

# AC-DC DIN Rail Power Supply 120W

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**RoHS  
Compliant**



## Features

- Universal 180-600VAC or 254V DC to 848V DC input voltage
- Single/Two phase both available
- Operating ambient temperature range: -25°C to +70°C
- High I/O isolation voltage up to 4000VAC
- Industrial-grade design
- Low ripple & noise, high efficiency, high reliability
- DC OK function
- 150% peak load for 3 seconds
- LED indicator for power on
- Output short circuit, over-current, over-voltage, over-temperature protection
- 3 Years Warranty

MP120-26Bxx 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 installation for space saving. With good EMC performance, compliant with international UL508, UL61010, EN/IEC62368, IEC60664 standards for EMC and safety.

## 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.	Capacitive Load (µF) Max.
MP120-26B12	120	12V/10A	12-14	89.5	15000
MP120-26B24		24V/5A	24-28	91	10000
MP120-26B48		48V/2.5A	48-55	92	8000

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		180	--	600	V AC
	DC input		254		848	V DC
Input Frequency			47		63	Hz
Input Current	230V AC		--	1.2	1.4	A
	400V AC		--	0.7	1	
Inrush Current	400V AC	Cold start	--	50	--	
Leakage Current			<3.5mA/rms			
Hot Plug			Unavailable			

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## Output Specifications

Item	Operating Conditions		Min.	Typ.	Max.	Unit
Output Voltage Accuracy	0% - 100% load	12V output	--	±1.5	±2	%
		24V/48V output		±1	--	
Line Regulation	Rated load			±0.5	--	
Load Regulation	400V AC	12V output		±0.5	±1	
		24V/48V output		±0.5	--	
Ripple & Noise*	20MHz bandwidth (peak-to-peak value)	12V/24V output		--	120	mV
		48V output		--	150	
Temperature Coefficient				±0.03	--	%/°C
Short Circuit Protection			Constant current hiccup, self-recovery			
Over-current Protection			≥150% I <sub>o</sub> , hiccup, self-recovery			
Over-voltage Protection	12V output		≤16V	Output voltage hiccup		
	24V output		≤35V			
	48V output		≤60V			
Over-temperature Protection			Shutdown output, recovery after restart			
Minimum Load			0	--	--	%
Start-up Time	400V input	Room temperature, full load (cold start)	--	--	2	s
DC OK Signal			30V DC/1A Max.			
Hold-up Time	230V AC		--	10	--	ms
	400V AC		--	50	--	

## General Specifications

Item	Operating Conditions		Min.	Typ.	Max.	Unit
Isolation	Input - output	Electric Strength Test for 1min., leakage current < 10mA	4000	--	--	V AC
	Input - PE		2000			
	Output - PE		500			
	Output - DC OK	Electric Strength Test for 1min., leakage current < 2mA	500			
Insulation Resistance	Input - output	500V DC	100	--	--	MΩ
	Input - PE					
	Output - PE					
Operating Temperature			-25	--	+70	°C
Storage Temperature			-40	--	+85	
Storage Humidity			--	--	95	%RH
Altitude			--	--	5000	m

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Item	Operating Conditions		Min.	Typ.	Max.	Unit
Power Derating	+50°C to +60°C	MPI120-26B12	4	--	--	%/ <sup>o</sup> C
	+60°C to +70°C		3			
	+60°C to +70°C	MPI120-26B24/48	4			
	180V AC - 198V AC		2.23			%/ <sup>o</sup> V AC
	550V AC - 600V AC		0.8			
	2000m-5000m		5			
Safety Standard			EN62368-1, BS EN62368-1 (Report); Design refer to UL508, UL61010-1, UL61010-2-201, IEC62368-1, IEC60664			
Safety Class			CLASS I			
MTBF			MIL-HDBK-217F@25°C>300,000 h			

## Mechanical Specifications

Case Material	Metal (AL1100, SPCC, SGCC)
Dimensions	124mm x 41mm x 110mm
Weight	550g (Typ.)
Cooling Method	Free air convection

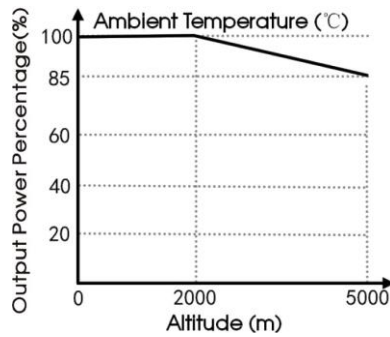
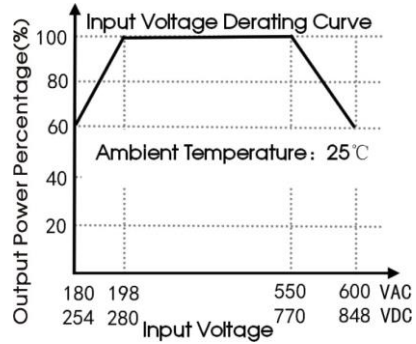
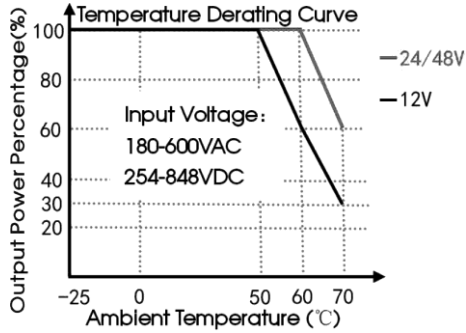
## Electromagnetic Compatibility (EMC)

Emissions	CE	CISPR32 EN55032 CLASS B		
	RE	CISPR32 EN55032 CLASS B		
	Harmonic current	IEC/EN61000-3-2	CLASS A	
	Voltage flicker	IEC/EN61000-3-3		
Immunity	ESD	IEC/EN61000-4-2	Contact ±4KV/Air ±8KV	perf. Criteria A
	RS	IEC/EN61000-4-3	10V/m	perf. Criteria A
	EFT	IEC/EN61000-4-4	±2KV	perf. Criteria A
	Surge	IEC/EN61000-4-5	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	100% dip 1 periods, 30% dip 25 periods, 100% interruptions 250 periods	perf. Criteria A

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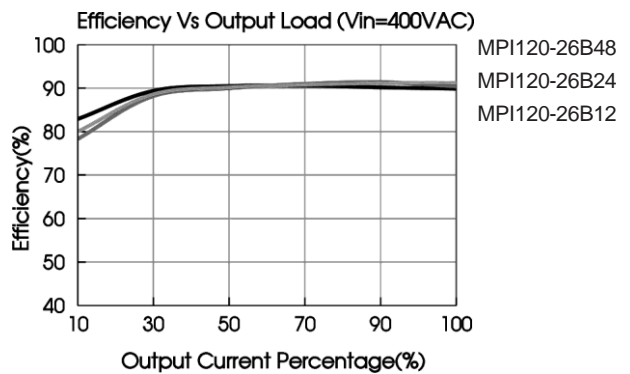
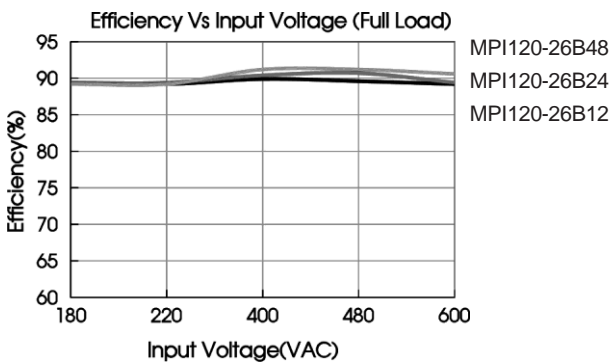
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## Product Characteristic Curve



Note:

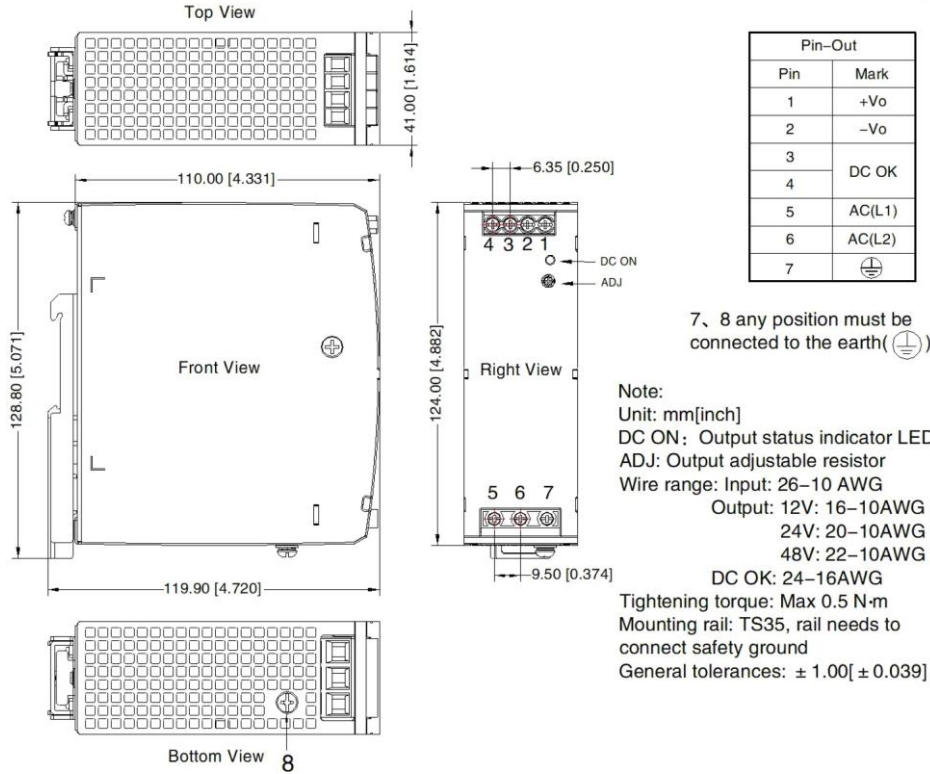
With an AC input between 180-198V AC/550-600V AC and a DC input between 254-280V DC/770-848V DC, the output power must be derated as per temperature derating curves;



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## Dimensions and Recommended Layout



### 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. The out case needs to be connected to PE (⊕) of system when the terminal equipment in operating;
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;

### Part Number Table

Description	Part Number
AC-DC DIN Rail Power Supply, 2 Phase I/P, 12V, 10A	MPI120-26B12
AC-DC DIN Rail Power Supply, 2 Phase I/P, 24V, 5A	MPI120-26B24
AC-DC DIN Rail Power Supply, 2 Phase I/P, 48V, 2.5A	MPI120-26B48

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