



■ Features

- Universal AC input / Full range
- Protections: Short circuit / Overload / Over voltage
- Can be installed on DIN rail TS-35/7.5 or 15
- Output Voltage adjustable through internal potentiometer
- Output Current adjustable through external 1~10Vdc, PWM signal or resistance
- Cooling by free air convection
- Pass LPS
- LED indicator for power on
- 100% full load burn-in test
- 3 years warranty

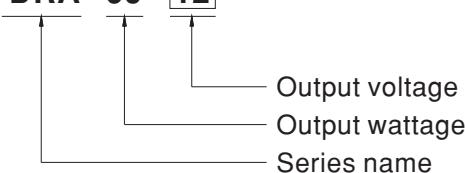
■ Description

DRA-60 is one 60W AC/DC DIN rail power supply, featuring the adjustable output current. Users are able to easily change the constant output current level, via 1~10Vdc, PWM signal or resistance.

DRA-60 can be mounted on DIN rail TS-35/7.5 or 15; in addition, the width of the unit is only 40mm that it is well suited for the installation in a limited spacing. DRA-60 accepts the universal AC input between 90VAC and 264VAC; the efficiency is up to 87% that the entire series can operate, under free air convection, from -30°C through 70°C.

■ Model Encoding

DRA - 60 - 12



■ Applications

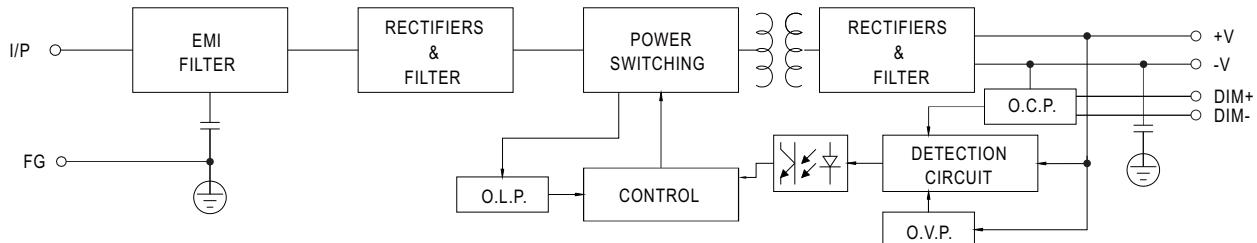
- Machine vision inspection system
- Plant cultivation system



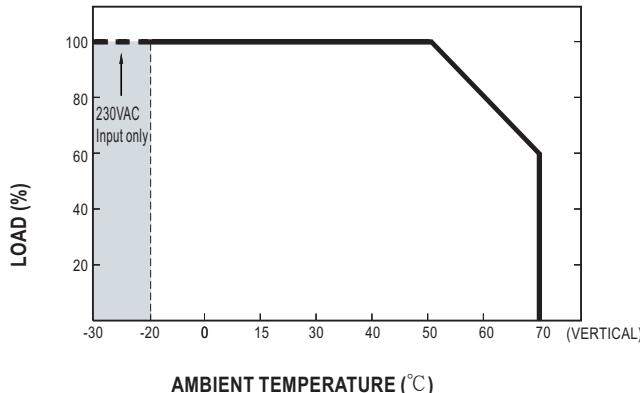
SPECIFICATION

MODEL	DRA-60-12		DRA-60-24
OUTPUT	DC VOLTAGE	12V	24V
	CONSTANT CURRENT REGION	3 ~ 12V	3 ~ 24V
	RATED CURRENT	5A	2.5A
	CURRENT RANGE	0 ~ 5A	0 ~ 2.5A
	RATED POWER	60W	60W
	RIPPLE & NOISE (max.) Note.2	120mVp-p	150mVp-p
	VOLTAGE ADJ. RANGE	12 ~ 15V	24 ~ 30V
	VOLTAGE TOLERANCE Note.3	±1.0%	±1.0%
	LINE REGULATION	±0.5%	±0.5%
	LOAD REGULATION	±0.5%	±0.5%
INPUT	SETUP, RISE TIME Note.4	400ms, 90ms/230VAC	800ms, 90ms/115VAC at full load
	HOLD UP TIME (Typ.)	50ms/230VAC	10ms/115VAC at full load
PROTECTION	VOLTAGE RANGE	90 ~ 264VAC	127 ~ 370VDC [DC input operation possible by connecting AC/L(+), AC/N(-)]
	FREQUENCY RANGE	47 ~ 63Hz	
	EFFICIENCY (Typ.)	85%	87%
	AC CURRENT (Typ.)	1.3A/115VAC	0.8A/230VAC
	INRUSH CURRENT (Typ.)	COLD START 30A/115VAC	60A/230VAC
ENVIRONMENT	OVERLOAD	95 ~ 108% rated output power	
		Protection type : Constant current limiting, recovers automatically after fault condition is removed	
	OVER VOLTAGE	14.49 ~ 18.63V	28.98 ~ 37.26V
		Protection type : Shut down o/p voltage, re-power on to recover	
SAFETY & EMC (Note 5)	WORKING TEMP.	-30 ~ +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) on output	
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes	
OTHERS	SAFETY STANDARDS	UL60950-1, TUV EN60950-1 approved	
	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 EN55032 (CISPR32) Class B, EN61000-3-2,-3	
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, EN55024, EN61204-3, light industry level, criteria A	
NOTE	MTBF	436.4K hrs min. MIL-HDBK-217F (25°C)	
	DIMENSION	40*90*100mm (W*H*D)	
	PACKING	0.3Kg; 42pcs/13.6Kg/0.82CUFT	
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. 4. Length of set up time is measured at cold first start. Turning ON/OFF the power supply may lead to increase of the set up time. 5. The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives. For guidance on how to perform these EMC tests, please refer to "EMI testing of component power supplies." (as available on http://www.meanwell.com) 6. Installation clearances : 40mm on top, 20mm on the bottom, 5mm on the left and right side are recommended when loaded permanently with full power. In case the adjacent device is a heat source, 15mm clearance is recommended.			

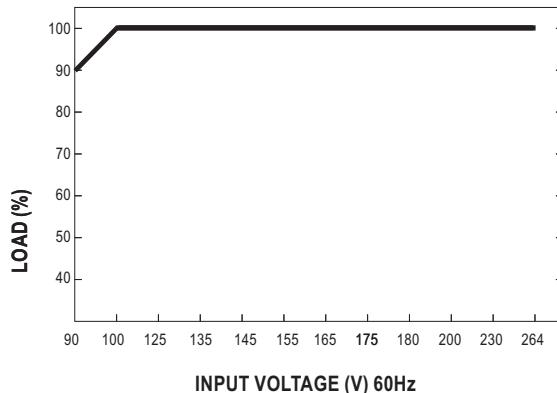
■ Block Diagram



■ Derating Curve



■ Static Characteristics



■ OUTPUT CURRENT ADJUSTMENT OPERATION

※ Built-in 3 in 1 current adjustment function. Output constant current level can be adjusted by applying 1 ~ 10Vdc, 10V PWM signal or resistance between DIM+ and DIM-.

※ Please DO NOT connect "DIM-" to "-V".

※ Reference resistance value for output current adjustment (Typical)

Resistance value	Single Power supply	10KΩ	20KΩ	30KΩ	40KΩ	50KΩ	60KΩ	70KΩ	80KΩ	90KΩ	100KΩ	OPEN
	Multiple Power supplies (N=Power supply quantity for simultaneous current adjustment control)	10KΩ/N	20KΩ/N	30KΩ/N	40KΩ/N	50KΩ/N	60KΩ/N	70KΩ/N	80KΩ/N	90KΩ/N	100KΩ/N	-----
Percentage of rated current		10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	102%~108%

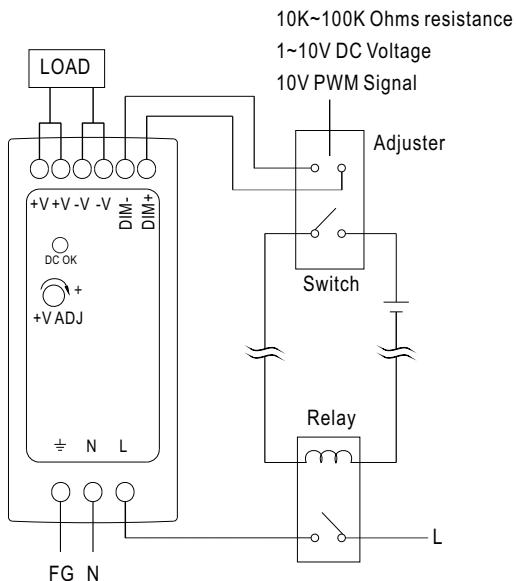
※ 1 ~ 10Vdc for output current adjustment (Typical)

Applied Source	1V	2V	3V	4V	5V	6V	7V	8V	9V	10V	OPEN
Percentage of rated current	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	102%~108%

※ 10V PWM signal for output current adjustment (Typical): Frequency range :100Hz ~ 3KHz

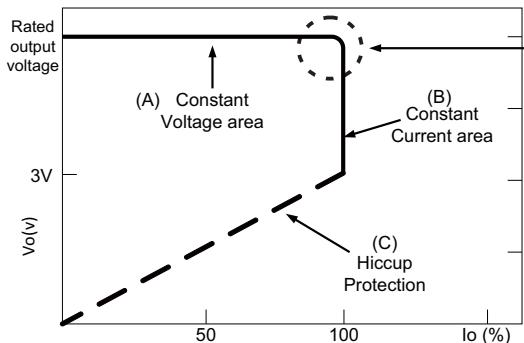
Duty value	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	OPEN
Percentage of rated current	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	102%~108%

※Using the current adjustment function can not adjust the output current to 0A. Please refer to the connection method below to adjust the output current to 0A.



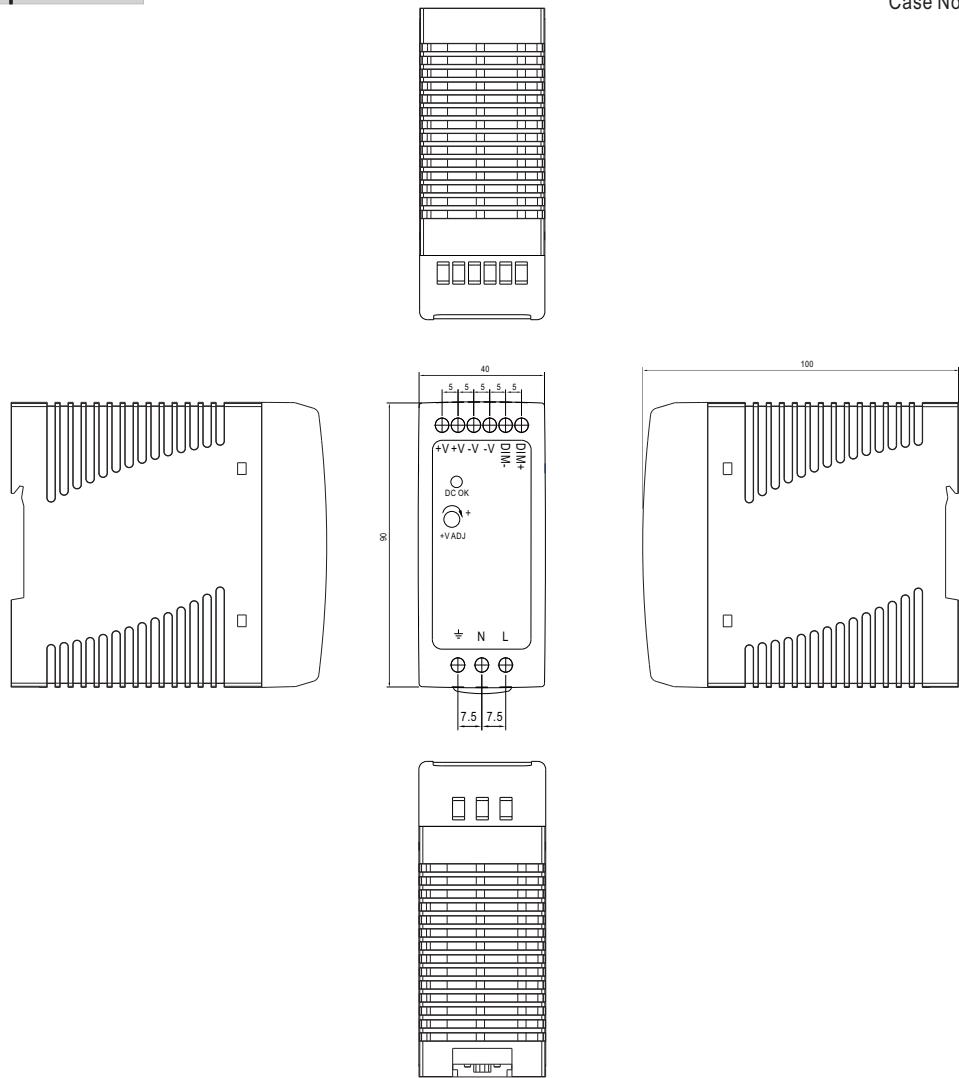
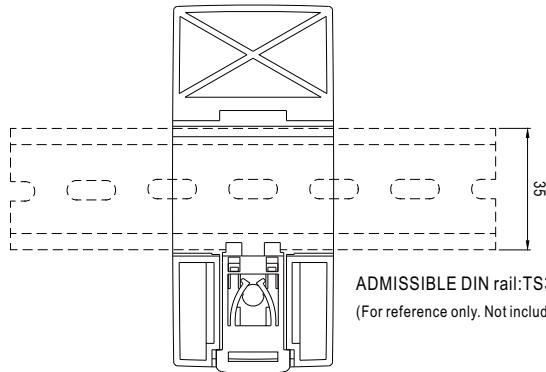
■ DRIVING METHODS OF APPLICATIONS

The power supply may either work in "constant voltage mode or constant current mode"



■ Mechanical Specification

Case No.962A Unit:mm

**■ Installation Instruction**

This series fits DIN rail TS35/7.5 or TS35/15.
For installation details, please refer to the Instruction manual.

Back View

■ Installation Manual

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