

# DRA120 SERIES



AC - DC DIN RAIL MOUNTABLE  
120W CLASS 2 POWER SUPPLIES  
INDUSTRIAL CONTROL EQUIPMENT

## FEATURES

- UL / cUL / TUV / CE
- COMPACT DESIGN
- HIGH EFFICIENCY UP TO 87%
- P.F.C.FUNCTION AVAILABLE (OPTION)
- PARALLEL MODELS AVAILABLE (OPTION)
- INPUT VOLTAGE 115/230VAC SELECTABLE

DRA120 - 12 x y z

WATTAGE

12 : 12V OUT  
24 : 24V OUT  
48 : 48V OUT

A : SCREW TERMINALS  
B : DETACHABLE CONNECTOR

P : WITH PARALLEL FUNCTION  
S : W/O PARALLEL FUNCTION

F : WITH P.F.CFUNCTION  
S : W/O P.F.C. FUNCTION

## MODEL LIST

MODEL NO.	INPUT VOLTAGE	OUTPUT WATTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT	EFF. <sup>1)</sup> (typ.)	EFF. (min.)
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### Single Output Models

DRA120-12xyz	115 / 230 VAC	120 WATTS	+ 12 VDC	10A	84%	82%
DRA120-24xyz	115 / 230 VAC	120 WATTS	+ 24 VDC	5A	86%	84%
DRA120-48xyz	115 / 230 VAC	120 WATTS	+ 48 VDC	2.5A	87%	85%

Note 1): 2% diminish for parallel models.

## 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	80			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 + 5l to + 71°C			1.5	% / °C	
Storage temperature	Non operational	-25		+ 85	°C	
M.T.B.F.	According to MIL-HDBK-217F, G40		200,000		Hrs	
Relative humidity	Vi nom, Io nom	20		95	% RH	
Dimension	Screw terminal type	L63.4 x W124 x H126.4			mm	
	Detachable connector type	L63.4 x W140.4 x H126.4			mm	
Cooling	Free air convection					
Case material	Metal					



# DRA120 SERIES

IND. CONT. EQ.

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### INPUT SPECIFICATIONS

Characteristics	Conditions		min.	typ.	max.	unit
Rated input voltage	lo nom		115 / 230 selectable			VAC
Input voltage range	Ta min ... Ta max, lo nom	115V selected	93		132	VAC
		230V selected	186		264	VAC
Line frequency	Vi nom, lo nom		47		63	Hz
Inrush current	Vi nom, lo nom		Vi : 115VAC		24	A
			Vi : 230VAC		48	A
P. F. C (optional)	Vi : 230VAC, lo nom		70			%

### OUTPUT SPECIFICATIONS

Characteristics	Conditions		min.	typ.	max.	unit
Output voltage accuracy (Adjusted before shipment)	Vi nom, lo max		-0		+ 1	%
Minimum load	Vi nom		5			%
Line regulation	lo nom, Vi min ...Vi max				± 0.5	%
Load regulation	Vi nom, lo min ...lo nom	nonparallel models			± 1	%
		with parallel models			± 5	μS
Temperature coefficient	Vi nom, lo min				± 0.3	% / °C
Ripple & noise	Vi nom, lo nom, BW = 20MHz				50	mV
Hold up time	Vi nom, lo nom		Vi = 115VAC	25		mS
			Vi = 230VAC	30		mS
Voltage trim range	2) Vi nom, lo nom	12V models	11.4		14.5	VAC
		24V models	22.5		30	VAC
		48V models	45		55	VAC
DC ON indicator threshold at start up	Vi nom, lo nom	12V models	10		11	VDC
		24V models	21		22	VDC
		48V models	42		44	VDC
DC LOW indicator threshold voltage	Vi nom, lo nom	12V models	10		11.2	VDC
		24V models	20.5		22.5	VDC
		48V models	41		45	VDC
Parallel operation	For parallel model only				3	unit
Efficiency	Vi nom, lo nom, Po / Pi		Up to 87%, See model list			

NOTE 2 : N / A for parallel model. Output voltage is fixed in house. Cannot be trimmed by user.

### CONTROL AND PROTECTION

Characteristics	Conditions		min.	typ.	max.	unit
Input fuse			T2A / 250VAC internal			
Rated over load protection	Vi nom		105		125	%
Power Rdy (for 24V model only)	Threshold voltage of contact closed(at start up)		21.1		23.1	VDC
	Threshold voltage of contact open(after start up)		20.6		19.0	VDC
	Electrical isolation		500			VDC
	Contact rating at 60VDC				0.3	A
Over voltage protection	Vi nom, lo nom		125		145	%
Output short circuit	Vi nom, lo nom		Hiccup mode			



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## SPECIFICATION

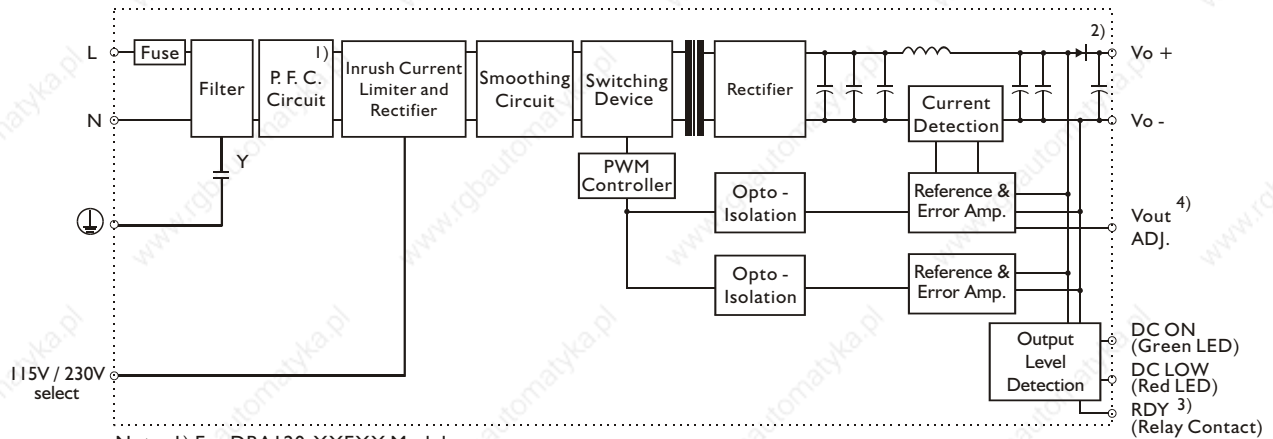
All Specifications Typical At Nominal Line, Full Load, 25°C Unless Otherwise Noticed

## APPROVALS AND STANDARDS

UL / cUL	UL1950 / UL1310 / UL508
TUV	IEC60950
EMC	EN50081-1 EN50082-2 EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-8

## CIRCUIT SCHEMATIC

• Block diagram for DRA120 series



Note: 1) For DRA120-XXFXX Model  
2) For DRA120-XXPXX Model  
3) For 24V Model Only  
4) N / A For DRA120-XXXPX Model

## PHYSICAL CHARACTERISTICS

### CASE SIZE

SCREW TERMINAL TYPE 63.4 x 124 x 126.4mm 2.49 x 4.88 x 4.98inches

DETACHABLE CONNECTOR TYPE 63.4 x 140.4 x 126.4mm 2.49 x 5.53 x 4.98inches

### CASE WEIGHT

P. F. C TYPE 860g

W / O P. FC. TYPE 640g

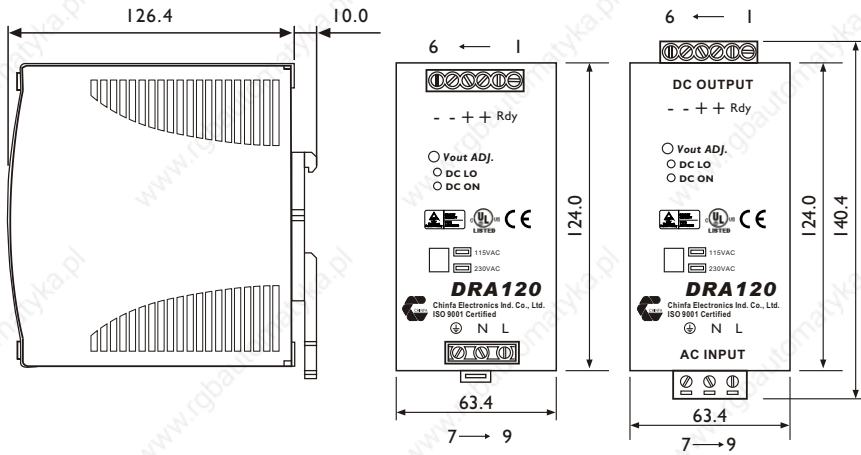


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IND. CONT. EQ.

## 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)

## PIN ASSIGNMENT

PIN NO.	Designation	Description
1	RDY	A normal open relay contact for DC ON level control (Never connect except 24V model)
2	OUT	V +
3		V +
4		V -
5		V -
6	IN	⊕
7		N
8		L
9	OTHER	DC ON
		DC LO
		Vout ADJ.
		I 15 / 230

## DERATING

