

DRE480 SERIES



AC - DC DIN RAIL MOUNTABLE POWER SUPPLY
INDUSTRIAL CONTROL EQUIPMENT

FEATURES

- HIGH EFFICIENCY 94%
- BUILT-IN ACTIVE PFC
- 150% PEAK LOAD CAPABILITY
- SELV COMPONENTS DESIGN
- SHORT CIRCUIT PROTECTION
- PARALLEL FUNCTION
- 3 YEARS WARRANTY



SELECTION CHART

DRE 480 - 24 A

Wattage — 24 : 24V OUT — SCREW TERMINALS TYPE
48 : 48V OUT

MODEL LIST

MODEL NO.	INPUT VOLTAGE	OUTPUT WATTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT	EFF. (min.)	EFF. (typ.)
Single Output Models						
DRE480-24A	88 ~ 264 VAC	480 WATTS	+ 24 VDC	20A	91%	93%
DRE480-48A	88 ~ 264 VAC	480 WATTS	+ 48 VDC	10A	92%	94%

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			90		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
	Input-Output, @ 500VDC		100			MΩ
Isolation resistance	Input-Output, @ 500VDC		100			MΩ
Ambient temperature	Operating at Vi nom		-40		+ 71	°C
Derating (see derating curve)	Vi nom, from + 55 to + 71 °C				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	24V		440,000		Hours
		48V		410,000		Hours
Altitude during operation	EN 62368-1				5,000	m
Dimension	Screw terminal type		L124.5 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		100		240	VAC
Input voltage range	Ta min ... Ta max, Io nom	AC in	88		264	VAC
		DC in	120		375	VDC



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INPUT SPECIFICATIONS

Characteristics	Conditions	min.	typ.	max.	unit
Input current	Vi : 115 / 230 VAC, Io nom		4.8 / 2.4		A
Rated input current	Vi : 88 VAC, Io nom			6.5	A
Line frequency	Vi nom, Io nom	47		63	Hz
Inrush current	Vi : 115 / 230 VAC, Io nom			24 / 48	A
Power dissipation	Vi : 230 VAC, Io nom		37		W
Leakage current	Input-Output			0.25	mA
	Input-PE			3.5	mA
P.F.C (Active)	Vi : 115 / 230 VAC, Io nom		0.99 / 0.95		

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			± 1	%
Load regulation	Vi nom, Io min ...Io nom			± 1	%
Peak power I)	Vi nom			720	W
Voltage trim range	Vi nom, 0.8 Io nom	24V 48V	22.5 47	28 56	VDC VDC
Rated continuous loading	Vi nom	24V 48V	20 A @ 24Vdc / 17.1 A @ 28 Vdc 10 A @ 48Vdc / 8.5 A @ 56 Vdc		
Hold up time	Vi : 115 / 230 VAC, Io nom	18			ms
Turn on time	Vi nom, Io nom			1,500	ms
	Vi nom, Io nom → with 10000 µF CAP			3,000	ms
Rise time	Vi nom, Io nom			150	ms
	Vi nom, Io nom → with 10000 µF CAP			500	ms
Fall time	Vi nom, Io nom			150	ms
Transient recovery time	Vi nom, I ~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 VDC
Capacitor load	Vi nom, Io nom			10,000	µF
DC ON indicator threshold at start up (Green LED)	Vi nom, Io nom	24V 48V	17.6 37	19.4 43	VDC VDC
DC LOW indicator threshold after start up (Red LED)	Vi nom, Io nom	24V 48V	17.6 37	19.4 43	VDC VDC
Parallel operation	0.1 Io min~0.9 Io max			3	unit
Efficiency	Vi nom, Io nom, Po / Pi		Up to 94%, See model list and typ efficiency curve		

NOTE 1 : 3 sec or 20% duty cycle max, and the average output power should not exceed the rated power.

CONTROL AND PROTECTION

Characteristics	Conditions	min.	typ.	max.	unit
Input fuse		T8A / 250VAC internal			
Internal surge voltage protection	IEC 61000-4-5	Varistor			
Rated over load protection	Vi nom (see typ current limited curve)	110		150	%
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 80VDC			0.6	A
Over voltage protection	Vi nom, 0.8 Io nom	24V	29	33	V
	(Auto-restart protect)	48V	58	63	V
Output short circuit		Auto-restart			
Over temperature	Detect on heat sink, shut down O/P voltage, recovers automatically after temperature goes down.	100		110	°C
Degree of protection		IP20			

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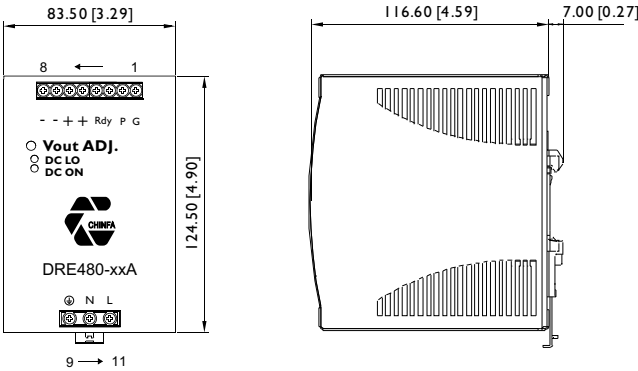
APPROVALS AND STANDARDS	
UL / cUL	UL 508 Listed, UL 121201 (Class I, Division 2, Groups A, B, C and D)
cTUVus	UL 62368-I
TUV	EN 62368-1, EN 61558-1, EN 61558-2-16 (meet EN 60204-1)
CE	BS EN / EN 61000-6-3, BS EN / EN 55032 Class B, CISPR32, BS EN / EN 61000-3-2 Class A / D, BS EN / EN 61000-3-3 BS EN / 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
Vibration resistance	meet IEC 60068-2-6 (Mounting by rail : Random wave, 10-500 Hz, 2G, each along X, Y, Z axes 10 min / cycle, 60 min)
Shock resistance	meet IEC 60068-2-27 (Half sine wave, 4G, 22ms, 3 axes, 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)
Case material	Metal	
Weight	1500g	
Packing	1.6kg ; 16 pcs / 27kg / 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.

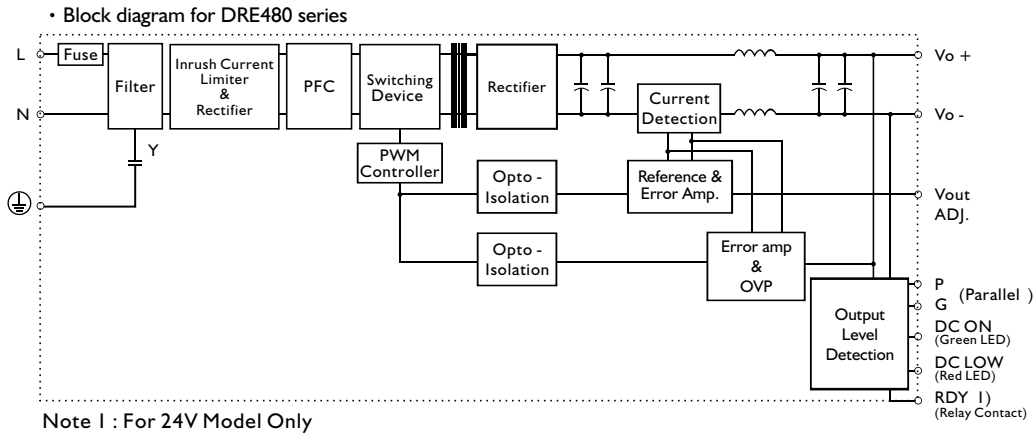
INSTALLATION

- Ventilation / Cooling
- Normal convection
- All sides 25mm free space
- For cooling recommended
- Connector size range
- Screw terminal:
- Input and output:
- AWG20-10 (0.5~5mm²) flexible / solid cable.
- Rdy and P. G. control:
- AWG24-10 (0.2~4mm²) 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
- Use copper conductors only, 60 / 75°C

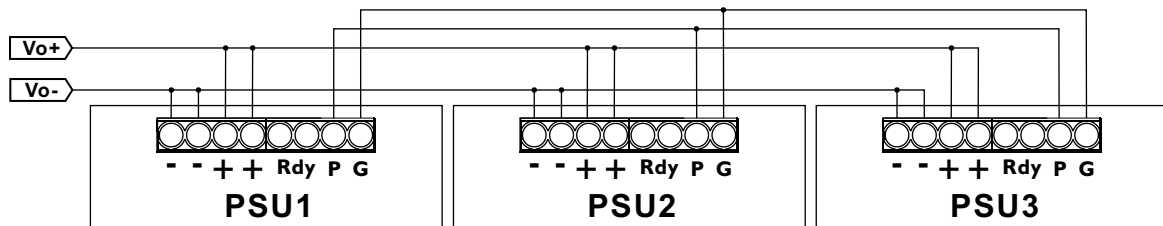
PIN ASSIGNMENT

PIN NO.	Designation	Description
3	OUT	RDY
4		A normal open circuit of PhotoMOS Relay (24V model only)
5, 6		V +
7, 8		V -
9	IN	⊕
10		N
11		L
	OTHER	DC ON
		DC LO
		Vout ADJ.
1		P
2		G
		Operation indicator LED
		DC LOW voltage indicator LED
		Trimmer-potentiometer for Vout adjustment
		Parallel PIN for current share
		Parallel GND PIN for current share

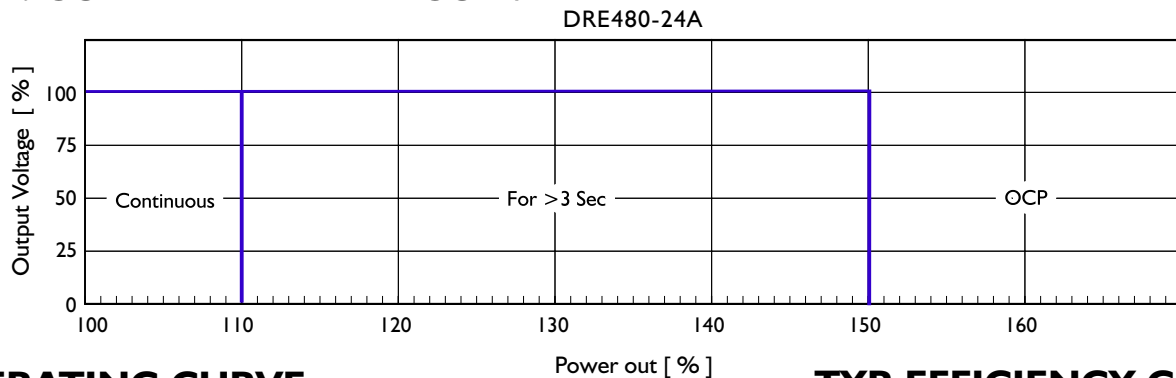
CIRCUIT SCHEMATIC



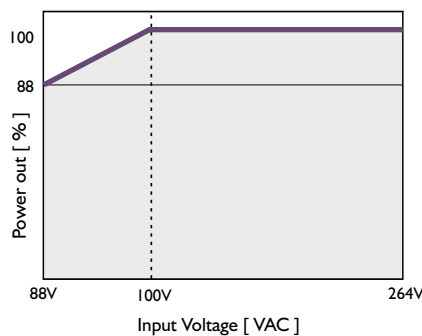
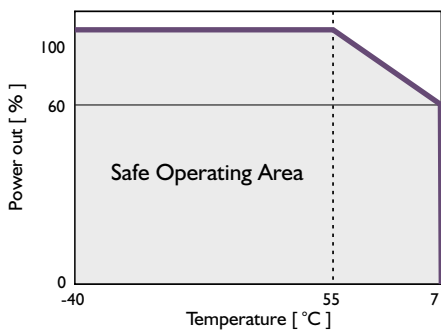
Parallel Connection



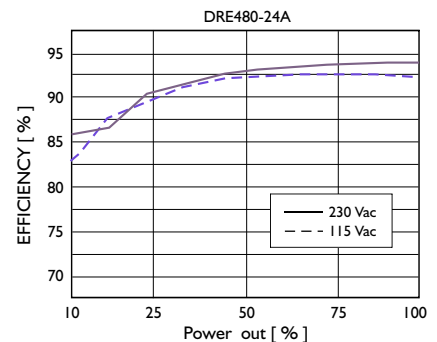
TYP. CURRENT LIMITED CURVE



DERATING CURVE



TYP. EFFICIENCY CURVE



PEAK LOADING

