DRA240 / 300 SERIES

AC - DC DIN RAIL MOUNTABLE POWER SUPPLY
INDUSTRIAL CONTROL EQUIPMENT

FEATURES

- PFC FUNCTION AVAILABLE
- PARALLEL FUNCTION AVAILABLE (SWITCH)
- INPUT VOLTAGE 115/230VAC AUTO SELECT
- SELV COMPONENTS DESIGN
- 3 YEARS WARRANTY

c UL us LISTED IND. CONT. EQ. UL 508 | c UL us Class I, Div 2 | c UL us UL 60950-1 | TÜV SÜD c US UL 62368-1 | TÜV SÜD EN 62368-1 | TÜVRheinland CERTIFIED EN IEC 61558-1 EN 61558-2-16 www.tuv.com | CE UK CA

SELECTION CHART

DRA 240 - 24 x

- 240 : Wattage
- 24 : 24V OUT, 48 : 48V OUT
- A : SCREW TERMINAL TYPE, B : DETACHABLE CONNECTOR TYPE

MODEL LIST

MODEL NO.	INPUT VOLTAGE	OUTPUT WATTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT	EFF. (min.)	EFF. (typ.)
Single Output Models						
DRA240-24x	115 / 230 VAC	240 WATTS	+ 24 VDC	10 A	87%	89%
DRA240-48x	115 / 230 VAC	240 WATTS	+ 48 VDC	5 A	88%	90%
DRA300-24x	115 / 230 VAC	300 WATTS	+ 24 VDC	12.5A	87%	89%
DRA300-48x	115 / 230 VAC	300 WATTS	+ 48 VDC	6.25A	88%	90%

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			40		KHz
Isolation voltage	Input-Output		3,000 / 4,242			VAC / VDC
	Input-PE		1,768 / 2,500			VAC / VDC
	Output-PE		500 / 710			VAC / VDC
Isolation resistance	Input-Output, @ 500VDC		100			MΩ
Ambient temperature	Operating at Vi nom	DRA240	-40		+ 71	°C
		DRA300	-30		+ 71	°C
Derating (see derating curve)	Vi nom, from +61 to +71°C	DRA240			2.5	% / °C
	Vi nom, from +56 to +71°C	DRA300			2.5	% / °C
Storage temperature	Non operational		-40		+ 85	°C
Relative humidity	Vi nom, Io nom		20		95	% RH
Temperature coefficient	Vi nom, Io min				± 0.03	% / °C
MTBF	Bellcore Issue 6 @40°C, GB	DRA240-24x		481,000		Hours
		DRA240-48x		568,000		Hours
		DRA300-24x		437,000		Hours
		DRA300-48x		468,000		Hours
Altitude during operation	EN 62368-1				5,000	m

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GENERAL

Characteristics	Conditions	min.	typ.	max.	unit
Dimension	Screw terminal type		L124.5 x W83.5 x D123.6		mm
	Detachable connector type		L143.5 x W83.5 x D123.6		mm
Cooling	Free air convection				
Installation position	Vertical (other direction may derating using)				
Pollution degree			2		

INPUT SPECIFICATIONS

Characteristics	Conditions			min.	typ.	max.	unit
Rated input voltage	Io nom				115 / 230 (auto select)		VAC
Absolute input max. range	Ta min ... Ta max, Io nom	AC in	115V selected	90		132	VAC
		AC in	230V selected	180		264	VAC
		DC in		210		375	VDC
Input current	Vi : 115 / 230 VAC, Io nom		DRA240		4.0 / 1.55		A
			DRA300		4.8 / 1.9		A
Rated input current	Vi : 90 / 180 VAC, Io nom		DRA240			5.4 / 2.2	A
			DRA300			6.0 / 3.0	A
Line frequency	Vi nom, Io nom			47		63	Hz
Inrush current	Vi : 115 / 230 VAC , Io nom		DRA240			30 / 60	A
			DRA300			35 / 65	A
Power dissipation	Vi : 230 VAC, Io nom		DRA240(24V/48V)		35 / 32		W
			DRA300(24V/48V)		42 / 40		W
Leakage current	Input-Output					0.25	mA
	Input-PE					3.5	mA
Power factor (Passive)	Vi : 230VAC, Io nom		DRA240 / DRA300		0.75		

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	%
Voltage trim range	Vi nom, 0.8 Io nom	24V	22.5		28.5	VDC
		48V	47		56	VDC
Rated continuous loading	Vi nom	DRA240-24x	10A @ 24Vdc / 8.4A @ 28.5 Vdc			
		DRA240-48x	5A @ 48Vdc / 4.2A @ 56 Vdc			
		DRA300-24x	12.5A @ 24Vdc / 10.5A @ 28.5 Vdc			
		DRA300-48x	6.25A @ 48Vdc / 5.35A @ 56 Vdc			
Hold up time	Vi : 115 / 230 VAC , Io nom		25 / 30			ms
Turn on time	Vi nom, Io nom				2,500	ms
	Vi nom, Io nom → with 7000 μF CAP				2,500	ms
Rise time	Vi nom, Io nom				150	ms
	Vi nom, Io nom → with 7000 μF CAP				500	ms
Fall time	Vi nom, Io nom				150	ms
Transient recovery time	Vi nom, 1~0.5 Io nom				2	ms
Ripple & noise	Vi nom, Io nom,BW = 20MHz				100	mV
Power back immunity	Vi nom, Io nom	24V / 48V	35 / 63			VDC
Capacitor load	Vi nom, Io nom				7,000	μF
DC ON indicator threshold at start up (Green LED)	Vi nom, Io nom	24V	17.6		19.4	VDC
		48V	37		43	VDC
DC LOW indicator threshold after start up (Red LED)	Vi nom, Io nom	24V	17.6		19.4	VDC
		48V	37		43	VDC
Parallel operation	0.1 Io min ~ 0.9 Io max				3	unit
Efficiency	Vi nom, Io nom, Po / Pi		Up to 90%, See model list and typ efficiency curve			

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CONTROL AND PROTECTION

Characteristics	Conditions		min.	typ.	max.	unit
Input fuse		DRA240		T6.3A / 250VAC internal		
		DRA300		T8A / 250VAC internal		
Internal surge voltage protection	IEC 61000-4-5			Varistor		
Rated over load protection	Vi nom (see typ current limited curve)		120		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, 0.8 Io nom (Auto Recovery)	24V	30		33	V
		48V	60		66	V
Output short circuit				Fold forward		
Degree of protection				IP20		

APPROVALS AND STANDARDS

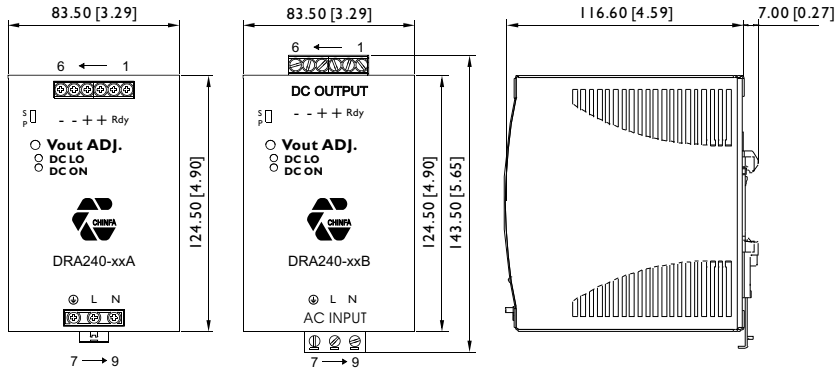
UL / cUL	UL 508 Listed UL 60950-1 Recognized ISA 12.12.01(Class I, Division 2, Groups A, B, C and D)
TUV	BS EN / EN 62368-1 EN 61558-1, EN 61558-2-16 (meet EN 60204-1)
cTUVus	UL 62368-1
CE	BS EN / EN 61000-6-3, BS EN / EN 55032 Class B, BS EN / EN 61000-3-2 Class A/D, BS EN / EN 61000-3-3 BS EN / EN 61000-6-2, BS EN / EN 55035, BS EN / EN 61000-4-2 Level 4, BS EN / EN 61000-4-3 Level 3 BS EN / EN 61000-4-4 Level 4, BS EN / EN 61000-4-5 Level 4 BS EN / EN 61000-4-6 Level 3, BS EN / EN 61000-4-8 Level 4, BS EN / EN 61000-4-11 DD ENV / ENV 50204 Level 2, BS EN / EN 61204-3, CISPR 32
CCC	GB4943.1, GB/T9254.1, GB17625.1 (for DRA240 model only)
Vibration resistance	meet IEC 60068-2-6 (Mounting on rail : 10-500 Hz, 2G, along X, Y, Z each Axis, 60 min for each Axis)
Shock resistance	meet IEC 60068-2-27 (15G, 11ms, 3 Axis, 6 Faces, 3 times for each Face)

PHYSICAL CHARACTERISTICS

Case size	Screw terminal type	124.5 x 83.5 x 123.6 mm (4.9 x 3.29 x 4.87 inches)
	Detachable connector type	143.5 x 83.5 x 123.6 mm (5.65 x 3.29 x 4.87 inches)
Case material	Metal	
Weight	DRA240 : 1380g	DRA300 : 1400g
Packing	DRA240 : 1.5kg ; 16pcs / 25kg / 2.01CUFT	DRA300 : 1.53kg ; 16pcs / 25.5kg / 2.01CUFT

MECHANISM & PIN CONFIGURATION

mm [inch]



GENERAL TOLERANCE	
0.00[0.00] - 30.00[1.18]	±0.30[0.01]
30.00[1.18] - 120.00[4.72]	±0.50[0.02]
120.00[4.72] - 400.00[15.75]	±0.80[0.03]

CONSTRUCTION

Easy snap-on mounting onto the DIN-Rail (TS35/7.5 or TS35/15), unit sits safely and firmly on the rail.

INSTALLATION

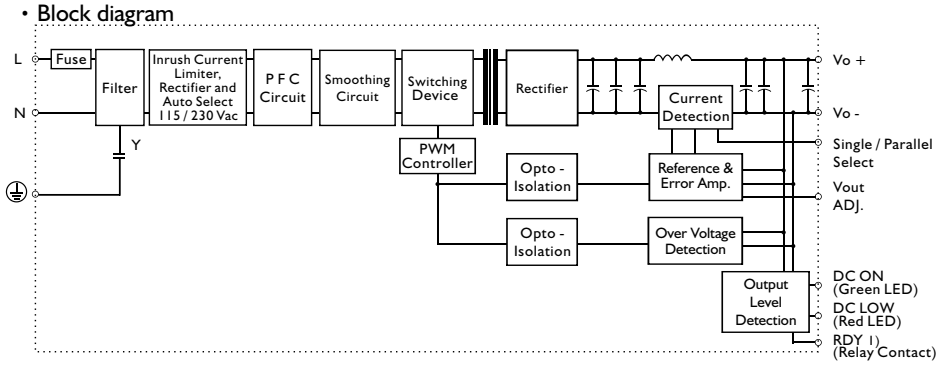
Ventilation / Cooling
Normal convection
All sides 25mm free space
For cooling recommended
Connector size range
Screw terminal:
AWG24-10 (0.2~4mm^2) flexible / solid cable,
-Input connector can withstand torque at maximum 9 pound-inches.
-Output connector can withstand torque at maximum 5.5 pound-inches.
8 m/m stripping at cable end recommends
Detachable connector:
AWG24-12 (0.2~2.5mm^2) flexible / solid cable,
-Input connector can withstand torque at maximum 4.5 pound-inches.
-Output connector can withstand torque at maximum 7 pound-inches.
4~5 m/m stripping at cable end recommends
Use copper conductors only, 60 / 75°C

PIN ASSIGNMENT

PIN NO.	Designation		Description
1 2	OUT	RDY	A normal open circuit of PhotoMOS Relay (24V model only)
3, 4	OUT	V +	Positive output terminal
5, 6	OUT	V -	Negative output terminal
7	IN	⏚	Ground this terminal to minimize high-frequency emissions
8	IN	L	Input terminals (phase conductor, no polarity at DC input)
9	IN	N	Input terminals (neutral conductor, no polarity at DC input)
	OTHER	DC ON	Operation indicator LED
	OTHER	DC LO	DC LOW voltage indicator LED
	OTHER	Vout ADJ.	Trimmer-potentiometer for Vout adjustment
	OTHER	S / P	Single / Parallel select switch

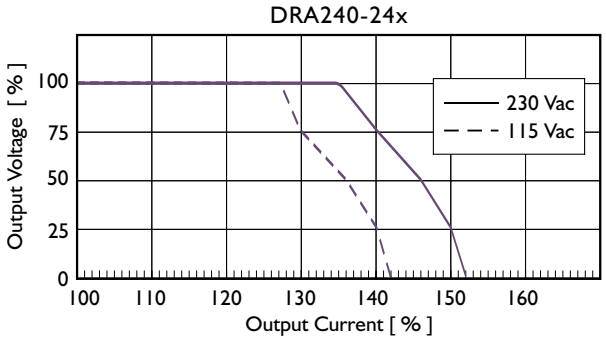
CIRCUIT SCHEMATIC

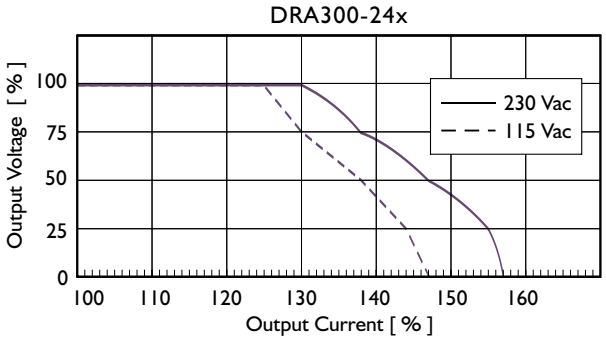
• Block diagram



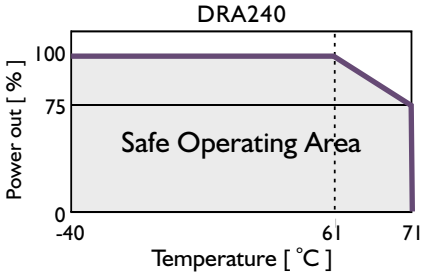
Note: 1) For 24V Model Only

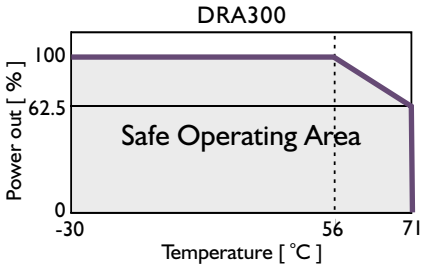
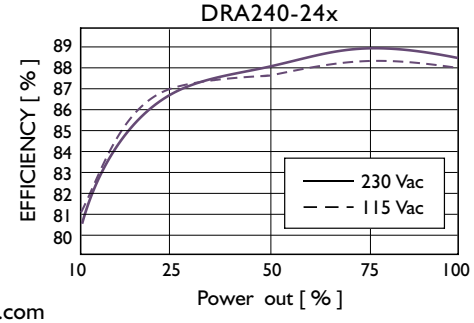
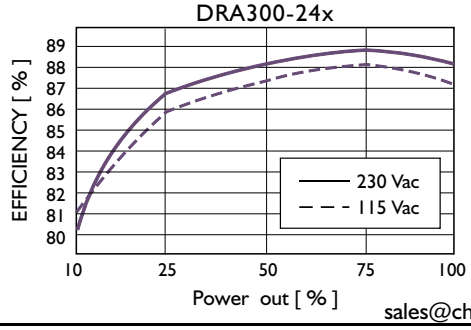
TYP. CURRENT LIMITED CURVE





DERATING CURVE

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