

AC to DC DIN-Rail Power Supply 150 Watts

multicomp PRO

**RoHS
Compliant**



Description

These AC-DC series featuring a cost-effective, energy efficient solution for standard DIN-rail mounting. The products offer a high level of stability and immunity to noise, compliant with international IEC62368 standards for EMC and safety specifications meet IEC/EN61000-4, CISPR32, EN55032, UL/EN/IEC62368, IEC/EN60335, IEC61558, UL61010. These light weight AC-DC converters also have an extremely compact design for space saving and are ideal for applications such as industrial control equipment machinery and all kinds of applications in a harsh environment.

Features

- Universal 85V AC to 264V AC (277V AC available) or 120V DC to 430V DC (390V DC available) Input voltage
- Withstand 300VAC surge input for 5s
- Operating ambient temperature range: -30°C to +70°C (can be start-up at -40°C)
- High I/O isolation test voltage up to 4000VAC (Input - output)
- Over-voltage class III (Designed to meet EN61558 standards)
- Low standby power consumption, low ripple & noise
- High efficiency, high reliability
- Output short circuit, over-current, over-voltage over-temperature protection
- DIN rail TS35X7.5/ TS35X15 mountable
- Ultra-thin design: width 105mm (6SU)

Selection Guide

Part Number	Output Power (W)	Nominal Output Voltage and Current (Vo/Io)	Output Voltage Adjustable Range ADJ (V)*	Efficiency at 230V AC (%) Typ.	Max. Capacitive Load (µF)
MP-LI150-20B12PR2	135.6	12V/11.3A	10.8 - 13.8	89	10000
MP-LI150-20B24PR2	150.0	24V/6.25A	21.6 - 29	91.5	5000
MP-LI150-20B48PR2	153.6	48V/3.2A	43.2 - 52.8	91	2400

Note: *The actual adjustment range may extend outside the values stated, care should be exercised to ensure that the output voltage and power levels remain within the published maximum values.

Input Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Input Voltage Range	AC input	85	-	264	V AC
	DC input	120	-	370	V DC
Input Frequency	-	47	-	63	Hz
Input Current	115V AC	-	-	3	A
	230V AC	-	-	1.8	
Inrush Current	115V AC	-	35	-	
	230V AC	-	70	-	
Leakage Current	240V AC/50Hz	0.5mA RMS Max.			
Hot Plug		Unavailable			

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Output Specifications

Item	Operating Conditions		Min.	Typ.	Max.	Unit
Output Voltage Accuracy	0% - 100% load	12V Output	-	±2	-	%
		Other Output		±1		
Line Regulation	Rated load		-	±1	-	%
Load Regulation	230V AC		-	-	-	%
Output Ripple & Noise*	20MHz bandwidth (peak-to-peak value)	12V output	-	-	100	mV
		15V output			120	
		24V output			150	
		48V output			150	
Temperature Coefficient			-	±0.03	-	%/°C
Stand-by Power Consumption	230V AC input	12V/15V/24V output	-	-	0.3	W
		48V output			0.4	
Short Circuit Protection			Hiccup, continuous, self-recovery			
Over-current Protection	≥105% I _o , self-recovery	Hiccup mode or constant current limiting when output voltage <50%, recovers automatically after fault condition is removed				
		Constant current limiting within 50% -100% rated output voltage, recovers automatically after fault condition is removed				
Over-voltage Protection	12V output		≤16V (Output voltage hiccup)			
	15V output		≤23V (Output voltage hiccup)			
	24V output		≤35V (Output voltage hiccup)			
	48V output		≤60V (Output voltage clamp)			
Over-temperature Protection	Over-temperature protection activation		-	-	85	°C
	Over-temperature protection deactivation		50	-	-	
Minimum Load			0	-	-	%
Start-up Time	Room temperature		-	500	800	ms
Hold-up Time	115V AC		-	12	-	
	230V AC		-	30	-	

Note: *The "twisted pair-wire method" is used for ripple and noise test, please refer to AC-DC Converter Application Notes for specific information.

Mechanical Specifications

Case Material	Plastic, heat-resistant (UL94V-0)
Dimensions	105mm × 90mm × 55.4mm
Weight	330g (Typ.)
Cooling Method	Free air convection

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General Specifications

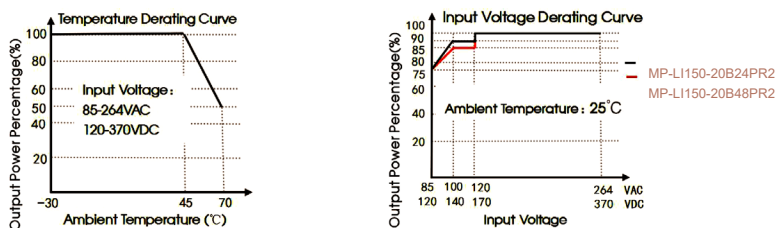
Item	Operating Conditions	Min.	Typ.	Max.	Unit	
Isolation	Input - Output	Electric Strength Test for 1min., (leakage current <5mA)			V AC	
Operating Temperature		-30	-	+70	°C	
Storage Temperature		-40	-	+85		
Storage Humidity		-	-	95	%RH	
Operating Altitude		-	-	2000	m	
Switching Frequency		-	65	-	kHz	
Power Derating	+45°C to +70°C		2	-	-	%/°C
	85V AC to 100V AC	12V/15V	1.1	-	-	%V AC
		24V/48V	0.784	-	-	
	100V AC to 120V AC	12V	-	-	122.4	W
24V		127.4				
48V		130.6				
Safety Standard	EN62368-1, IS13252 (Part1) safety approved; Design refer to UL/IEC62368-1, EN/IEC60335-1, IEC61558-1, UL61010-1					
Safety Class	CLASS II					
MTBF	MIL-HDBK-217F@25°C >300,000 h					

Electromagnetic Compatibility (EMC)

Emissions	CE	CISPR32/EN55032 CLASS B		
	RE	CISPR32/EN55032 CLASS B		
	Harmonic current*	IEC/EN61000-3-2	CLASS A	
Immunity	ESD	IEC/EN61000-4-2	Contact ±4KV/ Air ±8KV	perf. Criteria A
	RS	IEC/EN61000-4-3	10V/m	
	EFT	IEC/EN61000-4-4	±4KV	
	Surge	IEC/EN61000-4-5	line to line ±2KV	
	CS	IEC/EN61000-4-6	10Vr.m.s	
	Voltage dips, short interruptions and voltage variations immunity	IEC/EN61000-4-11	100% dip 1 periods, 30% dip 25 periods, 100% interruptions 250 periods	

*Test harmonic current at 70% load.

Product Characteristic Curve



Note: ① With an AC input between 85-120VAC and a DC input between 120-170VDC, the output power must be derated as per temperature derating curves.
② This product is suitable for applications using natural air cooling; for applications in closed environment please consult factory or one of our FAE.

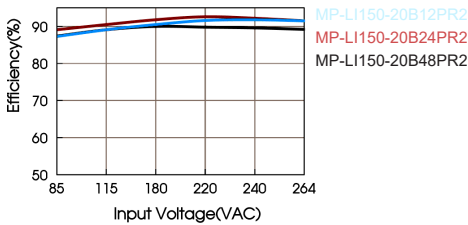
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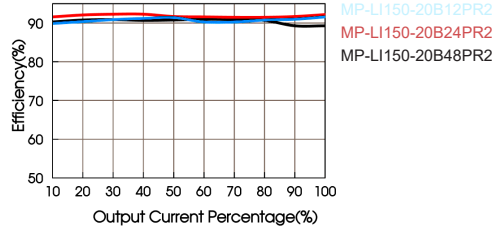
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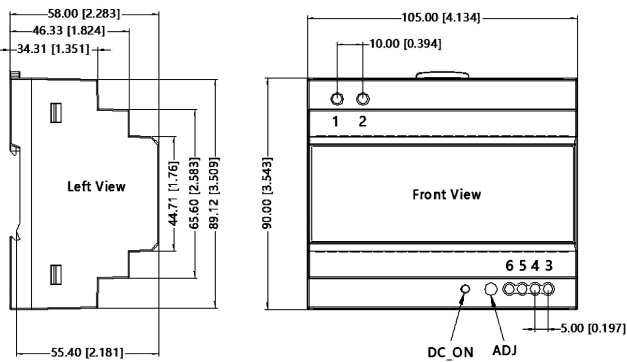
Efficiency Vs Input Voltage (Full Load)



Efficiency Vs Output Load (Vin=230VAC)



Diagram



Pin-Out	
Pin	Mark
1	AC(N)
2	AC(L)
3	-Vo
4	-Vo
5	+Vo
6	+Vo

Note:

- ADJ: Adjustable resistance to change output voltage
- Wire range: 24-12 AWG
- Tightening Torque: Max. 0.4N.m
- Mounting Rail: TS35
- General Tolerances: $\pm 1\text{mm}(\pm 0.039\text{")}$

Part Number Table

Description	Part Number
150W, AC to DC DIN-Rail Power Supply, 12V, 11.3A	MP-LI150-20B12PR2
150W, AC to DC DIN-Rail Power Supply, 24V, 6.25A	MP-LI150-20B24PR2
150W, AC to DC DIN-Rail Power Supply, 48V, 3.2A	MP-LI150-20B48PR2

Dimensions : Millimetres (Inches)

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