

# WRA240 SERIES



3PH AC - DC DIN RAIL MOUNTABLE  
240W  
INDUSTRIAL CONTROL EQUIPMENT

## FEATURES

- 3 PHASE AC INPUT VOLTAGE
- COMPACT DESIGN
- HIGH EFFICIENCY UP TO 90%
- PARALLEL FUNCTION AVAILABLE (SWITCH)

## SELECTION CHART

# WRA 240 - 24

Wattage  $\left\{ \begin{array}{l} 24 : 24VOUT \\ 48 : 48VOUT \end{array} \right.$

## MODEL LIST

MODEL NO.	INPUT VOLTAGE	OUTPUT WATTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT	EFF. (min.)	EFF. (typ.)
<b>Single Output Models</b>						
WRA240-24	3 $\phi$ 340~575VAC	240 WATTS	+ 24 VDC	10A	87%	89%
WRA240-48	3 $\phi$ 340~575VAC	240 WATTS	+ 48 VDC	5A	88%	90%

## 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 $\Omega$	
Ambient temperature	Operating at $V_{inom}$	-25		+ 71	$^{\circ}C$	
Derating	$V_i$ nom, from +61 to +71 $^{\circ}C$			2.5	% / $^{\circ}C$	
Storage temperature	Non operational	-25		+ 85	$^{\circ}C$	
Relative humidity	$V_i$ nom, $I_o$ nom	20		95	% RH	
Dimension	Screw terminal type	L123.6 x W89.0 x D110.7			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 $\phi$ or 3 $\phi$ 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		0.85		A
		Vi : 500VAC		0.7		A
Line frequency	Vi nom, Io nom		47		63	Hz
Inrush current	Vi nom, Io nom			10		A
P. F. C.	Vi : 500VAC, Io nom			0.6		

### 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 at 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 90%			

### CONTROL AND PROTECTION

Characteristics	Conditions		min.	typ.	max.	unit
Input fuse			2A / 600VAC 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				
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

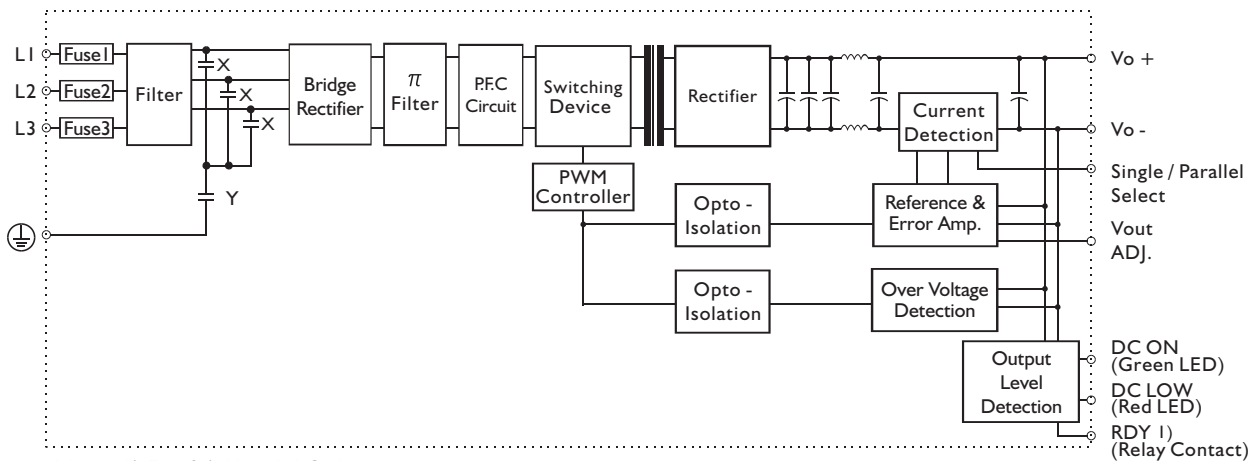
All Specifications Typical At Nominal Line, Full Load, 25°C Unless Otherwise Noticed

## APPROVALS AND STANDARDS

UL / cUL	UL508 Listed, UL60950-1 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 WRA240 series



Note: 1) For 24V Model Only

## PHYSICAL CHARACTERISTICS

CASE SIZE

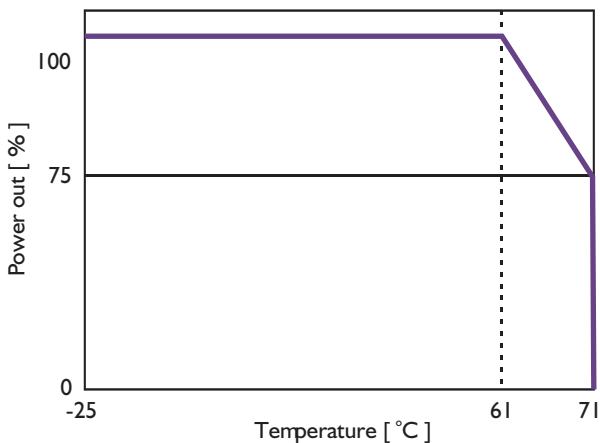
SCREW TERMINAL TYPE

123.6 x 89.0 x 110.7 mm (4.87 x 3.5 x 4.36 inches)

WEIGHT

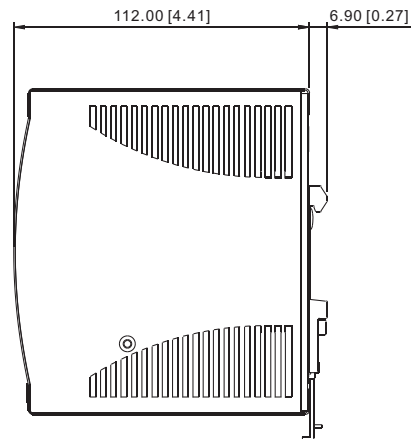
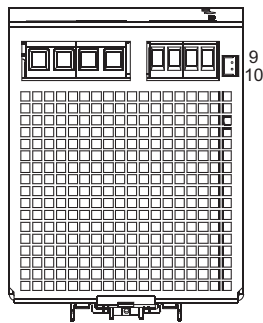
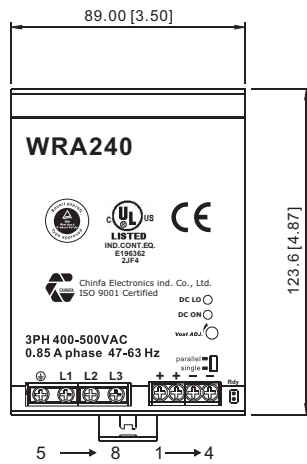
1100g

## 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 +
2		V +
3		V -
4		V -
5	IN	⊕
6		L1
7		L2
8	L3	Input terminals
9	OUT	RDY
10		RDY
	OTHER	DC ON
		DC LO
		Vout ADJ.
		S / P