



Description

Step shape power family are designed with ultra-slim plastic housing and for full range AC input from 90VAC to 264VAC.

The series are isolation Class II Level, achieving high efficiency and low no-load power consumption. They provide adjustable DC output voltage and operate in wide temperature range.

The good performance can be used for building automation, household and industrial control systems etc.



Features

- AC input with 90-264VAC
- No load power consumption < 0.3W
- Isolation Class II
- DC output voltage adjustable
- Pass LPS (Limited power source)
- Protections: Short circuit/Over load/Over voltage
- Cooling by free air convection (working temperature: -30~+70 °C)
- Din rail TS-35/7.5 or 15 mountable
- LED indicator for power on
- Three years warranty

Application Scenarios

- Robotics and Automated Equipment
- Industrial Automation Control System
- New Energy Equipment
- Intelligent Building Management System

Product Naming Conventions

DRA	60	-XX
Product Series Name	Output power 60 - 60W	Output Voltage 5 - 5.0V 12 - 12.0V 15 - 15.0V 24 - 24.0V 48 - 48.0V

Important Notice

Please read this technical specification carefully before installation and usage.
The product must be installed and debugged by professionals.
Please ensure that the input power is disconnected during installation.

Technical Parameters

Safety Model No.	DRA60-5	DRA60-12	DRA60-15	DRA60-24	DRA60-48
Output					
DC Voltage	5V	12V	15V	24V	48V
Rated Current	4.5A	4.5A	4A	2.5A	1.25A
Rated Power	22.5W	54W	60W	60W	60W
Ripple & Noise(max.)	80mVp-p	120mVp-p	120mVp-p	150mVp-p	240mVp-p
Voltage Tolerance	±2.0%	±1.0%	±1.0%	±1.0%	±1.0%
Line Regulation	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%
Load Regulation	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%
Voltage ADJ. Range	4.5~5.5V	10.8~13.8V	13.5~18V	21.6~29V	43.2~55.2V
Capacitive Loads	20000uF Min	10000uF Min	8000uF Min	4000uF Min	680uF Min
Setup, Rise, Hold up Time	0.5s,50ms,30ms/230VAC(at full load)		0.5s,50ms,12ms/115VAC(at full load)		
No-load Power Consumption	0.3W				

* Ripple & noise are measured from peak to peak with bandwidth limit of 20MHz 0.1uF and 47uF/50V parallel capacitor under DC output full load, AC nominal input 25°C).

* All parameters NOT specially mentioned at 230VAC input, rated load and 25°C of ambient temperature.

Input					
Rated Voltage Range	100-240VAC				
AC Voltage Range	90-264VAC/127~370VDC				
Nominal Network Frequency	50/60Hz				
AC Current	1.5A/115VAC 0.8A/230VAC				
Inrush Current	Cold Start 60A/200us at 230VAC 50Hz Cold Start 30A/200us at 115VAC 50Hz				
Efficiency(100%Load)	85%	88%	89%	90%	91%
Leakage Current	2mA				
Power Factor	>0.5/230VAC at full load		>0.5/115VAC at full load		

* All parameters NOT specially mentioned at 230VAC input, rated load and 25°C of ambient temperature.

Protection					
Over Load	105% ~ 160% rated output power				
	Hiccup mode when output voltage <50%, recovers automatically after fault condition is removed.				
	Constant current limiting within 50 ~ 100% rated output voltage, recovers automatically after fault condition is removed.				
Over Voltage	5.75 ~ 7.5V	14.2 ~ 16.2V	18.8 ~ 22.5V	30 ~ 36V	56.5 ~ 64.8V
	Shut down o/p voltage, re-power on to recover.				
Over Temperature	NA				
Short Circuit	Constant current Limiting within 130 ~ 150% rated output power for more than 5 seconds and				
	then shut down o/p voltage, re-power on to recover.				
Internal Fuse At L Pin	F5 A /250V				

* All parameters NOT specially mentioned at 230VAC input, rated load and 25°C of ambient temperature.

Technical Parameters

Safety Model No.	DRA60-5	DRA60-12	DRA60-15	DRA60-24	DRA60-48
Environmental Conditions					
Working TEMP.	-30~+70°C (Please refer to“Derating Curve”section)				
Working Humidity	20~95%RH Non-condensing				
Storage TEMP.Humidity	-40~+85°C ,10~95%RH Non-condensing				
TEMP. Coefficient	0.03%/°C (0~50°C) RH Non-condensing				
Vibration	10~500Hz,2G 10min./1cycle, 60min. each along X, Y, Z axes; Mounting :Compliance to IEC60068-2-6				
Start-up tested temp.	-30°C (full load max.)				
Operating Altitude	2000 meters				
Over Voltage Category	II, According to EN62368-1; altitude up to 2000 meters				
Pollution Degree	2				

* All parameters NOT specially mentioned at 230VAC input, rated load and 25°C of ambient temperature.

* Derating may be needed under low input voltage .Please check the derating curve for more details.

* The ambient temperature derating of 3.5 /1000m for operating altitude higher than 2000m(6500ft).

Mechanical	
Packing	200g/pcs; 32.5 x 22 x 36 cm; 50pcs/carton
Dimension (HxWxD)	90.02 x 52.5 x 58.4 mm
MTBF	914.6Khrs min. MIL-HDBK-217F(25°C)
Housing material	Plastic

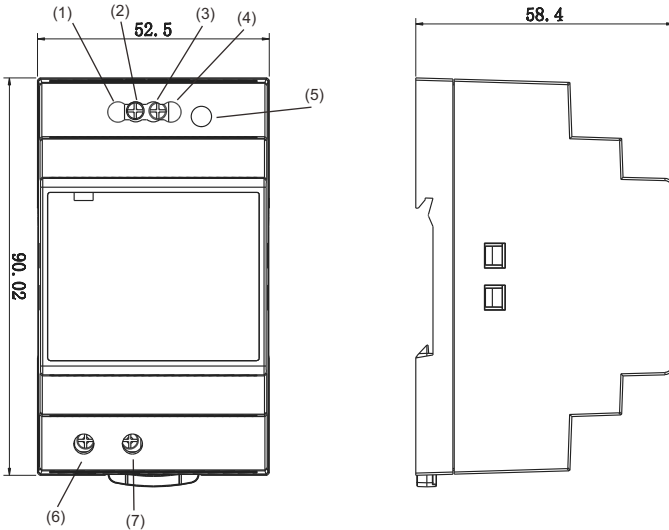
* Installation clearances : top with 40mm, bottom with 20mm,left and right with 5mm.Increase the space to10-15mm when the adjacent device is heat source.

Safety & Electromagnetic compatibility	
Safety Standards	Comply with UL62368-1,BS EN/EN62368-1
Withstand Voltage	I/P-O/P:3KVAC
Isolation Resistance	I/P-O/P:>100M Ohms/500VDC/25 /70% RH
EMC Emission	Compliance to BS EN/EN55032,BS EN/EN61000-3-2,-3
EMC Immunity	Compliance to BS EN/EN61000-4-2,3,4,5,6,8,11, BS EN/EN55035, BS EN/EN61000-6-2, BS EN/EN61204-3

Mechanical Dimensions and Installation

Dimension drawing

(Unit: mm , tolerance: ±1mm)



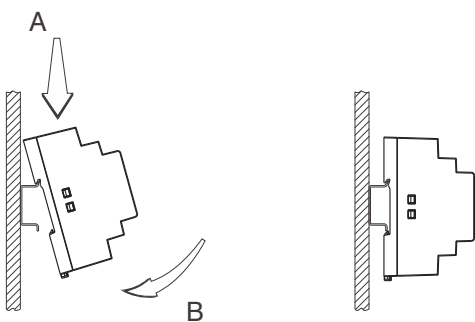
No.	Assignment
1	DC Output(V-)
2	DC Output(V-)
3	DC Output(V+)
4	DC Output(V+)
5	Voltage adjustment
6	AC/L
7	AC/N

No.	Stripping length	Tightening torque
1,2,3,4	5-7mm	0.4Nm
6,7	5-7mm	0.5Nm

Dimensions	Installation method	Terminal
Depth: 58.4 mm Width: 52.5 mm Height: 90.02 mm	40mm DIN Installation Vertical installation 20mm Heat Dissipation Space	Input terminal: Screw Terminal Output terminal: Screw Terminal Wiring Specifications:12-24AWG

* Installation clearances : top with 40mm, bottom with 20mm, left and right with 5mm. Increase the space to 10-15mm when the adjacent device is heat source.

Installation



Connect the power supply card to the DIN rail

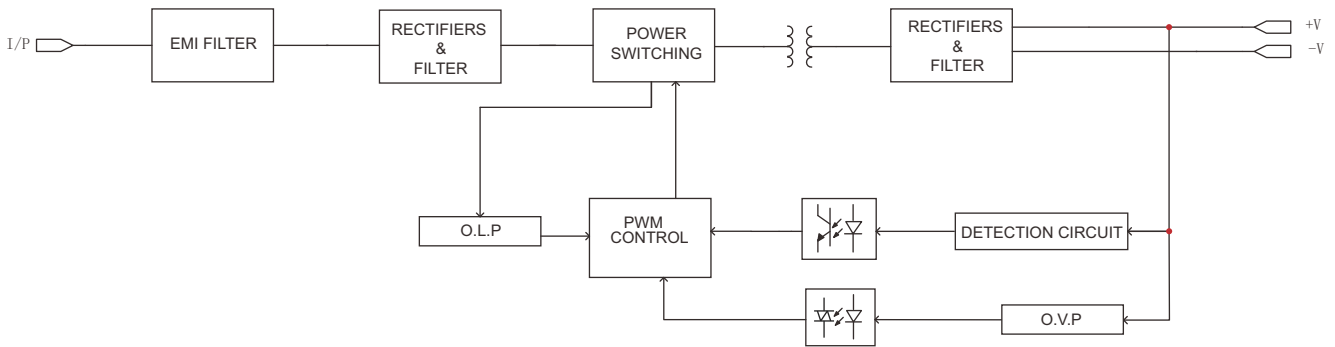
Please follow the steps below to install the power supply:

1. Mount the power supply to the DIN rail from above in the normal mounting position. The universal DIN rail adapter is in the correct position behind the DIN rail (A)
2. Then press down on the power supply until you hear the universal DIN rail adapter makes a locking sound into position (B).
3. Check if the power supply is firmly mounted on the DIN rail.



- (1) The power unit has to be installed and put into operation by qualified personnel only, under consideration of the latest country-specific standards and regulations.
- (2) Install the device in an enclosure providing protection against electrical, mechanical and fire hazards.
- (3) The power unit is designed for vertical mounting with input terminals on the bottom of the device. The mounting rail is standard TS 35/7.5 or TS 35/15 according to DIN EN 60715

Block Diagram



Engineering Data

Derating Curve

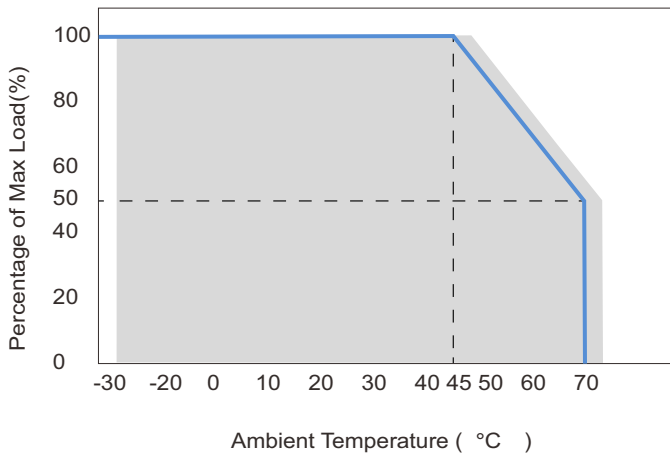


Fig. 1.

Static Characteristics

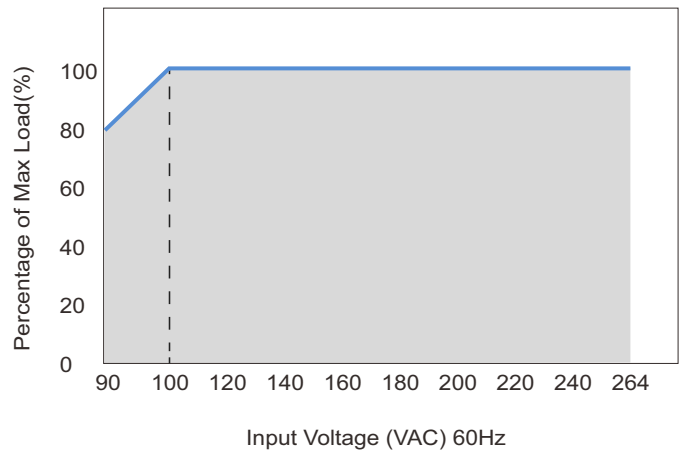


Fig. 2.

1. Power supply components may degrade, or be damaged, when the power supply is continuously used outside the shaded region, refer to the graph shown in Fig. 1.
2. The PSU will be bouncing and start up time will not exceed 5s when ambient temperature at 30°C .
3. If the output capacity is not reduced when the surrounding air temperature > 45°C , the device will run into Over Temperature Protection. When activated, power supply will latch off, until the surrounding air temperature is lowered or the load is reduced as far as necessary to keep the device in working condition, and require removal/re-application of input AC voltage in order to restart
4. In order for the device to function in the manner intended, it is also necessary to keep a safety distance as recommended in the safety instructions while the device is in operation.
5. Depending on the surrounding air temperature and output load delivered by the power supply, the device can be very hot!
6. Need to consider power de-rating if surrounding Air Temperature large than 45°C at 230 Vac.
7. If the device has to be mounted in any other orientation, please leave a message via the Contact Us form.