

# AC-DC DIN Rail Mount Power Supply 480W

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**RoHS  
Compliant**

## Features

- Universal 85V AC 264V AC or 120V DC to 370V DC Input voltage
- Accepts AC or DC input (dual-use of same terminal)
- Operating ambient temperature range: -30°C to +70°C
- The efficiency is up to 94%
- High I/O isolation test voltage up to 3000VAC
- DC OK function
- Active PFC, PF > 0.95
- Low ripple & noise
- Output short circuit, over-current, over-voltage, over-temperature protection
- DIN rail TS-35/7.5 or 15 mountable
- Ultra slim design with 48mm width
- Safety according to IEC/EN/UL62368, UL61010, UL508

These AC-DC converter series featuring a cost-effective, energy efficient green power supply solution for standard DIN-rail mounting. The products offer a high level of stability and immunity to noise for industrial control equipment, machinery, and other industrial equipment in a variety of harsh environments. These light weight AC-DC converters have an extremely compact design and the standard rail (48mm) installation for space saving. With good EMC performance, compliant with international IEC/EN/UL62368, UL61010, UL508 standards for EMC and safety.

## Selection Guide

Part Number	Output Power (W)	Nominal Output Voltage and Current (Vo/Io)	Output Voltage Adjustable Range (V)	Efficiency at 230VAC (%) Typ.	Max. Capacitive Load (µF)
MPIF480-10B24	480	24V/20A	24-28	94	4700
MPIF480-10B48		48V/10A	48-55	94	2700

## 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 Voltage Frequency			47	--	63	Hz
Input Current	115V AC		--	--	5	A
	230V AC		--	--	2.5	
Inrush Current	115V AC	Cold start	--	20	--	
	230V AC		--	40	--	
Power Factor	115V AC		0.99	--	--	--
	230V AC		0.95	--	--	
Leakage Current	264V AC		<0.8 mA			
Hot Plug			Unavailable			

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


## Output Specifications

Item	Operating Conditions		Min.	Typ.	Max.	Unit
Output Voltage Accuracy	Full load range		--	±1.0	--	%
Line Regulation	Rated load		--	±0.5	--	
Load Regulation	0% - 100% load		--	±1.0	--	
Ripple & Noise*	20MHz bandwidth (peak-to-peak value)	24V	--	--	100	mV
		48V	--	--	120	
Temperature Coefficient			--	±0.03	--	W
Minimum Load			0	--	--	%
Hold-up Time			16	22	--	ms
DC OK Signal*			30V DC/1A Max.			
Short Circuit Protection	Recovery time < 10s after the short circuit disappear.		Hiccup, continuous, self-recovery			
Over-current Protection	230V AC, rated load	Normal temperature, high temperature	110%-150% I <sub>o</sub> , the output turned off after working normally for 1s, self-recovery			
		Low temperature	≥105% I <sub>o</sub> , automatic recover after fault condition is removed			
Over-voltage Protection	24V		29-35V(Output voltage turn off or clamp, re-power on for recover or automatic recover)			
	48V		56-60V(Output voltage turn off or clamp, re-power on for recover automatic recover)			
Over-temperature Protection	230VAC, 100% I <sub>o</sub>	Over-temperature Protection start	--	--	90	°C
		Over-temperature Protection release	60	--	--	

Note: \*The "Tip and barrel method" is used for ripple and noise test, output parallel 47uF electrolytic capacitor and 0.1uF ceramic capacitor, please refer to Enclosed Switching Power Supply Application Notes for specific information.

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General Specifications						
Item		Operating Conditions	Min.	Typ.	Max.	Unit
Isolation Test	Input - 	Electric strength test for 1min., leakage current <10mA	2000	--	--	VAC
	Input - output		3000	--	--	
	Output - 		500	--	--	
Insulation Resistance	Input - 	At 500V DC	100	--	--	MΩ
	Input - output		100	--	--	
	Output - 		100	--	--	
Operating Temperature			-30	--	+70	°C
Storage Temperature			-40	--	+85	
Storage Humidity		Non-condensing	10	--	95	%RH
Operating Humidity			20	--	90	
Switching Frequency			--	--	--	kHz
Power Derating	Operating temperature derating	+50°C to +70°C	3.34	--	--	% / °C
	Input voltage derating	85VAC -100VAC	2.0	--	--	
Safety Standard			Meet IEC/EN/UL62368/UL61010/UL508			
Safety Certification			EN62368/UL61010 (Pending)			
Safety Class			CLASS I			
MTBF		MIL-HDBK-217F@25°C	>300,000 h			

Mechanical Specifications	
Case Material	Metal (AL1100, SPCC) and Plastic (PC940)
Dimensions	131.50mm x 48.00mm x 125.00mm
Weight	980g (Typ.)
Cooling Method	Free air convection

## EMC Specifications

Emissions	CE	CISPR32/EN55032 CLASS B			
	RE	CISPR32/EN55032 CLASS B			
	Harmonic current	IEC/EN61000-3-2 CLASS A and CLASS D			
Immunity	ESD	IEC/EN 61000-4-2	Contact ±6KV/Air ±8KV	perf. Criteria A	
	RS	IEC/EN 61000-4-3	10V/m	perf. Criteria A	
	EFT	IEC/EN 61000-4-4	±2KV	perf. Criteria A	
	Surge	IEC/EN 61000-4-5	line to line ±2KV/line to ground ±4KV	perf. Criteria A	
	CS	IEC/EN61000-4-6	10 Vr.m.s	perf. Criteria A	
	Voltage dips, short interruptions and voltage variations immunity	IEC/EN61000-4-11	0%, 70%	perf. Criteria A	

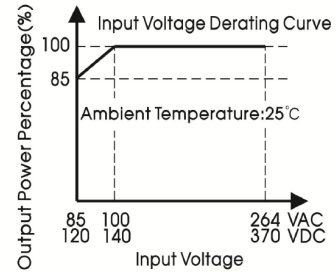
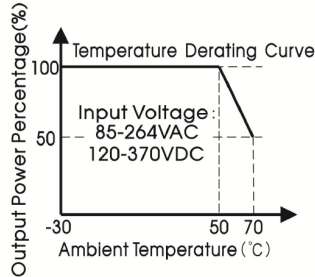
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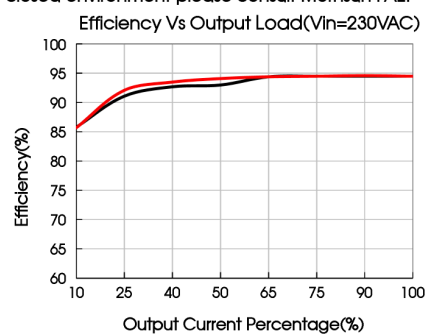
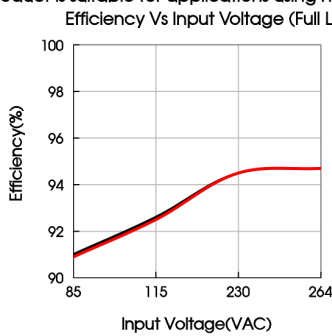


## Product Characteristic Curve



Note: 1. With an AC input voltage between 85 -100VAC and a DC input between 120-140VDC the output power must be derated as per the temperature derating curves;

2. This product is suitable for applications using natural air cooling; for applications in closed environment please consult Mornsun FAE.



## Dimensions and Recommended Layout

THIRD ANGLE PROJECTION

Top View

Pin-Out	
Pin	Mark
1	-Vo
2	-Vo
3	-Vo
4	+Vo
5	+Vo
6	AC(N)
7	AC(L)
8	

Front View

Right View

Note:  
 Unit: mm[inch]  
 DC ON: Output status indicator LED  
 ADJ: Output adjustable resistor  
 Wire range: 28-10 AWG  
 Tightening torque: Max 0.4 N · m  
 Mounting rail: TS35, rail needs to connect safety ground  
 General tolerances: ± 1.00 [± 0.039]



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## Notes:

1. Unless otherwise specified, parameters in this datasheet were measured under the conditions of Ta=25°C, humidity<75% RH with nominal input voltage and rated output load;
2. The room temperature derating of 5°C/1000m is needed for operating altitude greater than 2000m;
3. All index testing methods in this datasheet are based on our company corporate standards;
4. In order to improve the efficiency at high input voltage, there will be audible noise generated, but it does not affect product performance and reliability;
5. We can provide product customization service, please contact our technicians directly for specific information;
6. Products are related to laws and regulations: see "Features" and "EMC";
7. The out case needs to be connected to the earth (⊥) of system when the terminal equipment in operating;
8. Our products shall be classified according to ISO14001 and related environmental laws and regulations, and shall be handled by qualified units.

## Part Number Table

Description	Part Number
AC-DC DIN Rail Mount Power Supply, 480W, 24V, 20A	MPIF480-10B24
AC-DC DIN Rail Mount Power Supply, 480W, 48V, 10A	MPIF480-10B48

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