

DINergy™ MDP100-XX-2C SERIES



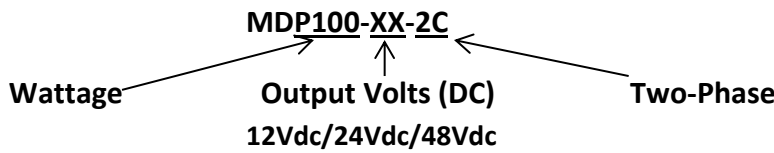
2PH / Single PH AC - DC DIN RAIL MOUNTABLE
POWER SUPPLY
INDUSTRIAL CONTROL EQUIPMENT

FEATURES

- 2 PHASE / Single PHASE HIGH AC INPUT VOLTAGE
- COMPACT DESIGN
- 3 YEARS WARRANTY



SELECTION CHART



2 ϕ /1 ϕ 340~575VAC	100.8 WATTS	+ 12 VDC	8400 mA	84%	86%
2 ϕ /1 ϕ 340~575VAC	100.8 WATTS	+ 24 VDC	4200 mA	85%	87%
2 ϕ /1 ϕ 340~575VAC	100.8 WATTS	+ 48 VDC	2100 mA	87%	89%

SPECIFICATION

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

GENERAL

Characteristics	Conditions	min.	typ.	max.	unit
Switching frequency	V _i nom, I _o nom		85		KHz
Isolation voltage	Input-Output	3000 / 4242			VAC / VDC
	Input-FG	1500 / 2121			VAC / VDC
	Output-FG	500 / 710			VAC / VDC
Isolation resistance	Input-Output, @ 500VDC	100			M Ω
Ambient temperature	Operating at V _i nom	-40		+ 71	°C
Derating (see derating curve)	V _i nom, from +61 to +71°C			2.5	% / °C
Storage temperature	Non operational	-40		+ 85	°C
Relative humidity	V _i nom, I _o nom	20		95	% RH
Temperature coefficient	V _i nom, I _o min			± 0.03	% / °C
MTBF	Bellcore Issue 6 @40°C, GB	12V model		622000	Hours
		24V model		661000	Hours
		48V model		672000	Hours
Altitude during operation	IEC 60068-2-13			4850	m
Dimension	Screw terminal type		L90 x W54 x D114		mm
Cooling	Free air convection				
Installation position	Vertical (other direction may derating using)				
Pollution degree			2		

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INPUT SPECIFICATIONS

Characteristics	Conditions		min.	typ.	max.	unit
Nominal voltage			I ϕ or ϕ 2380 / 480VAC			
Rated input voltage	I _o nom		400		500	VAC
Absolute input max. range	T _a min ... T _a max,	AC in	340		575	VAC
		DC in	480		820	VDC
Input current	V _i : 400 / 500 VAC, I _o nom			0.48 / 0.41		A
Rated input current	V _i : 340 VAC, I _o nom				0.75	A
Line frequency	V _i nom, I _o nom		47		63	Hz
Inrush current	V _i nom, I _o nom			10	12	A
Power dissipation	V _i : 400 VAC, I _o nom	12V model		15		W
		24V model		13.5		W
		48V model		10.5		W
Leakage current	Input-Output				0.25	mA
	Input-FG				3.5	mA
P.F.C. (Passive)	V _i nom, I _o nom			0.55		

OUTPUT SPECIFICATIONS

Characteristics	Conditions		min.	typ.	max.	unit
Output voltage accuracy (Adjusted before shipment)	V _i nom, I _o max		0		+ 1	%
Minimum load	V _i nom		0			%
Line regulation	I _o nom, V _i min ... V _i max				± 1	%
Load regulation	V _i nom, I _o min ... I _o nom	single mode			± 1	%
		parallel mode			± 5	%
Voltage trim range	V _i nom, 0.8 I _o nom	12V model	11.4		14.5	VDC
		24V model	22.5		28.5	VDC
		48V model	47		56	VDC
Rated continuous loading	V _i nom	12V model	8.4 A @ 12Vdc / 6.9 A @ 14.5 Vdc			
		24V model	4.2 A @ 24Vdc / 3.5 A @ 28.5 Vdc			
		48V model	2.1 A @ 48Vdc / 1.8 A @ 56 Vdc			
Hold up time	V _i nom, I _o max		20			ms
Turn on time	V _i nom, I _o nom				1000	ms
	V _i nom, I _o nom → 12V, 24V models : with 7000 μ F CAP 48V model : with 3500 μ F CAP				1500	ms
Rise time	V _i nom, I _o nom				150	ms
	V _i nom, I _o nom → 12V, 24V models : with 7000 μ F CAP 48V model : with 3500 μ F CAP				500	ms
Fall time	V _i nom, I _o nom				150	ms
Transient recovery time	V _i nom, I _o ~ 0.5 I _o nom				2	ms
Ripple & noise	V _i nom, I _o nom, BW = 20MHz				50	mV
Power back immunity	V _i nom, I _o nom	12V model	18			VDC
		24V model	35			VDC
		48V model	63			VDC
Capacitor load	V _i nom, I _o nom	12V, 24V models			7000	μ F
		48V model			3500	μ F
DC ON indicator threshold at start up (Green LED)	V _i nom, I _o nom	12V model	10		11.2	VDC
		24V model	17.6		19.4	VDC
		48V model	37		43	VDC
DC LOW indicator threshold after start up (Red LED)	V _i nom, I _o nom	12V model	10		11.2	VDC
		24V model	17.6		19.4	VDC
		48V model	37		43	VDC
Parallel operation	0.1 I _o min ~ 0.9 I _o max				2	unit
Efficiency	V _i nom, I _o nom, P _o / P _i		Up to 89%, See model list and typ efficiency curve			

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CONTROL AND PROTECTION

Characteristics	Conditions	min.	typ.	max.	unit
Input fuse		2A / 600VAC internal			
Internal surge voltage protection	IEC 61000-4-5	Varistor			
Rated over load protection	Vi nom (see typ current limited curve)	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 (Auto Recovery)	12V model	14.5	17.4	VDC
		24V model	30	33	VDC
		48V model	60	66	VDC
Output short circuit		Hiccup mode			
Degree of protection		IP20			

APPROVALS AND STANDARDS

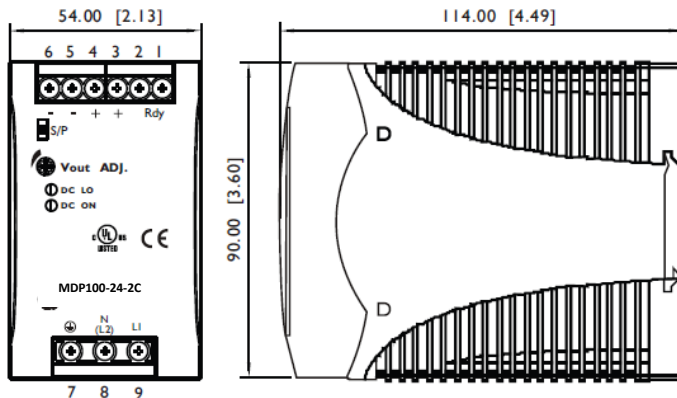
UL / cUL	UL 508 Listed UL 60950-1 Recognized
CE	EN 61000-6-3, EN 55022 Class B, EN 61000-3-2, EN 61000-3-3 EN 61000-6-2, EN 55024, EN 61000-4-2 Level 4, EN 61000-4-3 Level 3 EN 61000-4-4 Level 4, EN 61000-4-5 L-N Level 3, L / N-FG Level 4 EN 61000-4-6 Level 3, EN 61000-4-8 Level 4, EN 61000-4-11 ENV 50204 Level 2, EN 61204-3
Vibration resistance	meet IEC 60068-2-6 (Mounting by 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	90 x 54 x 114 mm (3.6 x 2.13 x 4.49 inches)
Case material	Plastic
Weight	500g
Packing	0.57kg ; 32s / 19.5kg / 1.85CUFT

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
AWG24-10 (0.2~4mm) 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

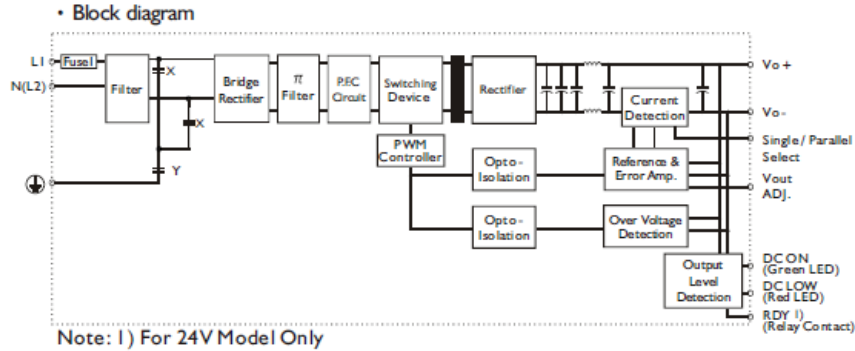
GENERAL TOLERANCE	
0.00[0.00] - 30.00[1.18]	±0.30[0.01]
30.00[1.18] - 120.00[4.72]	±0.50[0.02]

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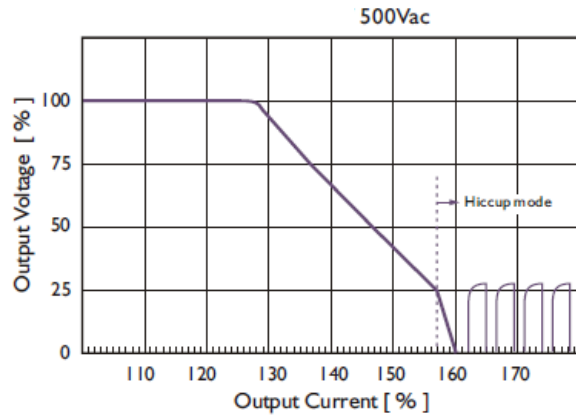
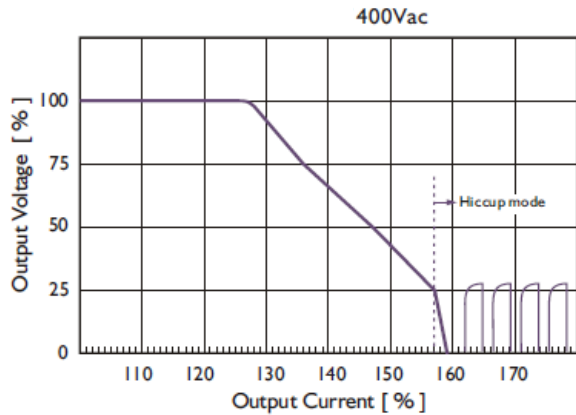
Pin Assignment and Front Controls

Pin No.	Designation	Description
1	RDY	NO relay contact for DC OK
2	RDY	NO relay contact for DC OK
3	V+	Positive output terminal
4	V+	Positive output terminal
5	V-	Negative output terminal
6	V-	Negative output terminal
7	GND	Ground terminal to minimise High frequency emissions
8	N or L2	Neutral or phase 2 (no polarity with DC input)
9	L1	Phase 1 (no polarity with DC input)
L1	DC ON	DC output ready LED
L2	DC LO	DC low indicator LED
POT1	Vout ADJ.	Trimmer for fine output voltage adjustment
SW1	S/P	Single / Parallel select switch

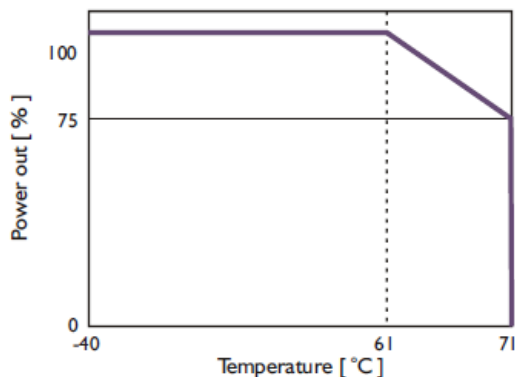
CIRCUIT SCHEMATIC



TYP. CURRENT LIMITED CURVE



DERATING CURVE



TYP. EFFICIENCY CURVE

