

AC to DC DIN-Rail Power Supply 15 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, UL62368, EN62368, IEC62368, IEC/EN61010, IEC/EN61558 and IEC60335. 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
- Accepts AC or DC input (dual-use of same terminal)
- Operating temperature range: -40°C to +70°C
- High I/O isolation test voltage up to 4000V AC
- Industrial product technology design
- Over-voltage class III (Designed to meet EN61558-1 safety standards)
- Low standby power consumption, high efficiency
- Low ripple & noise
- Output short circuit, over-current, over-voltage protection
- DIN rail TS35X7.5/ TS35X15 mountable

Selection Guide

Part Number	Output Power (W)	Nominal Output Voltage and Current (Vo/Io)	Output Voltage Adjustable Range (V)*	Efficiency at 230V AC (%) Typ.	Max. Capacitive Load (µF)
MP-LI15-20B05PR2	12	5V/2.4A	4.5 - 5.5	80	2000
MP-LI15-20B12PR2	15	12V/1.25A	10.8 - 13.8	85	1500
MP-LI15-20B24PR2	15.2	24V/0.63A	21.6 - 29.0	86	700
MP-LI15-20B48PR2	15.4	48V/0.32A	43.2 - 55.2	87	300

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	-	-	0.5	A
	230V AC	-	-	0.25	
Inrush Current	115V AC	-	15	-	
	230V AC	-	25	-	
Leakage Current	240V AC	0.5mA			
Hot Plug		Unavailable			

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Output Specifications

Item	Operating Conditions		Min.	Typ.	Max.	Unit
Output Voltage Accuracy	0% - 100% load	5V Output	-	±2	-	%
		Other Output		±1		
Line Regulation	Rated load					
Load Regulation	230VAC			±1		
Output Ripple & Noise*	20MHz bandwidth (peak-to-peak value)	5V Output	-	-	80	mV
		12V Output			120	
		15V Output			120	
		24V Output			150	
		48V Output			240	
Temperature Coefficient			-	±0.02	-	%/°C
Stand-by Power Consumption	230V AC input		-	-	0.3	W
Short Circuit Protection			Hiccup, continuous, self-recovery			
Over-current Protection	Constant voltage mode		≥110% Io, self-recovery			
	Constant current mode		Hiccup mode or constant current limiting when output voltage <50%, recovers automatically after fault condition is removed Constant current limiting within 50% to 100% rated output voltage, recovers automatically after fault condition is removed			
Over-voltage Protection	5V Output		≤6.75V (Output voltage hiccup)			
	12V Output		≤16.2V (Output voltage hiccup)			
	15V Output		≤22.5V (Output voltage hiccup)			
	24V Output		≤36V (Output voltage hiccup)			
	48V Output		≤64.8V (Output voltage hiccup)			
Minimum Load			0	-	-	%
Start-up Time			-	-	2	s
Hold-up Time	115V AC		-	12	-	ms
	230V AC		-	30	-	

Note: *The "Tip and barrel method" is used for ripple and noise test, using a 12" twisted pair-wire terminated with a 0.1µf ceramic capacitor & 47µf parallel capacitor, please refer to Enclosed Switching Power Supply Application Notes for specific information.

Mechanical Specifications

Case Material	Plastic, heat-resistant (UL94V-0)
Dimensions	90mm × 58mm × 17.5mm
Weight	60g (Typ.)
Cooling Method	Free air convection

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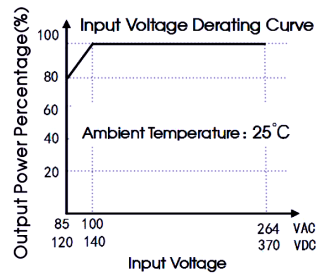
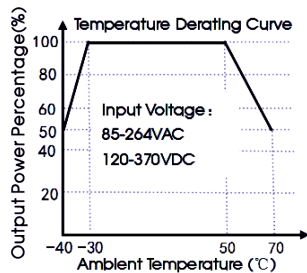
General Specifications

Item		Operating Conditions	Min.	Typ.	Max.	Unit
Isolation	Input - Output	Electric Strength Test for 1min., (leakage current <5mA)	4000	-	-	V AC
Operating Temperature			-40	-	+70	°C
Storage Temperature			-40	-	+85	
Storage Humidity			-	-	95	%RH
Operating Altitude			-	-	2000	m
Switching Frequency			-	65	-	kHz
Power Derating		-40°C to -30°C	5	-	-	% / °C
		+50°C to +70°C	2.5	-	-	
		85V AC to 100V AC	1.34	-	-	% / V AC
Safety Standard			Design refer to UL/IEC62368-1/EN62368-1 IEC/EN61010-1 IEC/EN61558-1 IEC60335-1 EN62368-1 (Report) Safety Approval			
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	±2KV	
	Surge	IEC/EN61000-4-5	line to line ±1KV	
	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

Product Characteristic Curve

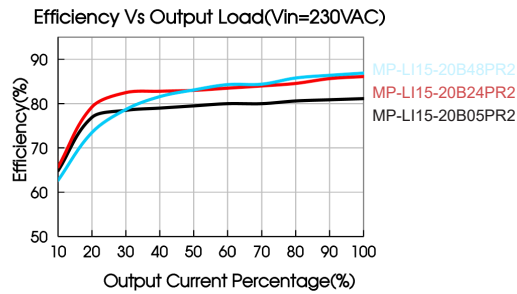
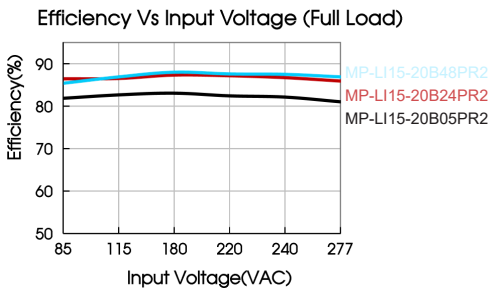


Note: ① With an AC input between 85-100VAC and a DC input between 120-140VDC, the output power must be derated as per temperature derating curves;
② This product is suitable for applications using natural air cooling; for applications in closed environment please consult factory or one of our FAE.

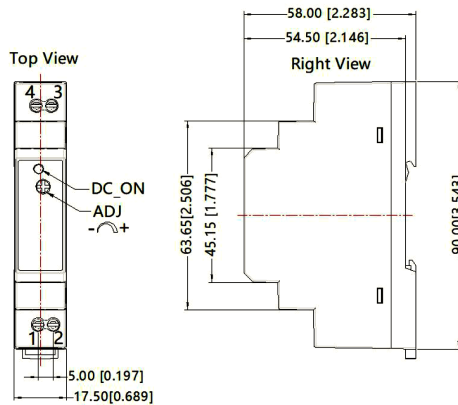
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Diagram



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

Note:

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

Part Number Table

Description	Part Number
15W, AC to DC DIN-Rail Power Supply, 5V, 2.4A	MP-LI15-20B05PR2
15W, AC to DC DIN-Rail Power Supply, 12V, 1.25A	MP-LI15-20B12PR2
15W, AC to DC DIN-Rail Power Supply, 24V, 0.63A	MP-LI15-20B24PR2
15W, AC to DC DIN-Rail Power Supply, 48V, 0.32A	MP-LI15-20B48PR2

Dimensions : Millimetres (Inches)

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