

# 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

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

## MODEL LIST

MODEL NO.	INPUT VOLTAGE	OUTPUT WATTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT	EFF. (min.)	EFF. <sup>1)</sup> (typ.)
<b>Single Output Models</b>						
DRAN I20-12x	115 / 230 VAC	120 WATTS	+ 12 VDC	10A	82%	84%
DRAN I20-24x	115 / 230 VAC	120 WATTS	+ 24 VDC	5A	84%	86%
DRAN I20-48x	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	L125 x W63.5 x D123.6			mm	
	Detachable connector type	L142 x W63.5 x D123.6			mm	
Cooling	Free air convection				mm	
Case material	Metal					

## SPECIFICATION

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

### 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, AC 115V selected	90		132	VAC
	Io nom AC 230V selected	186		264	VAC
	DC	210		370	VDC
Rated input current	Io nom		2.8 / 1.4		A
Line frequency	Vi nom, Io nom	47		63	Hz
Inrush current	Vi nom, Io nom	Vi : 115VAC		24	A
		Vi : 230VAC		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
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	0.9 Io max			3	unit	
Efficiency	Vi nom, Io nom, Po / Pi	Up to 87%, See model list				

### CONTROL AND PROTECTION

Characteristics	Conditions	min.	typ.	max.	unit
Input fuse		T3.15A / 250VAC internal			
Rated over load protection	Vi nom	110		145	%
Power Rdy (for 24V model 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	%
Output short circuit	Vi nom, Io nom	Current limited			

## SPECIFICATION

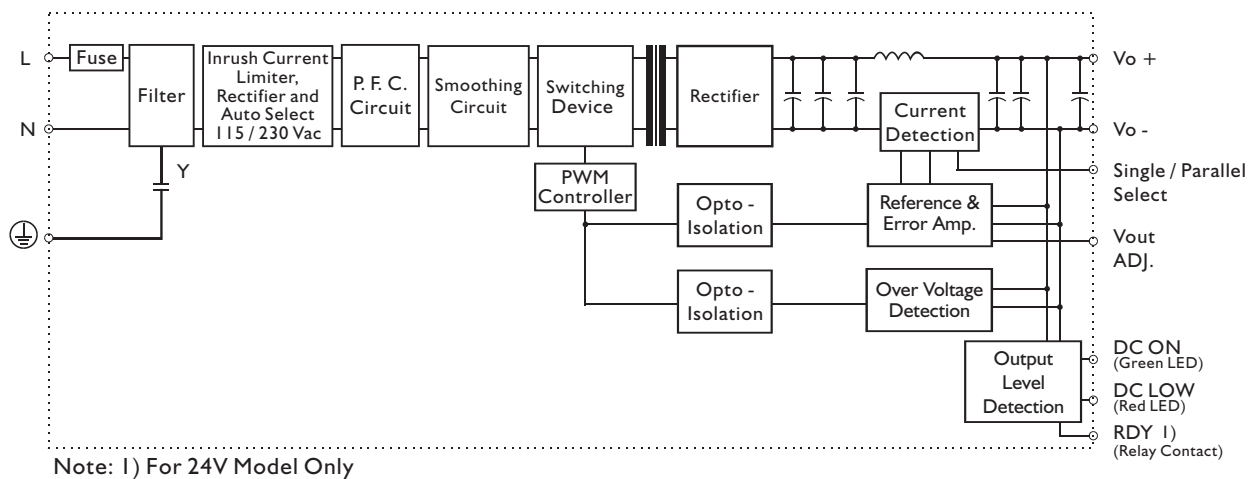
All Specifications Typical At Nominal Line, Full Load, 25°C Unless Otherwise Noticed

## APPROVALS AND STANDARDS

UL / cUL	UL508 Listed, UL60950-I Recognized
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



## PHYSICAL CHARACTERISTICS

CASE SIZE

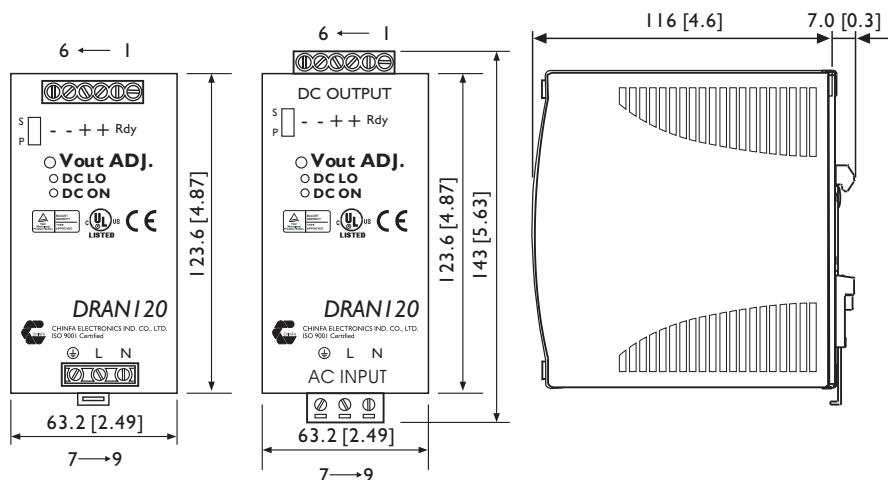
SCREW TERMINAL TYPE 125 x 63.5 x 123.6 mm 4.92 x 3.27 x 4.87 inches

DETACHABLE CONNECTOR TYPE 143 x 63.5 x 123.6 mm 5.63 x 3.27 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 25m/m 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	OUT	RDY
2		A normal open relay contact for DC ON level control (Never connect except 24V model)
3		V +
4		V +
5		V -
6	V -	Negative output terminal
7	IN	⊕
8		L
9		N
	OTHER	DC ON
		DC LO
		Vout ADJ.
		S / P

## DERATING

