



60W Single Output Switching Power Supply

DRA-60 series



■ Features

- Universal AC input / Full range
- Protections: Short circuit / Overload / Over voltage
- Can be installed on DIN rail TS-35/7.5 or 15
- Built-in 3 in 1 dimming function
(1~10Vdc or PWM signal or resistance)
- Cooling by free air convection
- LED indicator for power on
- 100% full load burn-in test
- 3 years warranty

■ Applications

- Machine vision inspection system
- Plant cultivation system

■ Description

DRA-60 is one 60W DIN Rail power supply, targeting the LED driving applications in industrial inspection apparatus field. This series provides a full range constant current output and is equipped with the built-in 3 in 1 dimming function- based on the requirement, the users are able to easily make or change the setup to adjust the LED light intensity via one of the three methodologies, 1~10VDC, PWM signal or resistance. This model 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 adopts 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

Output voltage
Output wattage
Series name



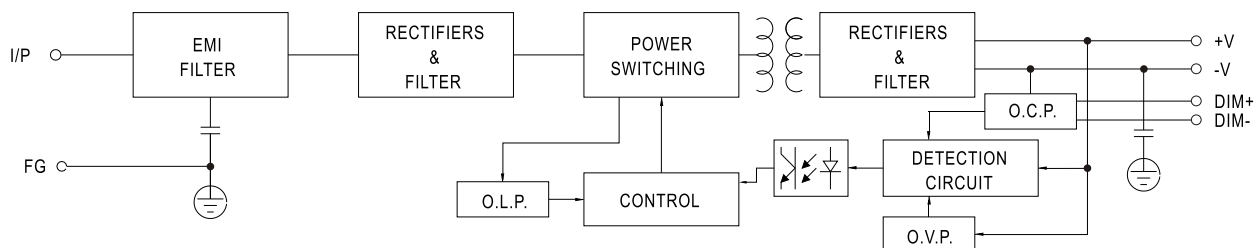
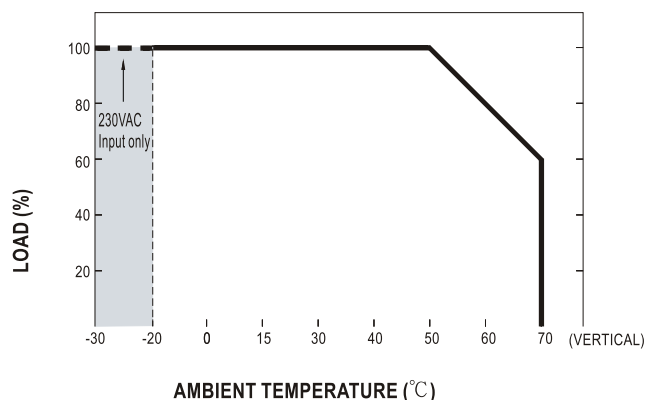
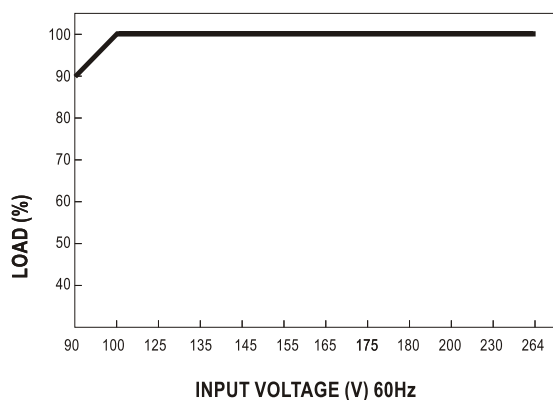
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DRA-60 series**SPECIFICATION**

MODEL		DRA-60-12		DRA-60-24	
OUTPUT	DC VOLTAGE	12V		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%	
	SETUP, RISE TIME Note.4	400ms, 50ms/230VAC 800ms, 50ms/115VAC at full load			
	HOLD UP TIME (Typ.)	50ms/230VAC 10ms/115VAC at full load			
INPUT	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			
PROTECTION	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					
ENVIRONMENT	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			
SAFETY & EMC (Note 5)	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 EN55022 (CISPR22) 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			
OTHERS	MTBF	386.1K hrs min. MIL-HDBK-217F (25°C)			
	DIMENSION	40*90*100mm (W*H*D)			
	PACKING	0.3Kg; 42pcs/13.6Kg/0.82CUFT			
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. 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)				



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DRA-60 series**■ Block Diagram****■ Derating Curve****■ Static Characteristics****■ LED DIMMING/Io TRIMMING OPERATION**

- ※ Built-in 3 in 1 dimming function or Io trim function. Output constant current level can be adjusted connecting a resistance or 1 ~ 10Vdc or 10V PWM signal between DIM+ and DIM-.
- ※ Please DO NOT connect "DIM-" to "-V".
- ※ Reference resistance value for output current adjustment (Typical)

Resistance value	Single driver	10KΩ	20KΩ	30KΩ	40KΩ	50KΩ	60KΩ	70KΩ	80KΩ	90KΩ	100KΩ	OPEN
	Multiple drivers (N=driver quantity for synchronized dimming operation)	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 ~ 10V dimming function for output current adjustment (Typical)

Dimming value	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%

- ※ Direct connecting to LEDs is suggested, but is not suitable for using additional drivers.

