

AC - DC DIN Rail Mountable Power Supply **multicomp** PRO

RoHS
Compliant



Features

- Universal Input 85V AC to 264V AC
- Short Circuit Protection
- Internal Input Filter
- 3 years warranty

Model List

Model No.	Input Voltage	Output Wattage	Output Voltage	Output Current	EFF. (Min.)	EFF. (Typ.)
Single Output Models						
MP-DRAN30-12	85 ~ 264V AC	30 WATTS	+12V DC	2.5A	82%	84%
MP-DRAN30-24			+24V DC	1.24A	83%	86%
MP-DRAN30-48			+48V DC	0.625A		
MP-DRAN60-05		50 WATTS	+5V DC	10A	77%	79%
MP-DRAN60-12		60 WATTS	+12V DC	5A	84%	86%
MP-DRAN60-24			+24V DC	2.5A	86%	89%
MP-DRAN60-48			+48V DC	1.25A		

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	55		135	kHz
Isolation Voltage	Input - Output	3,000 / 4,242			V AC / V DC
	Input-FG	1,500 / 2,121			
	Output-FG	500 / 710			
Isolation Resistance	Input- Output, @ 500V DC	100			MΩ
Ambient Temperature	Operating at Vi nom	-40		+71	°C
Derating (see Derating curve)	Vi nom, from +61°C 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

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Characteristics	Conditions	Min.	Typ.	Max.	Unit
MTBF	MP-DRAN30			640000	Hours
	Bellcore Issue 6 @40°C, GB	12V		665000	
		24V		675000	
		48V		532000	
	MP-DRAN60	5V		556000	
	Bellcore Issue 6 @40°C, GB	12V		580000	
				596000	
Altitude During Operation	EN 62368-1			5,000	m
Dimension	Spring terminal type	L90 × W40.5 × D114			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	V AC
Absolute input max. Range	Ta min ... Ta max, AC in	85		264	V AC
	Io nom DC in	90		375	V AC
Input Current	Vi : 115 / 230 V AC, Io nom		560 / 330		mA
	MP-DRAN30-XX MP-DRAN60-XX MP-DRAN30 / 60		1,060 / 590	800 / 1,500	
Line Frequency	Vi nom, Io nom	47		63	Hz
Inrush current	Vi : 115 / 230V AC , Io nom			20 / 40 30 / 60	A
Power Dissipation	Vi : 230 VAC, Io nom	5V	8.5 / 12.5		W
		12V	5.6 / 9		
		24V	5.5 / 8.8		
		48V	4.9 / 7.8		
Leakage Current	Input-Output			0.25	mA
	Input-FG			3.5	mA

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				
Voltage trim Range	MP-DRAN30 & MP-DRAN60 Series Vi nom, 0.8 Io nom	5V	5	5.5	V DC
		12V	12	14	
		24V	24	28	
		48V	48	55	

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Characteristics	Conditions	Min.	Typ.	Max.	Unit		
Rated continuous loading	MP-DRAN30 series Vi nom 12V 24V 48V	2.5A @ 12V DC / 2.1A @ 14V DC 1.25A @ 24V DC / 1.05A @ 28V DC 0.625A @ 48V DC / 0.54A @ 55V DC					
	MP-DRAN60 series Vi nom 5V 12V 24V 48V	10A @ 5V DC / 9A @ 5.5V DC 5A @ 12V DC / 4.25A @ 14V DC 2.5A @ 24V DC / 2.1A @ 28V DC 1.25A @ 48V DC / 1.08A @ 55V DC					
Hold up Time	Vi : 115 / 230 V AC , Io nom	20 / 30			ms		
Turn on Time	Vi nom, Io nom Vi nom, Io nom →with Capacitor load			2,000 2,000	ms		
Rise Time	Vi nom, Io nom Vi nom, Io nom →with Capacitor load		150 500		ms		
Fall Time	Vi nom, Io nom			150	ms		
Transient Recovery Time	Vi nom, 1 to 0.5 Io nom			2	ms		
Ripple & Noise	Vi nom, Io nom, BW = 20MHz			50	mV		
Power Back Immunity	MP-DRAN30 & MP-DRAN60 Series Vi nom, Io nom 1 second	5V 12V 24V 48V	7.5 18 35 63			V DC	
	Capacitor Load	Vi nom, Io nom	MP-DRAN30 / 60		3,500 / 7,000	µF	
	DC ON indicator threshold at start up (Green LED)	Vi nom, Io nom	5V 12V 24V 48V	3.5 9.0 18 37		4.5 10.8 21.6 43	V DC
		Efficiency	Vi nom, Io nom, Po / Pi	Up to 89%, See model list and typ efficiency curve			

Control and Protection

Characteristics	Conditions	Min.	Typ.	Max.	Unit	
Input fuse		T2A / 250V AC 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)	18.8		19.6	V DC	
Over voltage protection	Vi nom, 0.8 Io nom (Auto Recovery)	5V 12V 24V 48V	6 15 30 60		6.8 16.5 33 66	V DC
	Output short circuit	Fold forward				
	Degree of protection	IP20				

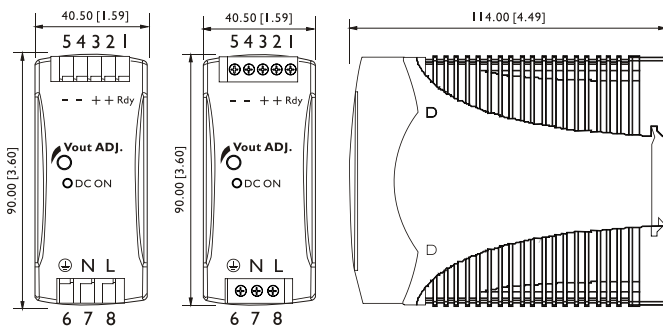
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Approvals and Standards	
UL / cUL	UL 508 Listed UL 60950-1, UL 1310 Class 2 Power (only 5V and DRAN60-12(A) w/o Class 2) Recognized ISA 12.12.01(Class I, Division 2, Groups A, B, C and D)
TUV	EN 62368-1 EN 61558-1, EN 61558-2-16 (meet EN 60204-1)
cTUVus	UL 62368-1
CE	EN 61000-6-3, EN 55032 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
CCC	GB4943.1, GB9254, GB17625.1
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	90mm × 40.5mm × 114mm (3.6 inches × 1.59 inches × 4.49 inches)
Case Material	Plastic
Weight	MP-DRAN30-XX : 270 g MP-DRAN60-XX : 340 g

Mechanism & Pin Configuration



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

Spring terminal:

AWG 24-14 (0.2~2mm²) flexible / solid cable, 10 m/m stripping at cable end recommends

Screw terminal:

AWG26-12 (0.2~2.5mm²) flexible / solid cable, connector can withstand torque at maximum 5 pound-inches

4-5m/m stripping at cable end recommends Use Copper Conductors only, 60/75°C

General Tolerance	
0[0.00] - 30[1.18]	±0.3[0.01]
30[1.18] - 120[4.72]	±0.5[0.02]

Dimensions : Millimetres (Inches)

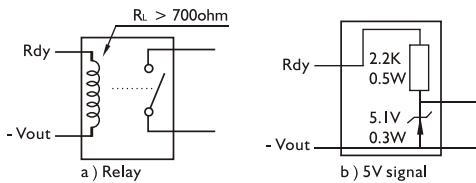
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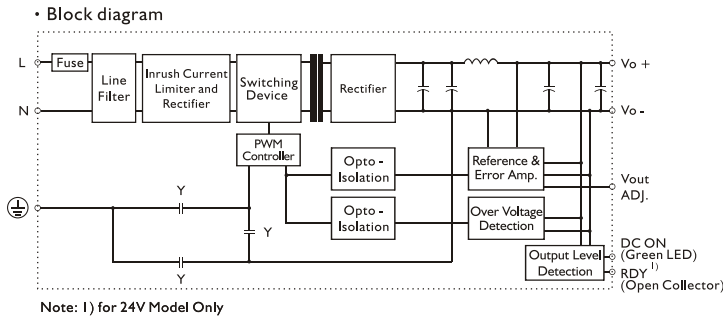
Pin Assignment

Pin No.	Designation	Description
1	Out	RDY
2		+
3		+
4		-
5		-
6	In	\oplus
7		N
8		L
	Other	Vout ADJ
		DC ON

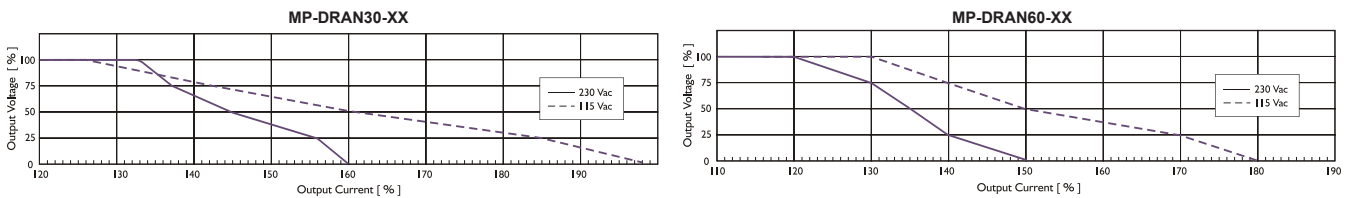
Fig. 1 Rdy connection



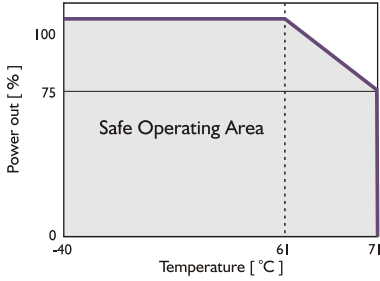
Circuit Schematic



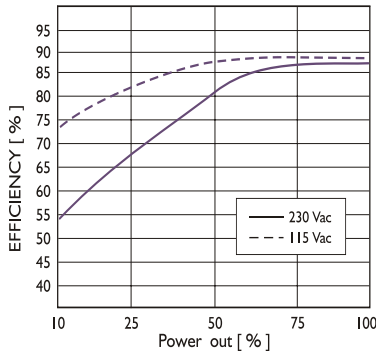
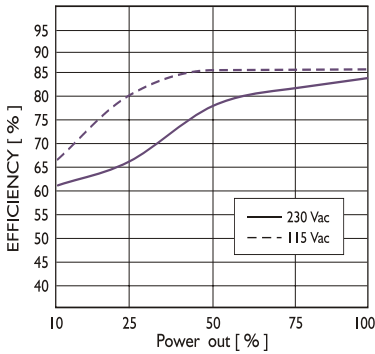
Typ. Current Limited Curve



Derating Curve



TYP. Efficiency Curve



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