

120W, AC-DC converter



### FEATURES

- Wide input voltage range:85~264VAC/100~370VDC
- Active PFC
- AC and DC dual-use(input from the same terminal)
- Low standby power consumption, high efficiency, high isolation voltage up to 3K VAC
- Low ripple & noise
- Input under-voltage protection, output short circuit, over-current, over-voltage, over-temperature protection
- Remote control
- UL60950, EN60950 approval

LI120 series — 120W converter offered by Mornsun. It features Cost-effective, standard rail mounting, energy efficient. It offers stability and high noise immunity for industrial control equipment, machinery and other harsh environments of industrial equipment. The converter is compact size, light weight, compact structure, standard rail (35mm) installation and save a lot of space for customers.

### Selection Guide

Certification	Part No.	Output Power	Nominal Output Voltage and Current(Vo/Io)	Efficiency (230VAC, %/Typ.)	Max. Capacitive Load (μF)
--	LI120-10B12	120W	12V/10A	89	10000
UL/CE	LI120-10B24	120W	24V/5A	92	4700
--	LI120-10B48	120W	48V/2.5A	93	1700

### Input Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Input Voltage Range	AC input	85	--	264	VAC
	DC input	100	--	370	VDC
Input frequency		47	--	63	Hz
Input current	115VAC	--	--	1.5	A
	230VAC	--	--	0.75	
Inrush current	115VAC	--	35	--	A
	230VAC	--	70	--	
Power Factor	115VAC	--	0.98	--	--
	230VAC	--	0.96	--	
Input under-voltage	Start-up Voltage	76	--	83	VAC
	Shutdown Voltage	67	--	75	
Hot Plug		Unavailable			



### Output Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Output Voltage Accuracy		--	--	±1	%
Line Regulation	Full load	--	--	±0.5	
Load Regulation		--	--	±1	
Output Ripple & Noise*	20MHz bandwidth (peak-peak value)	--	--	100	mV
Temperature Drift Coefficient		--	±0.03	--	%/°C
Stand-by Power Consumption		--	--	0.75	W
Short Circuit Protection		Continuous, self-recovery			
Over-current Protection		110-150% Io, start protecting after 3 seconds, self-recovery			
Over-voltage Protection		Continuous automatic restart until the over-voltage condition is removed			
Over-temperature Protection		shut down the output voltage at over-temperature, self-recovery			
Min. Load		0	--	--	%

Start-up Time		--	--	1500	ms
Hold-up Time	115VAC	--	25	--	
	230VAC	--	25	--	

Note: \* Rely test method is adopted test the ripple and noise, please see *AC-DC Converter Application Notes* for specific operation methods.

### General Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Isolation Voltage	Input-output	3000	--	--	VAC
	Input- 	1500	--	--	
	Output- 	500	--	--	
Operating Temperature		-25	--	+70	°C
Storage Temperature		-25	--	+85	
Storage Humidity		--	--	95	%RH
Switching Frequency		--	100	--	kHz
Power Derating	+55°C to +70°C	2.5	--	--	%/°C
Safety Standard	EN60950/UL60950				
Safety Certification	EN60950/UL60950				
Safety Class	CLASS I				
MTBF	MIL-HDBK-217F@25°C > 300,000 h				

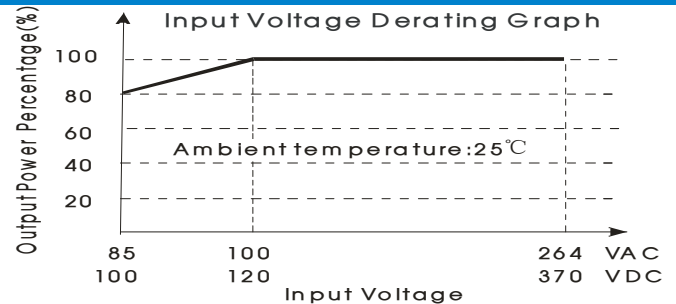
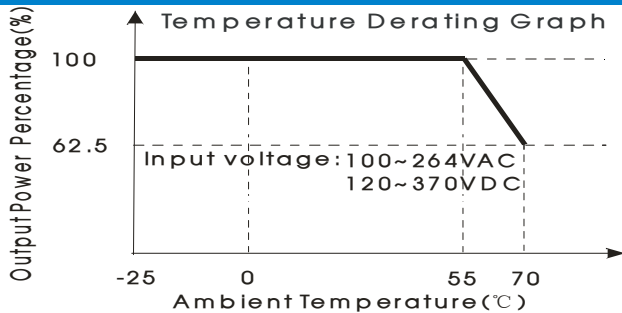
### Physical Specifications

Casing Material	heat-resistant plastic (UL94V-0) and metal	
Package Dimensions	35.00*125.00*112.70 mm	
Weight	LI120-10B12	580g(Typ.)
	Others	560g(Typ.)
Cooling method	Free air convection	

### EMC Specifications

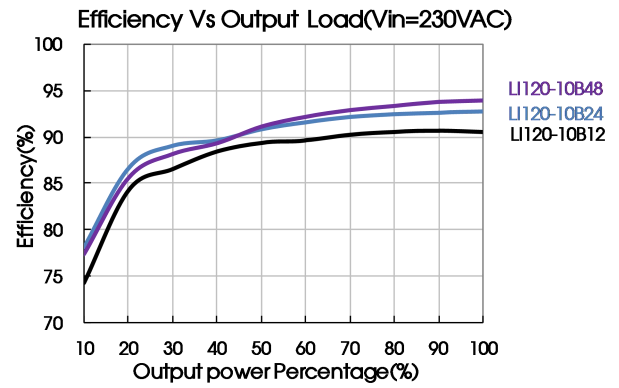
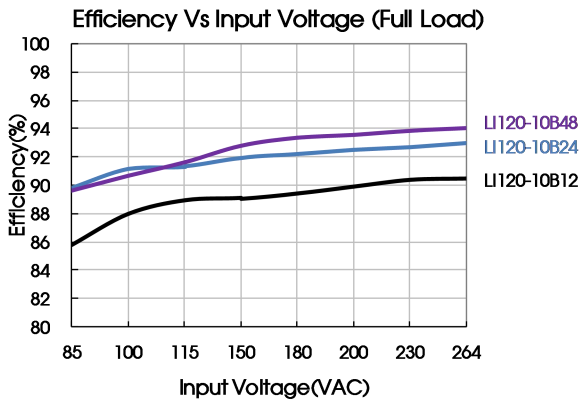
EMI	CE	CISPR22/EN55022	CLASS B
	RE	CISPR22/EN55022	CLASS B
EMS	ESD	IEC/EN61000-4-2	Contact ±6KV/Air ±8KV perf. Criteria B
	RS	IEC/EN61000-4-3	10V/m perf. Criteria A
	EFT	IEC/EN61000-4-4	±4KV perf. Criteria B
	Surge	IEC/EN61000-4-5	line to line ±2KV/line to ground ±4KV perf. Criteria B
	CS	IEC/EN61000-4-6	10 Vr.m.s perf. Criteria A
	PFM	IEC/EN61000-4-8	10A/m perf. Criteria A
	Voltage dips, short interruptions and voltage variations immunity	IEC/EN61000-4-11	0%,70% perf. Criteria B

### Product Characteristic Curve



Note: ① Input voltage should be derated based on temperature derating when it is 85~100VAC/100~120VDC;

② This product is suitable for use in natural air cooling environments, if in a closed environment, please contact our company's FAE.



## Design Reference

### 1. Typical application circuit

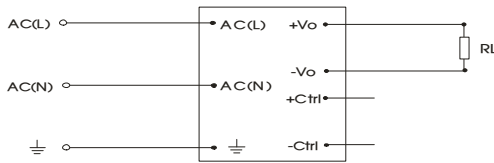


Fig. 1: Typical application circuit

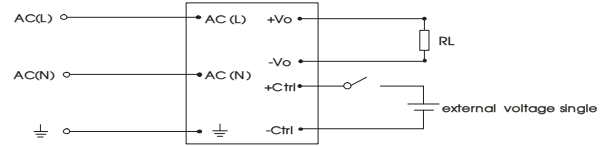


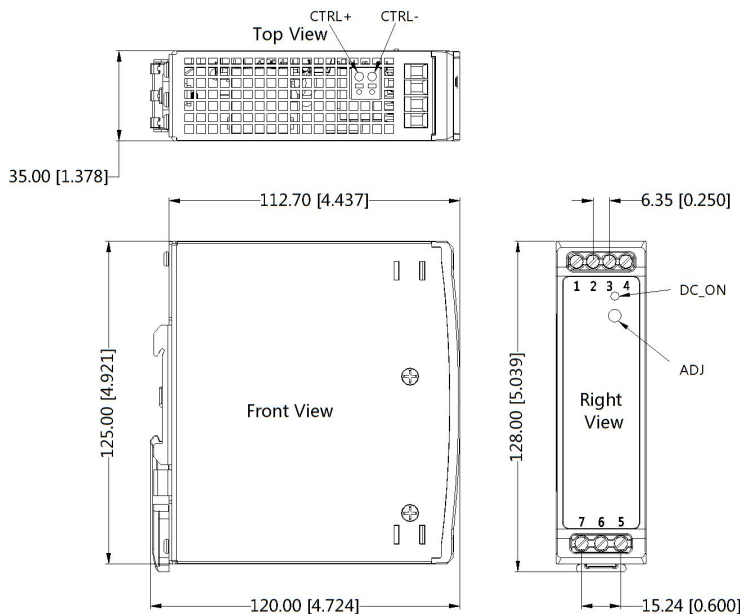
Fig. 2: Remote control Applications circuit

\*Note: external voltage single range 4.5 ~ 12.5VDC realize the power off, the single disappears and recovery

2. For more information Please find the application notes on [www.mornsun-power.com](http://www.mornsun-power.com)

## Dimensions and Recommended Layout

THIRD ANGLE PROJECTION



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

Note:  
 Unit:mm[inch]  
 General tolerances:±1.00[±0.039]  
 Installed on DIN rail TS35  
 Wire range:26~10AWG  
 Strip length:8.0[0.315]  
 ADJ : adjustable resistance to change output voltage

Note:

1. Packing information please refer to Product Packing Information which can be downloaded from [www.mornsun-power.com](http://www.mornsun-power.com). Packing bag number: 58220028;
2. Unless otherwise specified, parameters in this datasheet were measured under the conditions of  $T_a=25^{\circ}\text{C}$ , humidity<75% with nominal input voltage and rated output load;
3. All index testing methods in this datasheet are based on our Company's corporate standards;
4. We can provide product customization service, please contact our technicians directly for specific information;
5. Specifications are subject to change without prior notice.

## Mornsun Guangzhou Science & Technology Co., Ltd.

Address: No. 5, Kehui St. 1, Kehui Development Center, Science Ave., Guangzhou Science City, Luogang District, Guangzhou, P. R. China  
Tel: 86-20-38601850-8801 Fax: 86-20-38601272 E-mail: [info@mornsun.cn](mailto:info@mornsun.cn)