30W / 60W AC to DC Power Supply - DIN Rail Mount

multicomp PRO

Features

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

RoHS Compliant

c UL us LISTED IND. CONT. EQ. UL 508 | c TÜV us Class I, Div 2 | c TÜV us UL 1310 | c TÜV us UL 60950-1 | EN 60950-1 | TÜV Rheinland Product Safety | EN 61558-1 EN 61558-2-16 | CE

Model List						
Model No.	**Input Voltage**	**Output Wattage**	**Output Voltage**	**Output Current**	**EFF. (Min.)**	**EFF. (Typ.)**
Single Output Models						
MP-DRAN30-48	85~264 V AC	30 WATTS	+ 48 VDC	0.625A	83%	86%
MP-DRAN60-12		60 WATTS	+ 12 VDC	5 A	84%	
MP-DRAN60-24			+ 24 VDC	2.5 A	86%	89%
MP-DRAN60-48			+ 48 VDC	1.25 A	86%	

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
MTBF	MP-DRAN30 5V Bellcore Issue 6 @40°C, GB 12V 24V 48V MP-DRAN60 5V Bellcore Issue 6 @40°C, GB 12V 24V 48V			612,000 640,000 665,000 675,000 532,000 556,000 580,000 596,000	Hours
Altitude During Operation	EN 60950-1			5,000	m
Dimension	Spring & Screw terminal type	L90 × W40.5 × 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
Rated input voltage	Io nom		100		240	V AC
Absolute input max. Range	Ta min ... Ta max, Io nom	AC in DC in	85 90		264 375	V AC V AC V DC
Input Current	Vi : 115 / 230 V AC, Io nom Vi : 115 / 230 VAC, Io nom	MP-DRAN30 MP-DRAN60		560 / 330 1,060 / 590		mA
Rated input Current	Vi : 85 VAC, Io nom	MP-DRAN30 / 60			800 / 1,500	mA
Line Frequency	Vi nom, Io nom		47		63	Hz
Inrush current	Vi : 115 / 230 VAC , Io nom	MP-DRAN30 MP-DRAN60			20 / 40 30 / 60	A
Power Dissipation	MP-DRAN30 / MP-DRAN60 series Vi : 230 VAC, Io nom	5V 12V 24V 48V		8.5 / 12.5 5.6 / 9 5.5 / 8.8 4.9 / 7.8		W
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				± 0.5	%
Voltage trim Range	MP-DRAN30 & MP-DRAN60 series Vi nom, 0.8 Io nom	5V 12V 24V 48V	5 12 24 48		5.5 14 28 55	V DC
Rated continuous loading	MP-DRAN30 series Vi nom	5V 12V 24V 48V	6 A @ 5Vdc / 5.4 A @ 5.5 V DC 2.5 A @ 12Vdc / 2.1 A @ 14 V DC 1.25 A @ 24Vdc / 1.05 A @ 28 V DC 0.625 A @ 48Vdc / 0.54 A @ 55 V DC			
	MP-DRAN60 series Vi nom	5V 12V 24V 48V	10 A @ 5Vdc / 9 A @ 5.5 V DC 5 A @ 12Vdc / 4.25 A @ 14 V DC 2.5 A @ 24Vdc / 2.1 A @ 28 V DC 1.25 A @ 48Vdc / 1.08 A @ 55 V DC			
Hold up Time	Vi : 115 / 230 V AC , Io nom		20 / 30			ms
Turn on Time	Vi nom, Io nom				2,000	ms
	Vi nom, Io nom	with Capacitor load			2,000	ms
Rise Time	Vi nom, Io nom			150		ms
	Vi nom, Io nom	with Capacitor load		500		ms

Characteristics	Conditions		Min.	Typ.	Max.	Unit
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 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 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			

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 60950-1 EN 61558-1, EN 61558-2-16 (meet EN 60204-1)
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)

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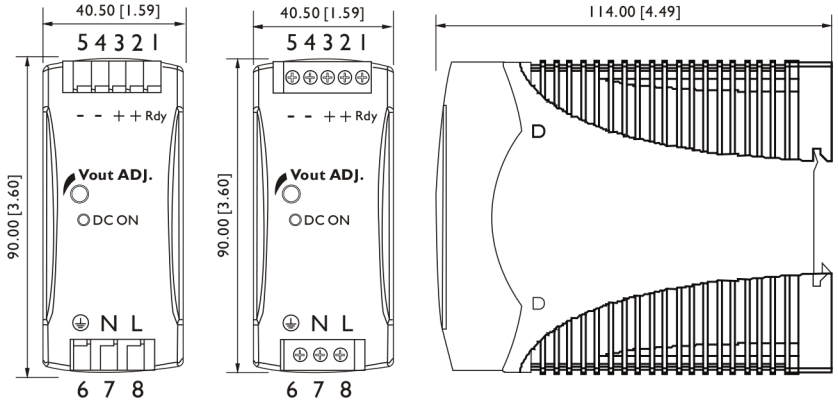
Physical Characteristics

Case Size	90mm × 40.5mm × 114mm (3.6 inches × 1.59 inches × 4.49 inches)	
Case Material	Plastic	
Weight	MP-DRAN30 : 270 g	MP-DRAN60 : 340 g

Mechanism & Pin Configuration



Dimensions : Millimetres

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:

AWG24-14 (0.2mm^2 to 2mm^2) flexible / solid cable,

10 m/m stripping at cable end recommends

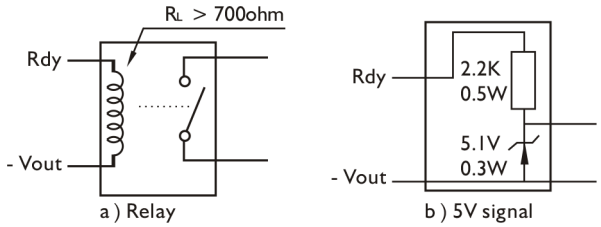
Use Copper Conductors only, 60/75°C

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

Pin Assignment

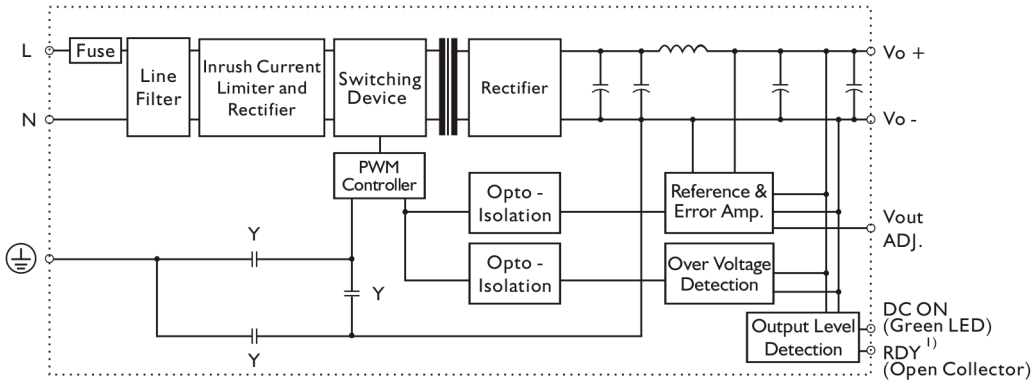
PIN NO.	Designation		Description
1	OUT	RDY	DC OK output for relay (not connect except 24V model)
3		+	Positive output terminal
4		+	Positive output terminal
5		-	Negative output terminal
6		-	Negative output terminal
7	IN	⏚	Ground this terminal to minimize high-frequency emissions
8		N	Input terminals (neutral conductor, no polarity at DC input)
		L	Input terminals (phase conductor, no polarity at DC input)
	OTHER	Vout ADJ.	Trimmer-potentiometer for Vout adjustment
		DC ON	Operation indicator LED

Fig. 1 Rdy connection



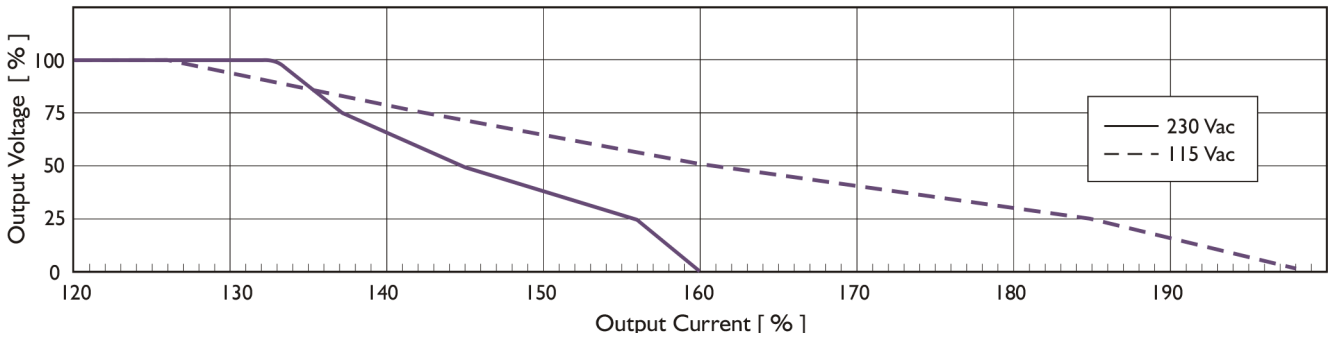
Circuit Schematic

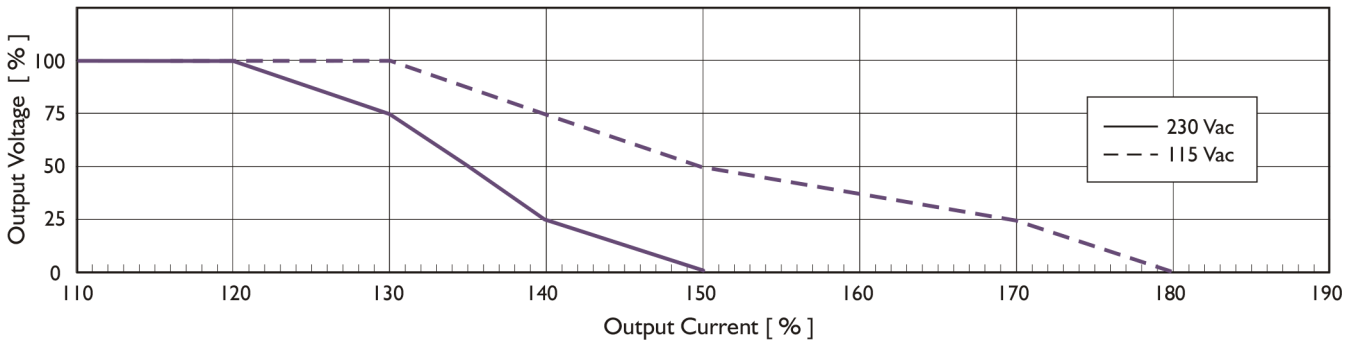
• Block diagram



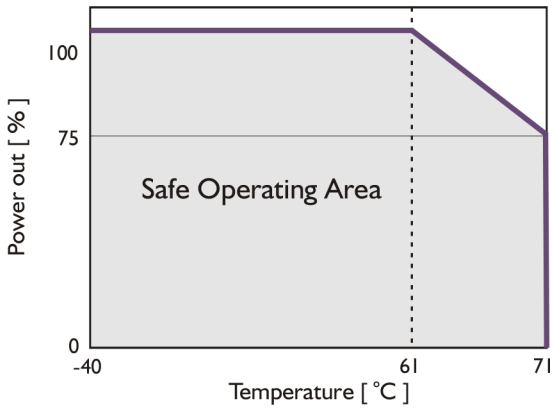
Note: 1) for 24V Model Only

Type Current Limited Curve





Derating Curve



Type Efficiency Curve