120W AC to DC Power Supply DIN Rail Mount

multicomp PRO

RoHS Compliant

Features

- PFC Function Available
- Parallel Function Available (Switch)
- Input Voltage 115/230V AC Auto Select
- Selv Components Design
- 3 Years Warranty

Model List						
Model No.	**Input Voltage**	**Output Wattage**	**Output Voltage**	**Output Current**	**EFF. (Min.)**	**EFF. (Typ.)**
Single Output Models						
MP-DRAN120-12A	115 / 230 V AC	120 WATTS	+12 V DC	10A	82%	84%
MP-DRAN120-24A			+24 V DC	5A	84%	86%
MP-DRAN120-48A			+48 V DC	2.5A	85%	87%

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		kHz
Isolation Voltage	Input - Output	3,000 / 4,242			V AC / V DC
	Input-FG	1,500 / 2,121			V AC / V DC
	Output-FG	500 / 710			V AC / V DC
Isolation Resistance	Input- Output, @ 500V DC	100			MΩ
Ambient Temperature	Operating at Vi nom	-35		+ 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	Bellcore Issue 6 @40°C, GB 12V 24V AL / BL 48V			509,000 530,000 659,000 600,000	Hours
Altitude During Operation	EN 60950-1			5,000	m
Dimension	Screw terminal type	L124.5 × W64 × D123.6			mm
	Detachable connector type	L143.5 × W64 × D123.6			
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		115 / 230 (auto select)			V AC
Absolute input max. Range	Ta min ... Ta max, Io nom	AC in 115V selected AC in 230V selected DC in	90 180 210		132 264 375	V AC V AC V DC
Input Current	Vi : 115 / 230 V AC, Io nom AL, BL models			2.2 / 0.83 1.65 / 0.65		A
Rated input Current	Vi : 90 / 180 V AC, Io nom AL, BL models				2.8 / 104 2 / 0.8	A
Line Frequency	Vi nom, Io nom		47		63	Hz
Inrush current	Vi : 115 / 230 V AC , Io nom				24 / 48	A
Power dissipation	Vi : 230 V AC, Io nom	12V 24V AL / BL 48V		24 20 16 19		W
Leakage Current	Input-Output				0.25	mA
	Input-FG				3.5	mA
Power factor (Passive)	Vi : 230V AC, Io nom			0.75		

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,	single mode			± 1	%
	Io min ...Io nom	parallel mode			± 5	%
Voltage trim Range	Vi nom, 0.8 Io nom	12V 24V AL / BL 48V	11.4 22.5 22.5 45		14.5 28.5 24.5 55	V DC
Rated continuous loading	Vi nom	12V 24V AL / BL 48V	10 A @ 12V DC / 8.2 A @ 14.5 V DC 5 A @ 24V DC / 4.2 A @ 28.5 V DC 3.8 A @ 24V DC / 3.7 A @ 24.5 V DC 2.5 A @ 48V DC / 2.1 A @ 55 V DC			
Hold up Time	Vi : 115 / 230 V AC , Io nom		25 / 30			ms
Turn on Time	Vi nom, Io nom				1,000	ms
	Vi nom, Io nom 12V model : with 7000µF CAP 24V, 48V models : with 3500µF CAP				1,500	ms
Rise Time	Vi nom, Io nom				150	ms
	Vi nom, Io nom 12V model : with 7000µF CAP 24V, 48V models : with 3500µF CAP				150 500	ms
Fall Time	Vi nom, Io nom				150	ms
Transient Recovery Time	Vi nom, 1 to 0.5 Io nom				2	ms

Characteristics	Conditions	Min.	Typ.	Max.	Unit
Ripple & Noise	Vi nom, Io nom,BW = 20MHz			50	mV
Power Back Immunity	Vi nom, Io nom 12V 24V 48V	18 35 63			V DC
Capacitor Load	Vi nom, Io nom 12V 24V, 48V			7,000 3,500	µF
DC ON indicator Threshold at start up (Green LED)	Vi nom, Io nom 12V 24V 48V	10 17.6 37		11.2 19.4 43	V DC
DC LOW Indicator Threshold after start up (Red LED)	Vi nom, Io nom 12V 24V 48V	10 17.6 37		11.2 19.4 43	V DC
Parallel operation	0.1 Io min to 0.9 Io max (Except AL / BL models)			3	unit
Efficiency	Vi nom, Io nom, Po / Pi	Up to 87%, See model list and type efficiency curve			

Control and Protection

Characteristics	Conditions	Min.	Typ.	Max.	Unit
Input fuse		T3.15A / 250V AC internal			
Internal surge voltage protection	IEC 61000-4-5	Varistor			
Rated over load protection	Vi nom (see typ current limited curve) 110 AL / BL 102			145 108	%
Power Rdy (for 24V model only)	Threshold voltage of contact closed(at start up)	17.6		19.4	V DC
	Electrical isolation	500			V DC
	Contact rating at 60V DC			0.3	A
Over voltage protection	Vi nom, 0.8 Io nom (Auto Recovery) 12V 24V 48V	15 30 60		16.8 33 66	V
Output short circuit		Fold forward			
Degree of protection		IP20			

Approvals and Standards

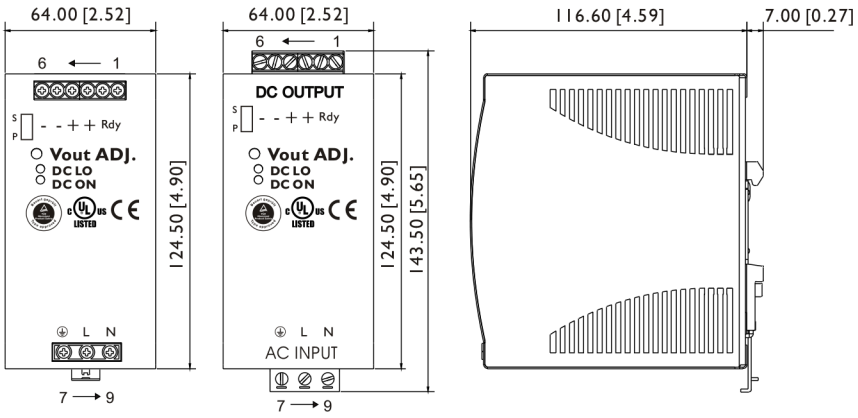
UL / cUL	UL 508 Listed UL 60950-1, UL 1310 Class 2 Power (24AL/BL models only) Recognized ISA 12.12.01(Class I, Division 2, Groups A, B, C and D)
TUV	EN 60950-1 EN 61558-1, EN 61558-2-16 (meet EN 60204-1)
CE	EN 61000-6-3, EN 55032 Class B, EN 61000-3-2 Class D, EN 61000-3-3 EN 61000-6-2, EN 55024, EN 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)

120W AC to DC Power Supply
DIN Rail Mount

Physical Characteristics

Case size	Screw terminal type	124.5mm × 64mm × 123.6mm (4.9 inches × 2.52 inches × 4.87 inches)
Case material	Metal	
Weight	920g	

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

Screw terminal:

AWG24-10 (0.2~4mm^2) 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°C / 75°C

General Tolerance	
0[0.00] - 30[1.18]	±0.3[0.01]
30[1.18] - 120[4.72]	±0.5[0.02]
120[4.72] - 400[15.75]	±0.8[0.03]

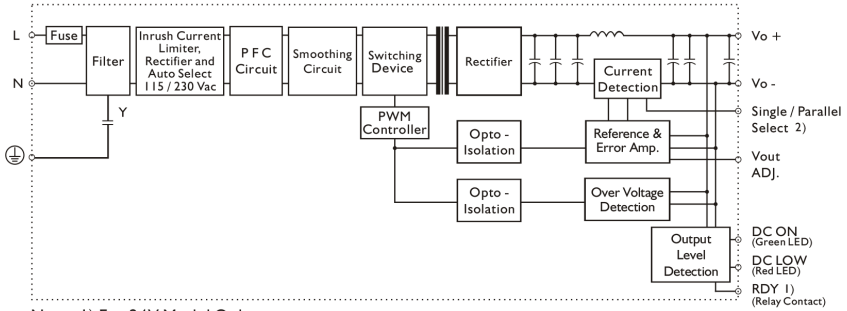
Dimensions : Millimetres (Inches)

Pin Assignment

PIN NO.	Designation		Description
1	OUT	RDY	A normal open circuit of PhotoMOS Relay
2			(24V model only)
3, 4		V +	Positive output terminal
5, 6		V -	Negative output terminal
7	IN	⏚	Ground this terminal to minimize high-frequency emissions
8		L	Input terminals (phase conductor, no polarity at DC input)
9		N	Input terminals (neutral conductor, no polarity at DC input)
	OTHER	DC ON	Operation indicator LED
		DC LO	DC LOW voltage indicator LED
		Vout ACJ.	Trimmer-potentiometer for Vout adjustment
		S/P	Single / Parallel select switch

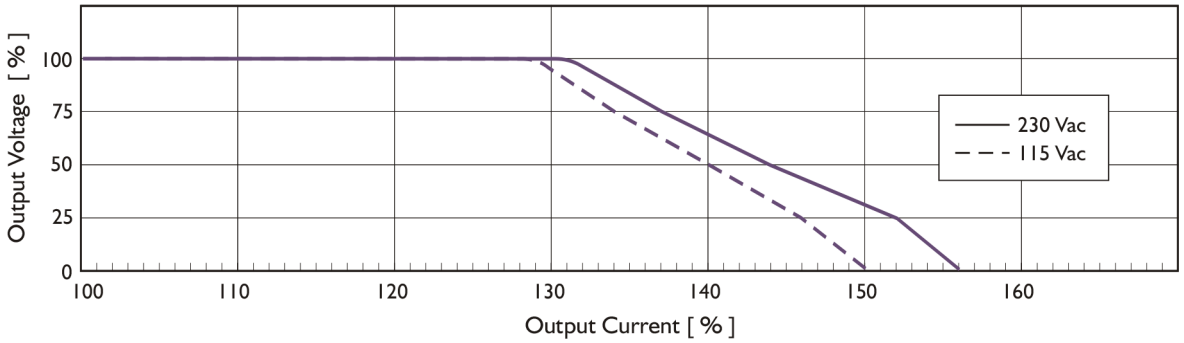
Circuit Schematic

• Block diagram for DRAN120 series

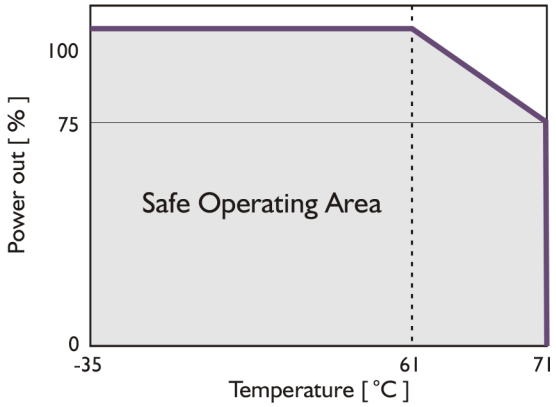


Note: 1) For 24V Model Only
2) AL/BL Models without this function

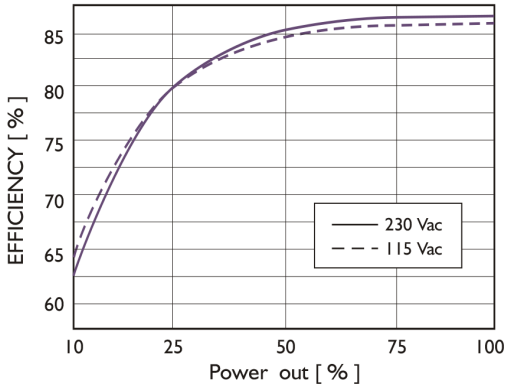
Type Current Limited Curve



Derating Curve



Type Efficiency Curve



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