

DRA05 SERIES



AC - DC DIN RAIL MOUNTABLE
5W CLASS 2 POWER SUPPLY
INDUSTRIAL CONTROL EQUIPMENT

FEATURES

- UL / cUL / TUV / CE
- UNIVERSAL INPUT 90~265VAC
- HIGH EFFICIENCY UP TO 72%
- SHORT CIRCUIT PROTECTION
- INTERNAL INPUT FILTER
- 2 YEARS WARRANTY

MODEL LIST

MODEL NO.	INPUT VOLTAGE	OUTPUT WATTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT	EFF. (min.)	EFF. (typ.)
Single Output Models						
DRA05-05	90~265 VAC	5 WATTS	+ 5 VDC	1000 mA	67%	69%
DRA05-12	90~265 VAC	5 WATTS	+ 12 VDC	420 mA	70%	72%
DRA05-15	90~265 VAC	5 WATTS	+ 15 VDC	340 mA	70%	72%
DRA05-24	90~265 VAC	5 WATTS	+ 24 VDC	210 mA	70%	72%

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, lo nom	100			KHz
Isolation voltage	Input / Output	3,000			VAC
Isolation resistance	Input / Output, @ 500VDC	100			MΩ
Ambient temperature	Operating at Vi nom	-25		+ 71	°C
Derating	Vi nom, from +61°C to +71°C			2.5	% / °C
Storage temperature	Non operational	-25		+ 85	°C
Relative humidity	Vi nom, lo nom	20		95	% RH
Dimension	L90 x W22.5 x D115				mm
Cooling	Free air convection				
Case material	Plastic				

INPUT SPECIFICATIONS

Characteristics	Conditions	min.	typ.	max.	unit
Rated input voltage	lo nom	100		240	VAC
Input voltage range	Ta min ... Ta max, lo nom	90		265	VAC
		120		370	VDC
Line frequency	Vi nom, lo nom	47		63	Hz
Inrush current	lo nom	Vi : 115VAC		10	A
		Vi : 230VAC		18	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	V_i nom, I_o min ... I_o nom			± 1	%
Minimum load	V_i nom	0			%
Line regulation	I_o nom, V_i min ... V_i max			± 1	%
Load regulation	V_i nom, I_o min ... I_o nom			± 2	%
Transient recovery time	50% load, step changed		300		μ S
Temperature coefficient	V_i nom, I_o min			± 0.02	% / °C
Ripple & noise	V_i nom, I_o nom, BW = 20MHz			50	mV
Hold up time	I_o nom	$V_i = 115VAC$	30		ms
		$V_i = 230VAC$	130		ms
Voltage trim range	V_i nom, I_o nom	5V ... 15V models	- 10	+ 15	%
		24V model	- 10	+ 20	%
DC ON indicator threshold at start up	V_i nom, I_o nom	5V model	4.5		VDC
		12V model	10.8		VDC
		15V model	13.5		VDC
		24V model	21.6		VDC
DC LOW indicator threshold after start up	V_i nom, I_o nom	5V model	3.75	4.5	VDC
		12V model	9	10.8	VDC
		15V model	11.25	13.5	VDC
		24V model	18	21.6	VDC
Efficiency	V_i nom, I_o nom, P_o / P_i	Up to 72%, See model list			

CONTROL AND PROTECTION

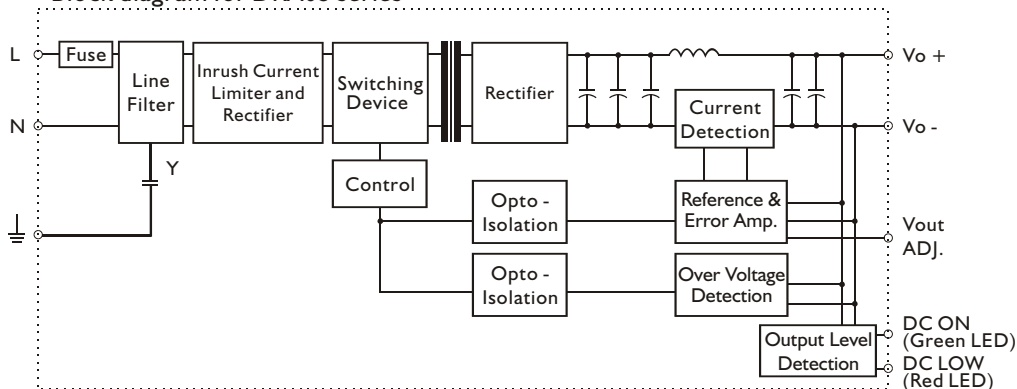
Characteristics	Conditions	min.	typ.	max.	unit
Input fuse		T2A / 250VAC internal			
Rated over load protection	V_i nom	110		135	%
Over voltage protection	V_i nom, I_o nom	125		145	%
Output short circuit	V_i nom, I_o nom	Hiccup mode			

APPROVALS AND STANDARDS

UL / cUL	UL508 Listed UL60950-1, UL1310 Class 2 Power Supply Recognized
TUV	EN60950-1
CE	EN61000-6-3 / EN55022 Class B, EN61000-3-2, EN61000-3-3 EN61000-6-2 / EN55024 / EN61204-3

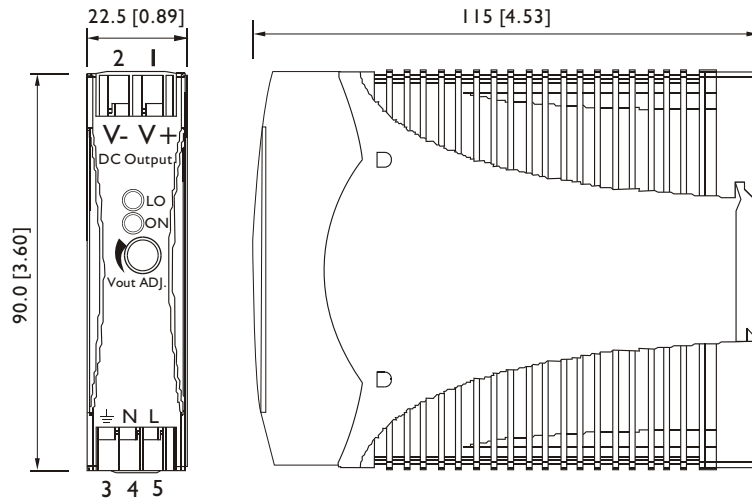
CIRCUIT SCHEMATIC

• Block diagram for DRA05 series



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
All sides 25mm free space
For cooling recommended
Connector size range
Solid: 0.2-2.0mm² (AWG24-14)
(use copper conductors only)

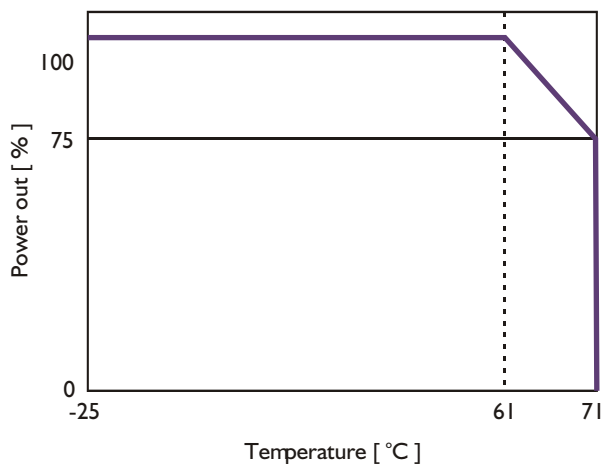
PHYSICAL CHARACTERISTICS

CASE SIZE	90 x 22.5 x 115 mm 3.6 x 0.89 x 4.53 inches
CASE MATERIAL	Plastic
WEIGHT	115 g

PIN ASSIGNMENT

PIN NO.		Designation	Description
1	OUT	V +	Positive output terminal
2		V -	Negative output terminal
3	IN	⏏	Ground this terminal to minimize high-frequency emissions
4		N	Input terminals (neutral conductor, no polarity at DC input)
5		L	Input terminals (phase conductor, no polarity at DC input)
	OTHER	ON	Operation indicator LED
		LO	DC LOW indicator LED
		Vout ADJ.	Trimmer-potentiometer for Vout adjustment

DERATING



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DRA05-12A	90~265 VAC	5 WATTS	+ 12 VDC	420 mA	70%	72%
DRA05-15A	90~265 VAC	5 WATTS	+ 15 VDC	340 mA	70%	72%
DRA05-24A	90~265 VAC	5 WATTS	+ 24 VDC	210 mA	70%	72%

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GENERAL							
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Switching frequency		Vi nom, lo nom		100			KHz
Isolation voltage		Input / Output		3,000			VAC
Isolation resistance		Input / Output, @ 500VDC		100			MΩ
Ambient temperature		Operating at Vi nom		-25		+ 71	°C
Derating		Vi nom,from +61°C to +71°C				2.5	% / °C
Storage temperature		Non operational		-25		+ 85	°C
Relative humidity		Vi nom, lo nom		20		95	% RH
Dimension		L90 x W22.5 x D115					mm
Cooling		Free air convection					
Case material		Plastic					
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Rated input voltage		lo nom		100		240	VAC
Input voltage range		Ta min ... Ta max, lo nom	AC in	90		265	VAC
			DC in	120		370	VDC
Line frequency		Vi nom, lo nom		47		63	Hz
Inrush current		lo nom	Vi : 115VAC			10	A
			Vi : 230VAC			18	A

SPECIFICATION

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OUTPUT SPECIFICATIONS

Characteristics	Conditions		min.	typ.	max.	unit
Output voltage accuracy	Vi nom, Io min ...Io nom				± 1	%
Minimum load	Vi nom		0			%
Line regulation	Io nom, Vi min ...Vi max				± 1	%
Load regulation	Vi nom, Io min ...Io nom				± 2	%
Transient recovery time	50% load, step changed			300		μS
Temperature coefficient	Vi nom, Io min				± 0.02	% / °C
Ripple & noise	Vi nom, Io nom, BW = 20MHz				50	mV
Hold up time	Io nom	Vi = 115VAC	30			ms
		Vi = 230VAC	130			ms
Voltage trim range	Vi nom, Io nom	5V ...15V models	- 10		+ 15	%
		24V model	- 10		+ 20	%
DC ON indicator threshold at start up	Vi nom, Io nom	5V model	4.5			VDC
		12V model	10.8			VDC
		15V model	13.5			VDC
		24V model	21.6			VDC
DC LOW indicator threshold after start up	Vi nom, Io nom	5V model	3.75		4.5	VDC
		12V model	9		10.8	VDC
		15V model	11.25		13.5	VDC
		24V model	18		21.6	VDC
Efficiency	Vi nom, Io nom, Po / Pi		Up to 72%, See model list			

CONTROL AND PROTECTION

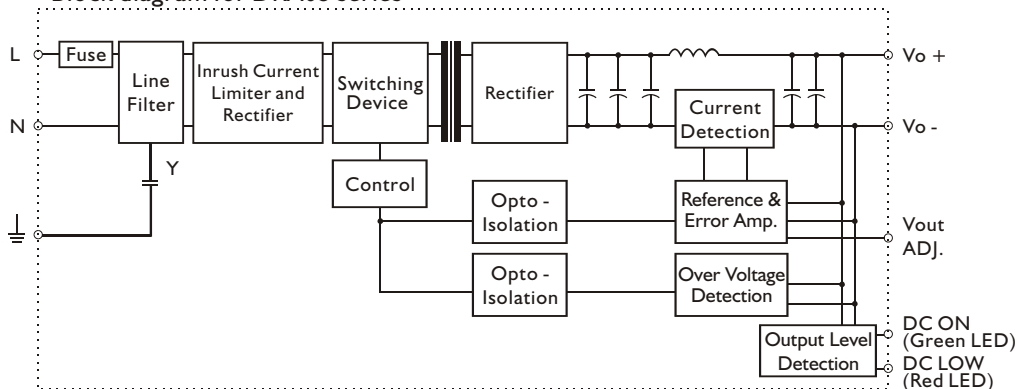
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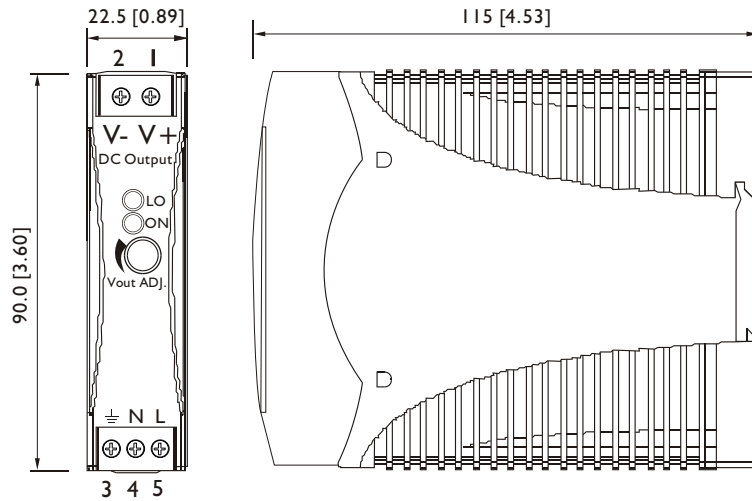
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