

DRAN I 20 SERIES



AC - DC DIN RAIL MOUNTABLE
120W
INDUSTRIAL CONTROL EQUIPMENT

FEATURES

- COMPACT DESIGN
- HIGH EFFICIENCY UP TO 87%
- P.F.C. FUNCTION AVAILABLE
- PARALLEL FUNCTION AVAILABLE (SWITCH)
- INPUT VOLTAGE 115/230VAC AUTO SELECT

SELECTION CHART

DRAN I 20 - 24 x

Wattage

A : SCREW TERMINALS
 B : DETACHABLE CONNECTOR
AL/BL : CLASS 2 POWER (24V ONLY)

12 : 12VOUT
24 : 24VOUT
48 : 48VOUT

MODEL LIST

MODEL NO.	INPUT VOLTAGE	OUTPUT WATTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT	EFF. (min.)	EFF. ⁽¹⁾ (typ.)
Single Output Models						
DRAN I 20-12x	115 / 230 VAC	120 WATTS	+ 12 VDC	10A	82%	84%
DRAN I 20-24x	115 / 230 VAC	120 WATTS	+ 24 VDC	5A	84%	86%
DRAN I 20-24xL	115 / 230 VAC	92 WATTS	+ 24 VDC	3.8A	83%	85%
DRAN I 20-48x	115 / 230 VAC	120 WATTS	+ 48 VDC	2.5A	85%	87%

SPECIFICATION

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

GENERAL						
Characteristics	Conditions	min.	typ.	max.	unit	
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 to +71°C			2.5	% / °C	
Storage temperature	Non operational	-25		+ 85	°C	
Relative humidity	Vi nom, Io nom	20		95	% RH	
Dimension	Screw terminal type	L123.6 x W63.2 x D123.6			mm	
	Detachable connector type	L143 x W63.2 x D123.6			mm	
Cooling	Free air convection					
Case material	Metal					

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INPUT SPECIFICATIONS

Characteristics	Conditions		min.	typ.	max.	unit
Rated input voltage	Io nom		115 / 230 (auto select)			VAC
Input voltage range	Ta min ... Ta max, Io nom	AC 115V selected	90		132	VAC
		AC 230V selected	186		264	VAC
		DC	210		370	VDC
Rated input current	Io nom			2.8 / 1.4		A
	AL/BL models			2.0 / 0.8		A
Line frequency	Vi nom, Io nom		47		63	Hz
Inrush current	Vi nom, Io nom				24	A
					48	A
P. F. C.	Vi : 230VAC, Io nom			0.7		

OUTPUT SPECIFICATIONS

Characteristics	Conditions		min.	typ.	max.	unit
Output voltage accuracy (Adjusted before shipment)	Vi nom, Io max		-0		+ 1	%
Minimum load	Vi nom		0			%
Line regulation	Io nom, Vi min ... Vi max				± 0.5	%
Load regulation	Vi nom, Io min ... Io nom	single mode			± 1	%
		parallel mode			± 5	%
Temperature coefficient	Vi nom, Io min				± 0.3	% / °C
Ripple & noise	Vi nom, Io nom, BW = 20MHz				50	mV
Hold up time	Vi nom, Io nom	Vi = 115VAC	25			ms
		Vi = 230VAC	30			ms
Voltage trim range	Vi nom, Io nom	12V models	11.4		14.5	VDC
		24V models	22.5		28.5	VDC
		48V models	45		55	VDC
		AL/BL models	22.5		24.5	VDC
DC ON indicator threshold at start up	Vi nom, Io nom	12V models	10		11.2	VDC
		24V models	17.6		19.4	VDC
		48V models	37		43	VDC
DC LOW indicator threshold after start up	Vi nom, Io nom	12V models	10		11.2	VDC
		24V models	17.6		19.4	VDC
		48V models	37		43	VDC
Parallel operation (Except AL/BL models)	0.9 Io max				3	unit
Efficiency	Vi nom, Io nom, Po / Pi		Up to 87%, See model list			

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CONTROL AND PROTECTION

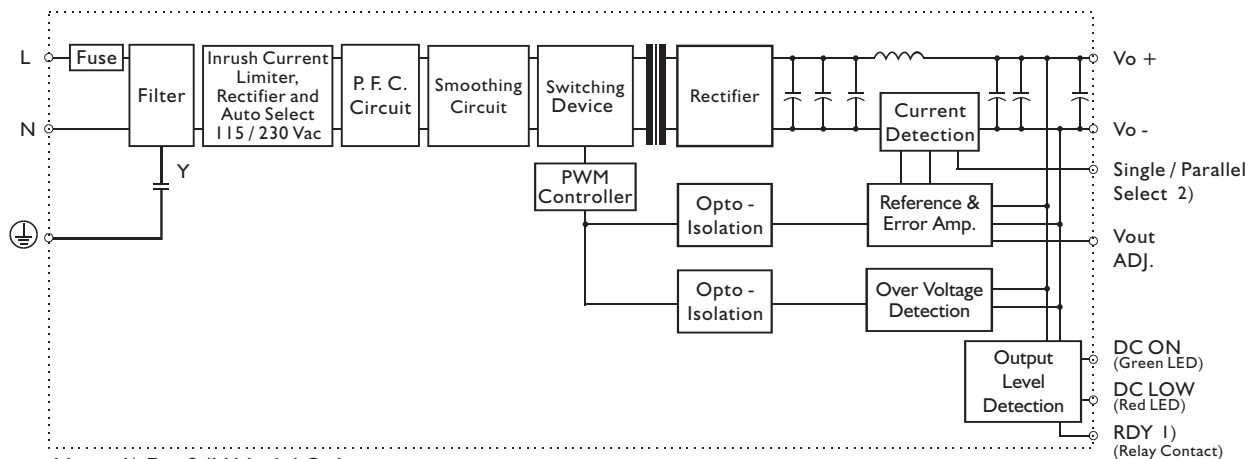
Characteristics	Conditions	min.	typ.	max.	unit
Input fuse		T3.15A / 250VAC internal			
Rated over load protection	Vi nom	110		145	%
	AL/BL models	102		108	%
Power Rdy (for 24V models only)	Threshold voltage of contact closed(at start up)	17.6		19.4	VDC
	Electrical isolation	500			VDC
	Contact rating at 60VDC			0.3	A
Over voltage protection	Vi nom, Io nom	125		145	%
	AL/BL models	102		106	%
Output short circuit	Vi nom, Io nom	Current limited			

APPROVALS AND STANDARDS

UL / cUL	UL508 Listed, UL60950-1 Recognized, UL1310 class 2 power (AL/BL models only)
TUV	EN60950-1
CE	EN61000-6-3, EN55022 class B, EN61000-3-2, EN61000-3-3 EN61000-6-2, EN55024

CIRCUIT SCHEMATIC

• Block diagram for DRAN120 series



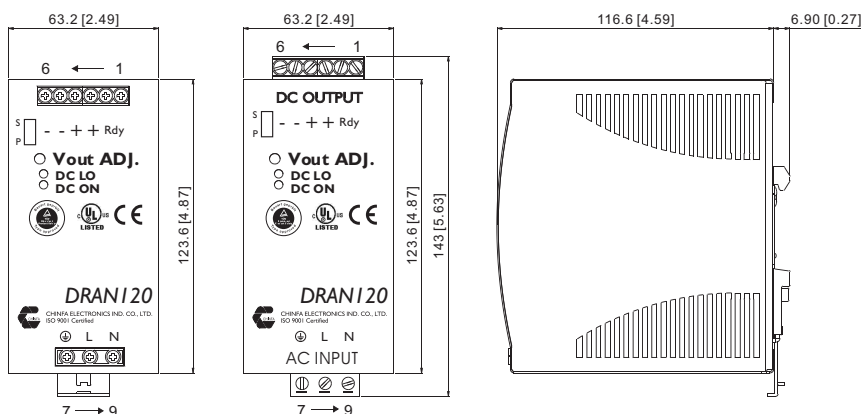
Note: 1) For 24V Model Only
2) AL/BL Models without this function

PHYSICAL CHARACTERISTICS

CASE SIZE	
SCREW TERMINAL TYPE	123.6 x 63.2 x 123.6 mm 4.87 x 2.49 x 4.87 inches
DETACHABLE CONNECTOR TYPE	143 x 63.2 x 123.6 mm 5.63 x 2.49 x 4.87 inches
WEIGHT	920g

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.

INSTALLATION

- Ventilation / Cooling
 - Normal convection
 - All sides 25mm free space
 - For cooling recommended
- Connector size range
- Screw terminal:
 - 10-24AWG flexible / solid cable,
 - 8 m/m stripping at cable end recommends
- Detachable connector:
 - 14-24AWG flexible / solid cable,
 - 7 m/m stripping at cable end recommends

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			
3			V +	Positive output terminal
4			V +	Positive output terminal
5			V -	Negative output terminal
6	V -	Negative output terminal		
7	IN			
8			L	Input terminals (phase conductor, no polarity at DC input)
9			N	Input terminals (neuDRANI conductor, no polarity at DC input)
	OTHER			
			DC ON	Operation indicator LED
			DC LO	DC LOW voltage indicator LED
			Vout ADJ.	Trimmer-potentiometer for Vout adjustment
	S / P	Single / Parallel select switch (Except AL/BL Models)		

DERATING

