

# 60 W AC/DC Din Rail Power Supply

- UL, cUL, TÜV, CE certified
- Universal input 85-264 VAC
- High efficiency up to 89%
- Short circuit protection
- Internal input filter
- 2 years warranty



## Input characteristics

Characteristics	Conditions	min.	typ.	max.	unit
Rated input voltage	Io nom	100		240	V <sub>AC</sub>
Input voltage range	Ta min - Ta max, Io nom	AC in		264	V <sub>AC</sub>
		DC in		375	V <sub>DC</sub>
Line frequency	Vi nom, Io nom	47		63	Hz
Inrush current	Io nom	Vi: 115 V <sub>AC</sub>		30	A
		Vi: 230 V <sub>AC</sub>		60	A

## Model selection guide

Typ	Output power [W]	Output voltage [V <sub>DC</sub> ]	Output current [A]	Efficiency typ. [%]
DRAN60-05	50	5	10.00	79
DRAN60-12	60	12	5.00	86
DRAN60-24	60	24	2.50	89
DRAN60-48	60	48	1.25	89

## General characteristics

Characteristics	Conditions	min.	typ.	max.	unit
Switch in frequency	Vi nom, Io nom	50			kHz
Isolation voltage	Input / output	3000			V <sub>AC</sub>
Isolation resistance	Input / output, @ 500 V <sub>DC</sub>	100			Mohm
Ambient temperature	Operating at Vi nom	-10		+71	°C
Derating	Vi nom, Io nom +61° - +71°C			2.5	%/°C
Storage temperature	Non operational	-25		+85	°C
MTBF	According to Bellcore, Temperatur at GF 40		504'000		Hours
Relative humidity	Vi nom, Io nom	20		90	% RH
Weight	0.36 kg				
Case material	Plastic				
Cooling	Free air convection				
UL / cUL TÜV CE	UL508 Listed, UL1310 Class 2 power supply (5V, 12V w/o class 2) UL60950-1 Recongized EN60950-1, EN61000-6-3, EN55022 Class B, EN61000-3-2, EN61000-3-3 EN61000-6-2, EN55024, EN61000-4-2, EN61000-4-3, EN61000-4-4 EN61000-4-5, EN61000-4-6, EN61000-4-8, EN61000-4-11				

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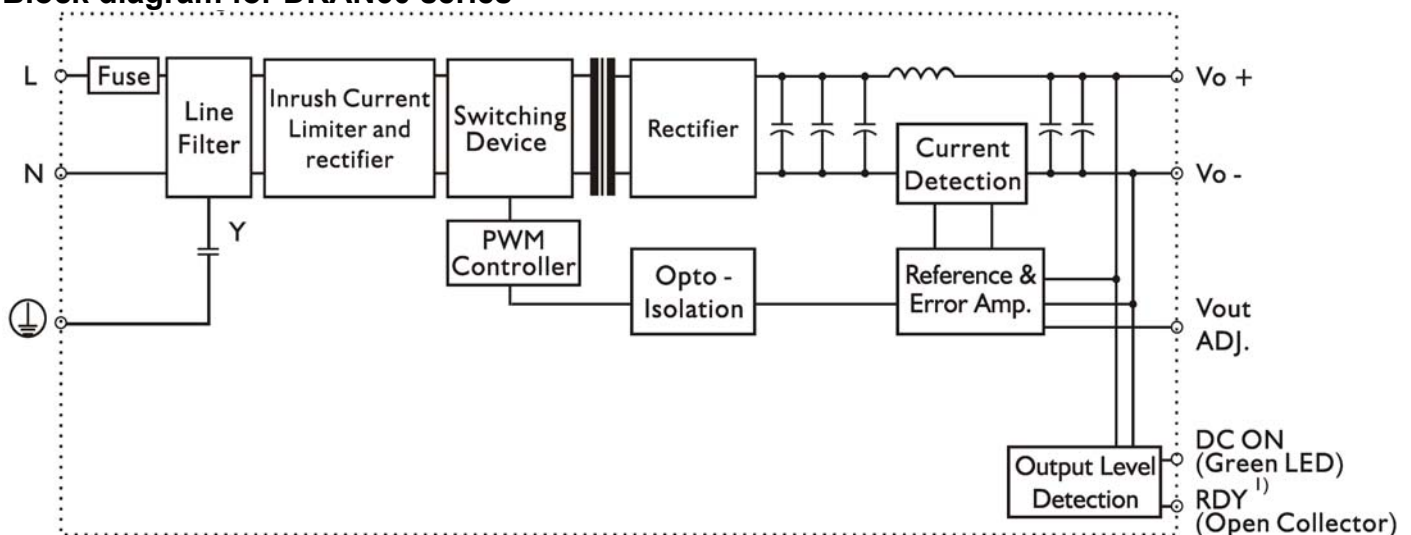
## Output Specifications

Characteristics	Conditions	min.	typ.	max.	unit
Output voltage accuracy	$V_i$ nom, $I_o$ min - $I_o$ nom			+1	%
Turn on time	After AC is applied to input at full resistive load			1,000	ms
Voltage fall time	$I_o$ nom, $V_o=95\% \sim 10\%$ rated voltage			150	ms
Voltage rise time	At full resistive load			150	ms
Minimum load	$V_i$ nom	0			%
Line regulation	$I_o$ nom, $V_i$ min - $V_i$ max			+0.5	%
Load regulation	$V_i$ nom, $I_o$ min - $I_o$ nom			+0.5	%
Transient recovery time	50% load step changed		500		$\mu$ S
Temperature coefficient	$V_i$ nom, $I_o$ min			+0.02	% / °C
Ripple and noise	$V_i$ nom, $I_o$ nom, BW = 20 Mhz			50	mV
Hold up time	$I_o$ nom	$V_i = 115 V_{AC}$	20		ms
		$V_i = 230 V_{AC}$	30		ms
Voltage trim range	$V_i$ nom, $I_o$ nom	5V	5	5.5	$V_{DC}$
		12V	12	14	$V_{DC}$
		24V	24	28	$V_{DC}$
		48V	48	55	$V_{DC}$
DC on indicator	$V_i$ nom, $I_o$ nom				Green LED

## Control and Protection

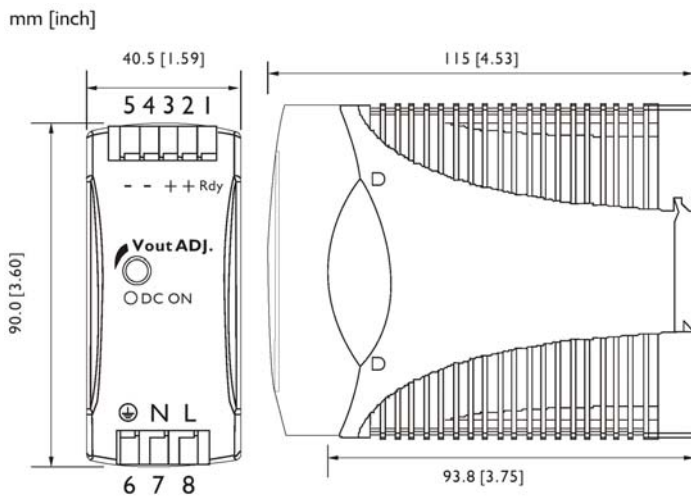
Characteristics	Conditions	min.	typ.	max.	unit
Input fuse			T2A / 250 $V_{AC}$ internal		
Rated over load protection	$V_i$ nom	110		150	%
Power Rdy (24V model only, please see fig. 1 Rdy connection)	Threshold	20	22	24	$V_{DC}$
Output short circuit	$V_i$ nom, $I_o$ nom	Fold forward			

## Block diagram for DRAN60 series



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## Dimensions



## 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

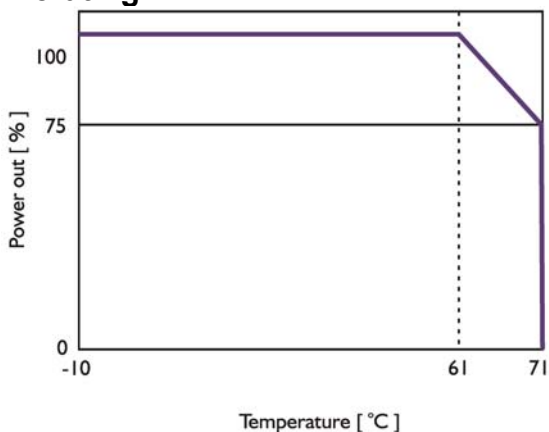
## INSTALLATION

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

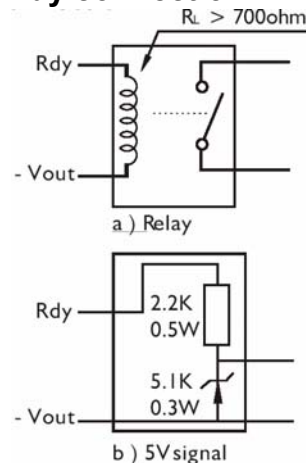
## Pin assignment

Pin no.	Designation	Description
1	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	PE, earth	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

## Derating



## Rdy connection



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