

DINergy™ MDP100-XX-2C SERIES



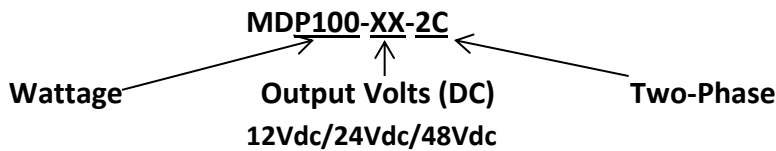
2PH / Single PH AC - DC DIN RAIL MOUNTABLE
POWER SUPPLY
INDUSTRIAL CONTROL EQUIPMENT

FEATURES

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



SELECTION CHART



2ø/1ø 340~575VAC	100.8 WATTS	+ 12 VDC	8400 mA	84%	86%
2ø/1ø 340~575VAC	100.8 WATTS	+ 24 VDC	4200 mA	85%	87%
2ø/1ø 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	Vi nom, Io 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			MΩ
Ambient temperature	Operating at Vi nom	-40		+ 71	°C
Derating (see derating curve)	Vi nom, from + 61 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	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		

DINergy™ MDP100-XX-2C SERIES

INPUT SPECIFICATIONS

Characteristics	Conditions	min.	typ.	max.	unit
Nominal voltage		I _ø or ø2380 / 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
	I _o nom, 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, single mode			± 1	%
	I _o min ... I _o nom, parallel mode			± 5	%
Voltage trim range	V _i nom, 12V model	11.4		14.5	VDC
	0.8 I _o nom, 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 μF CAP 48V model : with 3500 μF CAP			1500	ms
Rise time	V _i nom, I _o nom			150	ms
	V _i nom, I _o nom → 12V, 24V models : with 7000 μF CAP 48V model : with 3500 μF CAP			500	ms
Fall time	V _i nom, I _o nom			150	ms
Transient recovery time	V _i nom, I ~ 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	μF
	48V model			3500	μF
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			

DINergy™ MDP100-XX-2C SERIES

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		17.4	VDC
		24V model		33	VDC
		48V model		66	VDC
Output short circuit		Hiccup mode			
Degree of protection		IP20			

APPROVALS AND STANDARDS

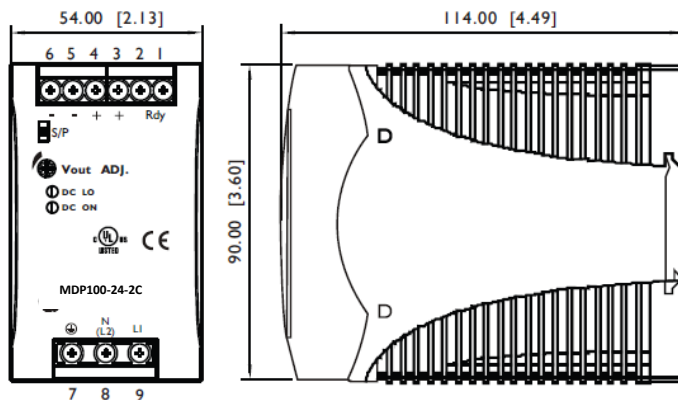
UL / cUL	UL 508 Listed UL 60950-1 Recognized
CE	EN 61000-6-3, EN 55022 Class B, EN 61000-3-2, EN 61000-3-3 EN 61000-6-2, EN 55024, EN 61000-4-2 Level 4, EN 61000-4-3 Level 3 EN 61000-4-4 Level 4, EN 61000-4-5 L-N Level 3, L / N-FG Level 4 EN 61000-4-6 Level 3, EN 61000-4-8 Level 4, EN 61000-4-11 ENV 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 (0.2~4mm³) 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]	

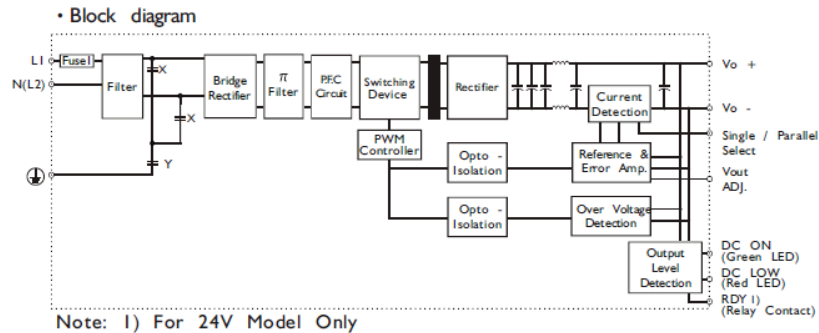
For full load DC operation: connect to any two of the L₁, L₂, input terminals.

DINergy™ MDP100-XX-2C SERIES

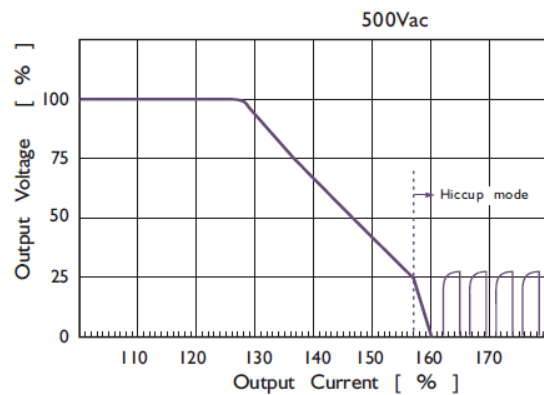
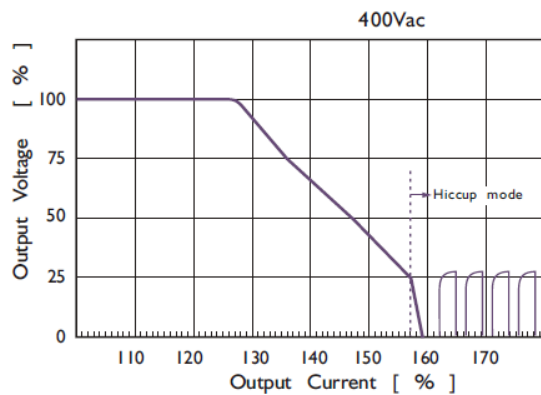
PIN ASSIGNMENT

PIN NO.	Designation		Description
1	OUT	RDY	A normal open relay contact for DC ON level control (Never connect except 24V model)
2			
3, 4		V +	Positive output terminal
5, 6		V -	Negative output terminal
7	IN		Ground this terminal to minimize high-frequency emissions
8		N (L2)	Input terminals (phase conductor, no polarity at DC input)
9		LI	Input terminals (neutral conductor, no polarity at DC input)
	OTHER	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

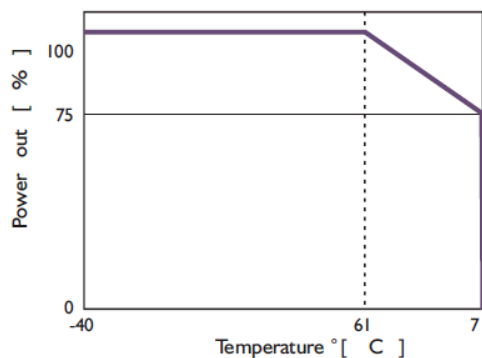
CIRCUIT SCHEMATIC



TYP. CURRENT LIMITED CURVE



DERATING CURVE



TYP. EFFICIENCY CURVE

