

WRA480 SERIES



3PH AC - DC DIN RAIL MOUNTABLE
480W
INDUSTRIAL CONTROL EQUIPMENT

FEATURES

- 3 PHASE AC INPUT VOLTAGE
- COMPACT DESIGN
- HIGH EFFICIENCY UP TO 91%
- PARALLEL FUNCTION AVAILABLE (SWITCH)

SELECTION CHART

WRA 480 - 24

Wattage

24 : 24VOUT
48 : 48VOUT

MODEL LIST

MODEL NO.	INPUT VOLTAGE	OUTPUT WATTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT	EFF. (min.)	EFF. (typ.)
Single Output Models						
WRA480-24	3 ϕ 340~575VAC	480 WATTS	+ 24 VDC	20A	88%	90%
WRA480-48	3 ϕ 340~575VAC	480 WATTS	+ 48 VDC	10A	89%	91%

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			M Ω	
Ambient temperature	Operating at V_{inom}	-25		+ 71	°C	
Derating	V_i nom, from +61 to +71°C			2.5	% / °C	
Storage temperature	Non operational	-25		+ 85	°C	
Relative humidity	V_i nom, I_o nom	20		95	% RH	
Dimension	Screw terminal type	L124 x W150 x D118			mm	
Cooling	Free air convection					
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
Nominal Voltage *1			1 ϕ or 3 ϕ 380 / 480 VAC			
Rated input voltage	Io nom		400		500	VAC
Input voltage range	Ta min ... Ta max, Io nom	AC IN	340		575	VAC
		DC IN	480		820	VDC
Rated input current	Io nom	Vi : 380VAC		1.4		A
		Vi : 500VAC		1.0		A
Line frequency	Vi nom, Io nom		47		63	Hz
Inrush current	Vi nom, Io nom			15		A
P. F. C.	Vi : 500VAC, 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				\pm 1	%
Load regulation	Vi nom, Io min ... Io nom	single mode			\pm 1	%
		parallel mode			\pm 5	%
Temperature coefficient	Vi nom, Io min				\pm 0.02	% / °C
Ripple & noise	Vi nom, Io nom, BW = 20MHz				100	mV
Hold up time	Vi nom, Io nom		20			ms
Voltage trim range	Vi nom, Io nom	24V model	22.5		28.5	VDC
		48V model	47		56	VDC
DC ON indicator threshold at start up	Vi nom, Io nom	24V model	17.6		19.4	VDC
		48V model	37		43	VDC
DC LOW indicator threshold after start up	Vi nom, Io nom	24V model	17.6		19.4	VDC
		48V model	37		43	VDC
Parallel operation	0.9 Io max				2	unit
Efficiency	Vi nom, Io nom, Po / Pi		Up to 91%			

CONTROL AND PROTECTION

Characteristics	Conditions		min.	typ.	max.	unit
Input fuse			T3A / 350VAC internal / phase			
Rated over load protection	Vi nom		115		135	%
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	24V model	30		33	V
		48V model	60		68	V
Output short circuit	Vi nom	Continuous	Current limited			
		Discontinuous	Delay 3S shut-down, After 30S Auto-restart			
Over temperature	Detect on heatsink, shut down O/P voltage, recovers automatically after temperature goes down.		100		110	°C

*1. Single phase input is permissible, but output is derated to 75%.

SPECIFICATION

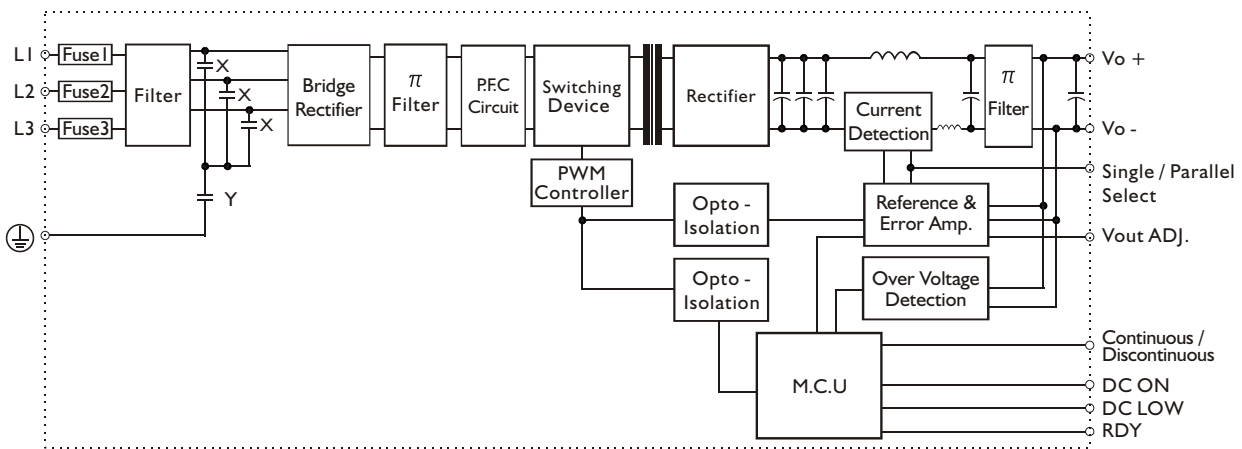
All Specifications Typical At Nominal Line, Full Load, 25°C Unless Otherwise Noticed

APPROVALS AND STANDARDS

UL / cUL	UL508 Listed, UL60950-I Recognized
TUV	EN60950-I
CE	EN61000-6-3, EN55022 class B, EN61000-3-2, EN61000-3-3 EN61000-6-2, EN55024

CIRCUIT SCHEMATIC

· Block diagram for WRA480series

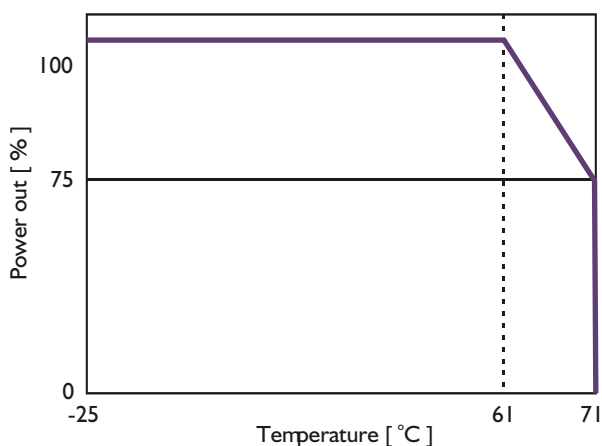


PHYSICAL CHARACTERISTICS

CASE SIZE

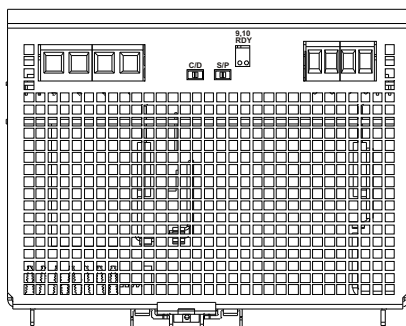
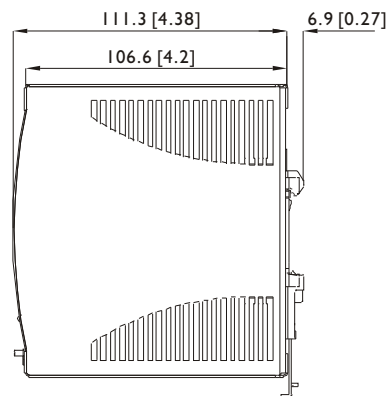
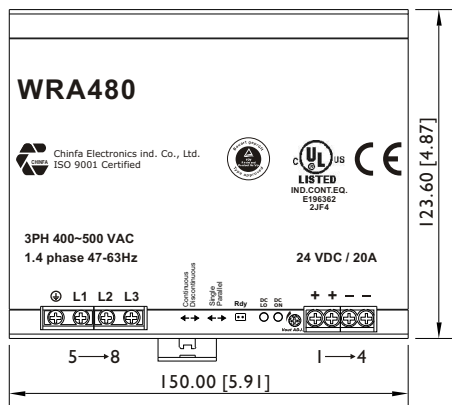
SCREW TERMINAL TYPE	124 x 150 x 118 mm 4.88 x 5.91 x 4.65 inches
WEIGHT	1750g

DERATING



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
- 10-24AWG flexible / solid cable,
- 8 m/m stripping at cable end recommends

PIN ASSIGNMENT

PIN NO.	Designation		Description
1	OUT	V +	Positive output terminal
2		V +	Positive output terminal
3		V -	Negative output terminal
4		V -	Negative output terminal
5	IN	⊕	Ground this terminal to minimize high-frequency emissions
6		L1	Input terminals
7		L2	Input terminals
8	OUT	L3	Input terminals
9		RDY	A normal open relay contact for DC ON level control (Never connect except 24V model)
10	OTHER	RDY	
		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
	C / D	Continuous / Discontinuous	