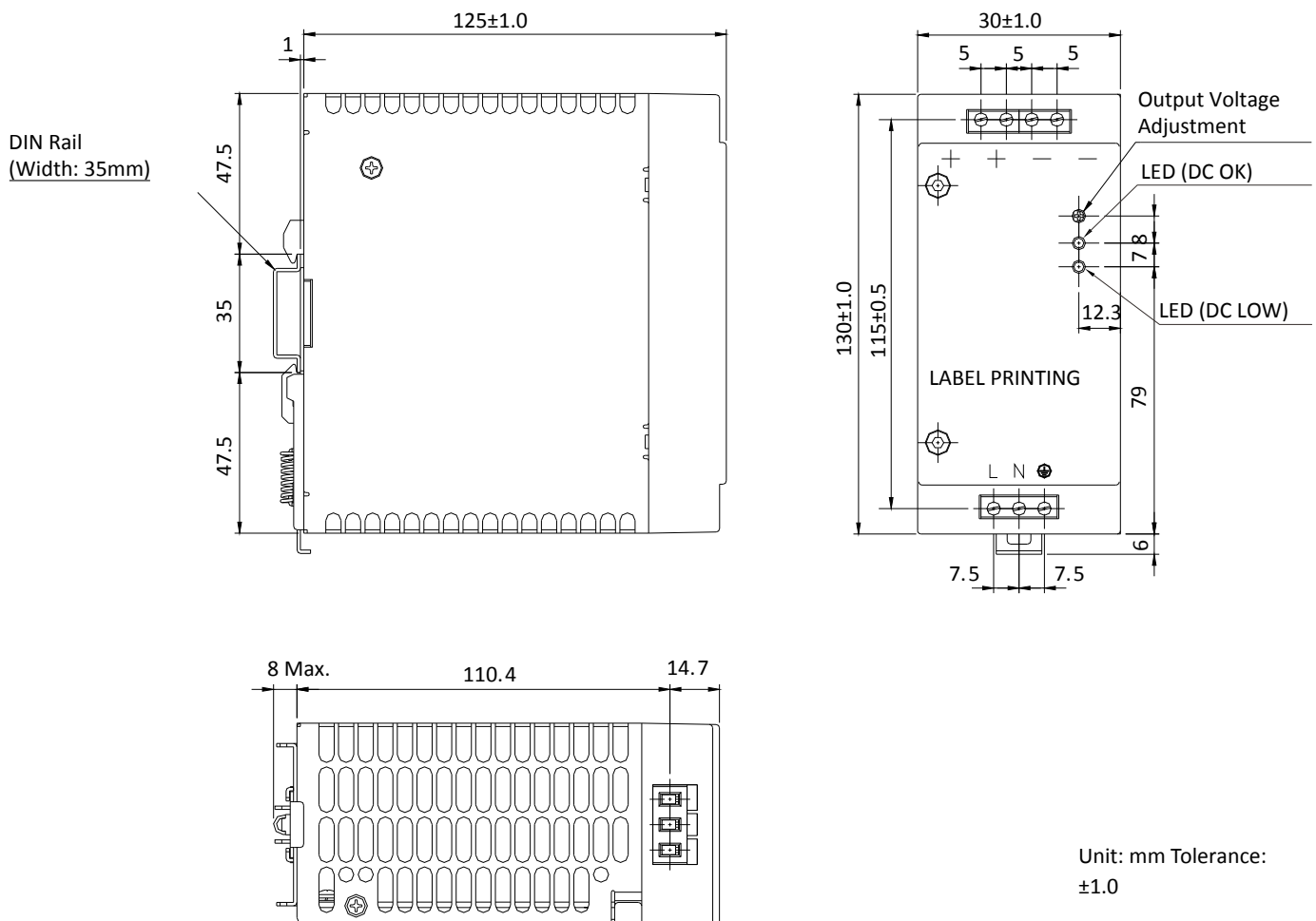


Safety/EMC

Isolation voltage	I/P-O/P: 3KVac, I/P-FG: 1.5KVac, O/P-FG: 1.5KVac
Insulation resistance	100MΩ Max./500VDC
Safety	Design refer to UL60950-1, EN60950-1
EMC	EN 55022:2010+AC:2011 (CISPR 22:2008) ClassB EN 61000-3-2:2014 (IEC 61000-3-2:2014) EN 61000-3-3:2013 (IEC 61000-3-3:2013) EN 55024:2010 (CISPR 24:2010)

Note: Unless otherwise specified, all the above parameters are measured at ambient temperature of 25°C and Vin=100Vac to 240Vac.

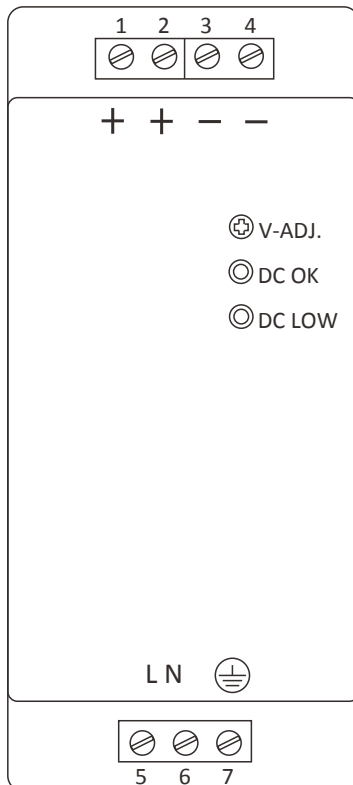
Mechanical



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Mechanical

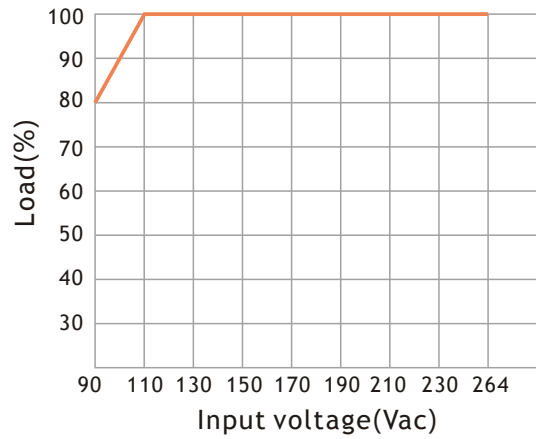
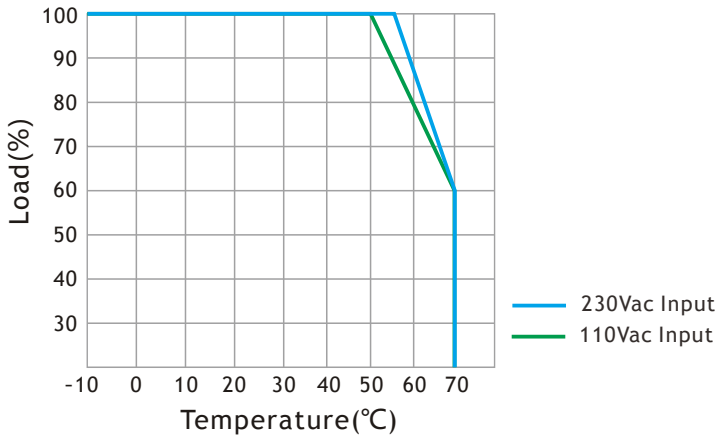


Marking	No.	Assignment
+	1	DC(+) Output Terminal
+	2	
-	3	DC(-) Output Terminal
-	4	
L	5	AC(L) Input Terminal
N	6	AC(N) Input Terminal
	7	AC Grounding Terminal
V-ADJ.	/	DC Output voltage adjustment trimmer
DC OK	/	DC Output OK indication LED(Green)
DC LOW	/	DC Output Low indication LED(Red)

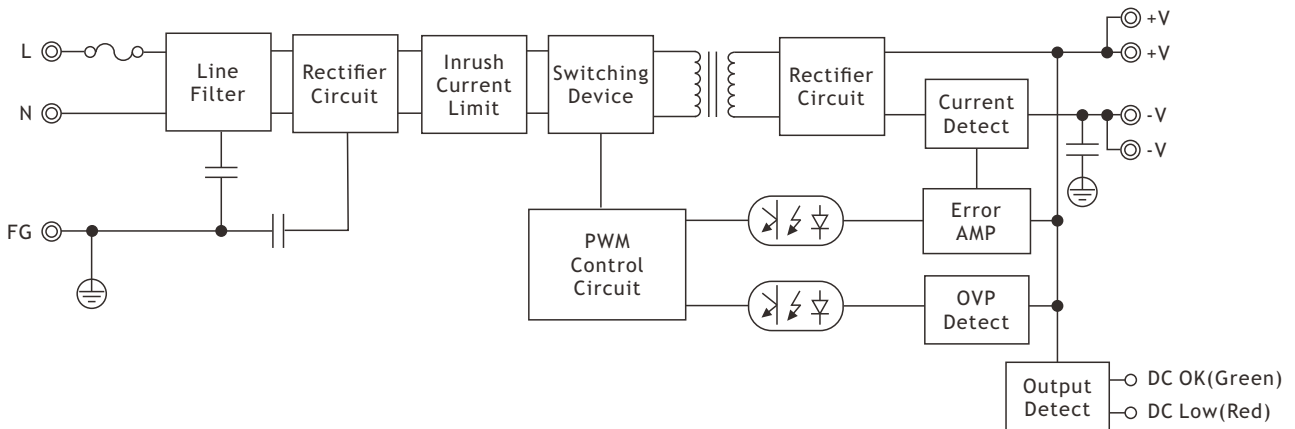
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Electrical Curve



Block Diagram

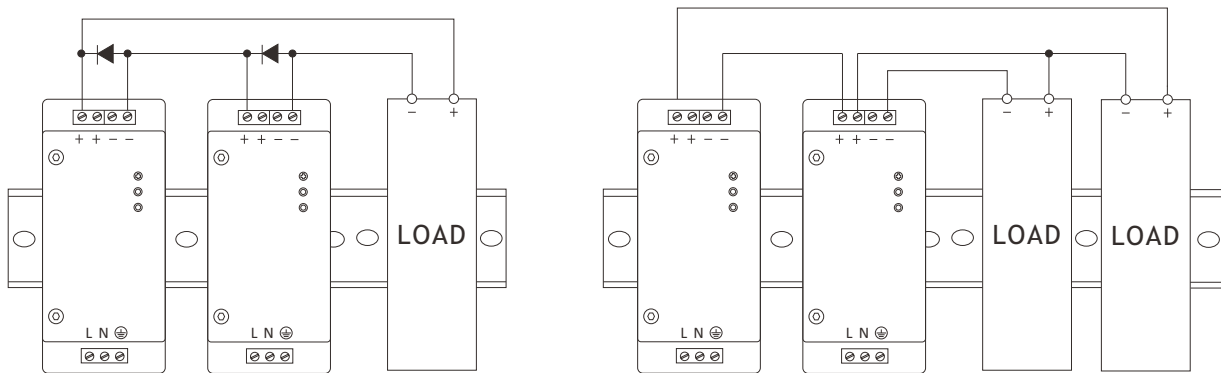


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Application Note

1. Series Operation



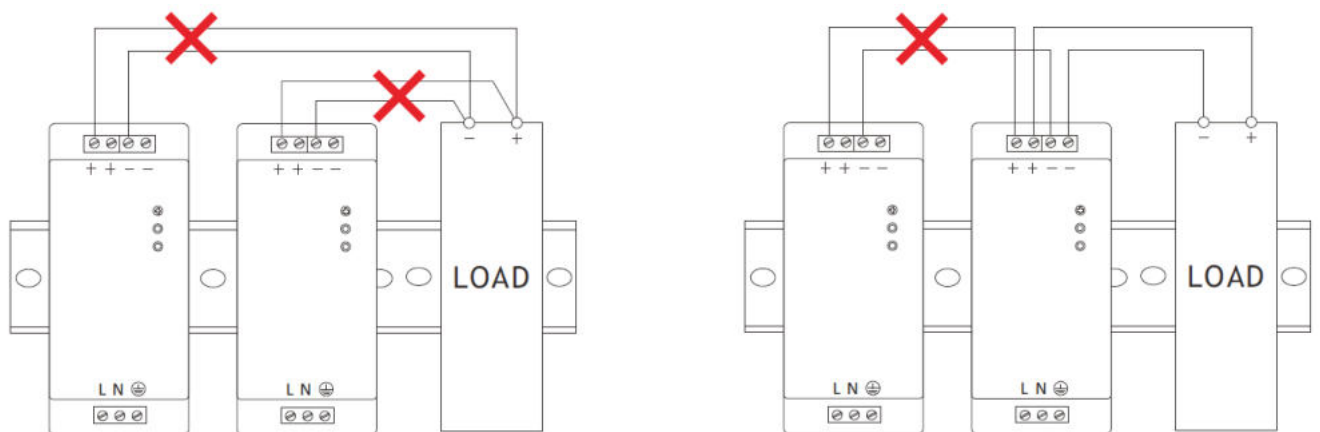
Series Operation A

Series Operation B

Note:

1. Series operation can be connected as shown in above;
2. Load current should be less than the current value of the product with the lowest output current specified at the product specification with the power supply at series connection.

2. Parallel Operation



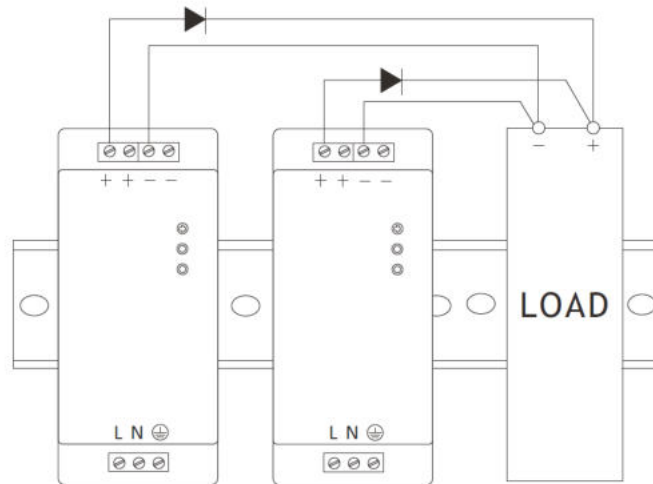
Parallel Operation A (Unable to use)

Parallel Operation B (Unable to use)

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Application Note



Parallel Operation C (Backup)

Note:

1. Parallel operation should be composed with the same products, while the connection should be as shown as "Parallel operation C";
2. In parallel operation C, current capacity cannot be increased, while it should be used for backup only. Moreover, diode that is to be added during parallel operation should be selected after considering its voltage drop, output voltage and current capacity.

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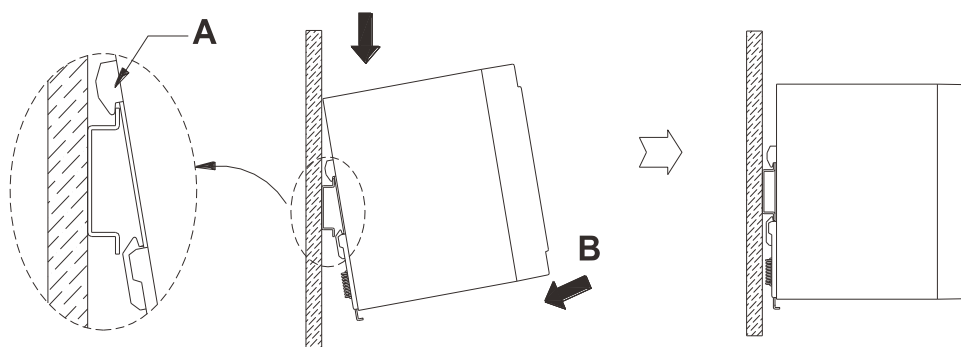


Application Note

3. Mounting Method

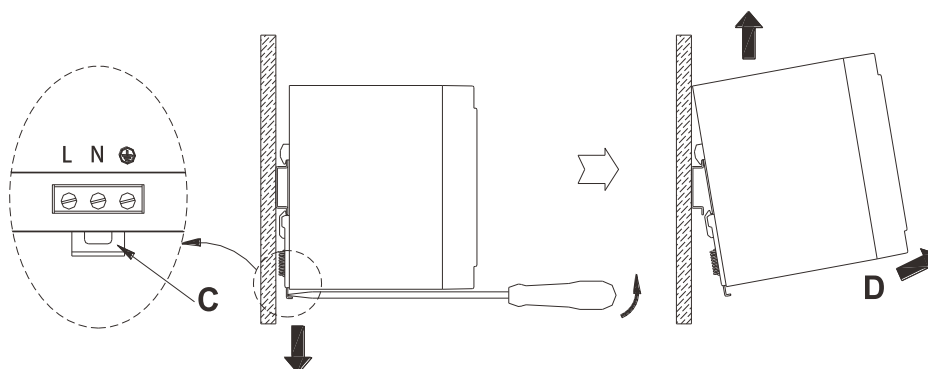
(1) How to fix

Firstly hang A part on the top of Rail as shown in below, then push the power supply into B di-rection to fix it.



(2) How to remove

Remove the power supply to D direction, pulling C part by using tools, such as a screwdriver, to downward direction.



(3) Mounting Spacing

Mounting method should be considered with airflow. Leave enough space between the units when several units are mounted together. Forced air cooling makes protection against heat better.

