

# DRA60 SERIES



AC - DC DIN RAIL MOUNTABLE  
60W CLASS 2 OUTPUT  
INDUSTRIAL CONTROL EQUIPMENT

## FEATURES

- AC/DC POWER MODULE
- UNIVERSAL INPUT 90~265VAC
- HIGH EFFICIENCY UP TO 86%
- SHORT CIRCUIT PROTECTION
- INTERNAL INPUT FILTER
- 12 MONTH WARRANTY

## MODEL LIST

MODEL NO.	INPUT VOLTAGE	OUTPUT WATTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT	EFF. (typ.)	EFF. (min.)
Single Output Models						
DRA60-05A	90~265 VAC	60 WATTS	+ 5 VDC	12000 mA	80%	78%
DRA60-12A	90~265 VAC	60 WATTS	+ 12 VDC	5000 mA	84%	80%
DRA60-24A	90~265 VAC	60 WATTS	+ 24 VDC	2500 mA	86%	84%
DRA60-48A	90~265 VAC	60 WATTS	+ 48 VDC	1250 mA	86%	83%

## SPECIFICATION

All Specifications Typical At Nominal Line, Full Load, 25°C Unless Otherwise Noticed

GENERAL						
Characteristics	Conditions		min.	typ.	max.	unit
Switching frequency	Vi nom, Io nom		50			KHz
Isolation voltage	Input / Output		3,000			VAC
Isolation resistance	Input / Output, @ 500VDC		100			MΩ
Ambient temperature	Operating at Vi nom, Io 70% ... 100%		-10		+ 50	°C
Derating	Vi nom, Io nom + 51 to + 71°C				2	% / °C
Storage temperature	Non operational		-25		+ 85	°C
M.T.B.F.	According to MIL-HDBK-217F, GF40			167,000		Hrs
Relative humidity	Vi nom, Io nom				90	% RH
Dimension	L90 x W40.5 x D115					mm
Cooling	Free air convection					
Case material	Plastic					

INPUT SPECIFICATIONS						
Characteristics	Conditions		min.	typ.	max.	unit
Rated input voltage	Io nom		100		240	VAC
Input voltage range	Ta min ... Ta max, Io nom	AC in	90		265	VAC
		DC in	120		370	VDC
Line frequency	Vi nom, Io nom		47		63	Hz
Inrush current	Io nom	Vi : 115VAC			21	A
		Vi : 230VAC			42	A

## SPECIFICATION

All Specifications Typical At Nominal Line, Full Load, 25°C Unless Otherwise Noticed

### OUTPUT SPECIFICATIONS

Characteristics	Conditions	min.	typ.	max.	unit
Output voltage accuracy	Vi nom, Io min ...Io nom			$\pm 2$	%
Minimum load	Vi nom	0			%
Line regulation	Io nom, Vi min ...Vi max			$\pm 1$	%
Load regulation	Vi nom, Io min ...Io nom			$\pm 2$	%
Transient recovery time	50% load step changed		300		$\mu$ S
Temperature coefficient	Vi nom, Io min			$\pm 0.02$	% / °C
Ripple & noise	Vi nom, Io nom, BW = 20MHz			50	mV
Hold up time	Vi = 115VAC, Io nom	20			ms
	Vi = 230VAC, Io nom	75			ms
	Vi nom, Io nom	5V model	5	5.5	VDC
		12V model	12	14	VDC
		24V model	24	28	VDC
		48V model	44	55	VDC
DC ON indicator	Vi nom, Io nom	Green LED			
Efficiency	Vi nom, Io nom, Po / Pi	Up to 86%. See model list			

### CONTROL AND PROTECTION

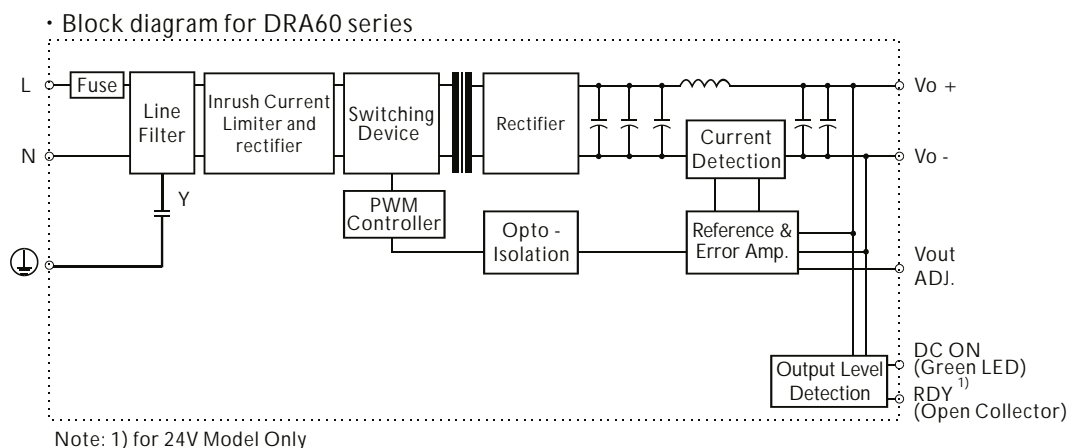
Characteristics	Conditions	min.	typ.	max.	unit
Input fuse		T2A / 250VAC internal			
Rated over load protection	Vi nom	105		125	%
Power Rdy (24V model only) 1)	Threshold	20	22	24	VDC
Output short circuit	Vi nom, Io nom	Hiccup mode			

Note 1): Pls see fig1 for Rdy connection.

### APPROVALS AND STANDARDS

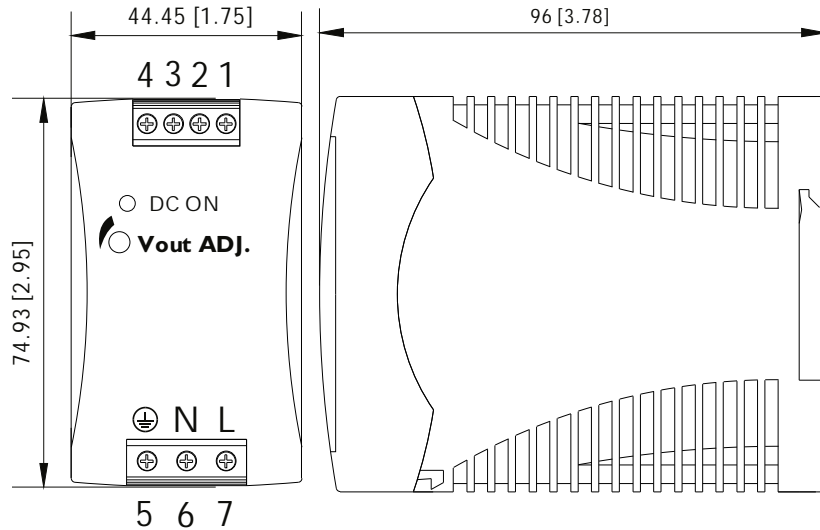
UL / cUL	UL1950, UL1310 Listed, Class 2
TUV	EN60950
CE	EN50081-1 / EN55022 class B for EMI
	EN50082-1 / EN55024 for EMS

## CIRCUIT SCHEMATIC



## MECHANISM & PIN CONFIGURATION

mm [inch]



### CONSTRUCTION

Easy snap-on mounting onto the DIN-Rail (TS35/7.5 or TS35/15), unit sits safely and firmly on the rail; no tools required even to remove

### INSTALLATION

Ventilation / Cooling  
Normal convection  
Above/below 25m/m free space  
For cooling recommended  
Connector size range  
Solid:0.2-2.0mm<sup>2</sup>(AWG24-14)  
(use copper conductors only)

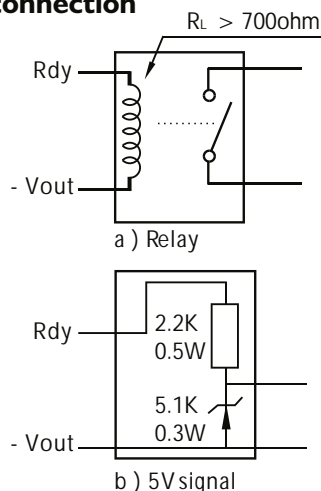
## PHYSICAL CHARACTERISTICS

CASE SIZE	90 x 40.5 x 115 mm 3.6 x 1.59 x 4.53 inches
CASE MATERIAL	Plastic
WEIGHT	360g

## PIN ASSIGNMENT

PIN NO.		Designation	Description
1	OUT	RDY	DC OK output for relay (not connect except 24V model)
2		+	Positive output terminal
3		+	Positive output terminal
4		-	Negative output terminal
5		-	Negative output terminal
6	IN	⊕	Ground this terminal to minimize high-frequency emissions
7		N	Input terminals (neutral conductor, no polarity at DC input)
8		L	Input terminals (phase conductor, no polarity at DC input)
	OTHER	Vout ADJ.	Trimmer-potentiometer for Vout adjustment
		DC ON	Operation indicator LED

Fig. 1 Rdy connection



## DERATING

