

120W, AC-DC converter



**UL** **CE** **CB** **RoHS**

### 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
- IEC60950, 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)
UL/CE/CB	LI120-10B12	120W	12V/10A	89	10000
	LI120-10B24		24V/5A	92	4700
	LI120-10B48		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 protection	Start-up Voltage	AC input, Full load	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		IEC60950/EN60950/UL60950			
Safety Certification		IEC60950/EN60950/UL60950			
Safety Class		CLASS I			
MTBF		MIL-HDBK-217F@25°C > 300,000 h			

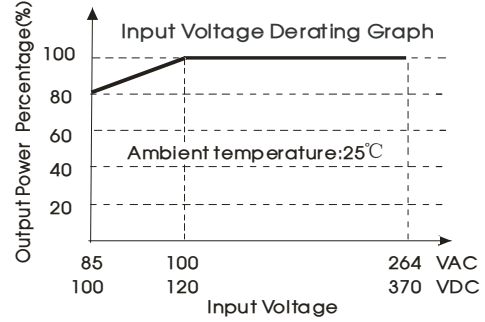
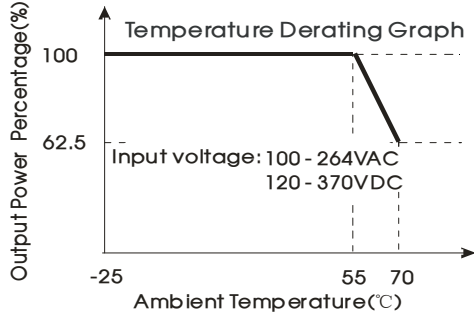
### Physical Specifications

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	

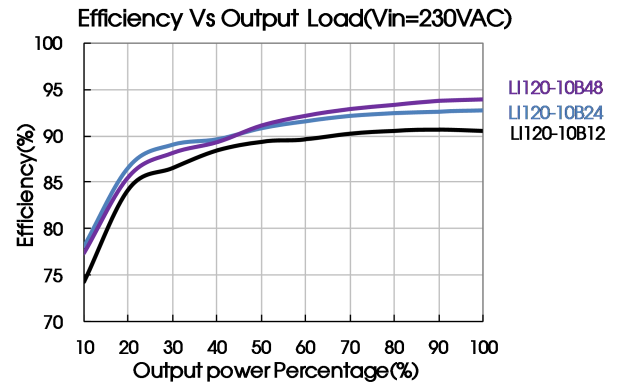
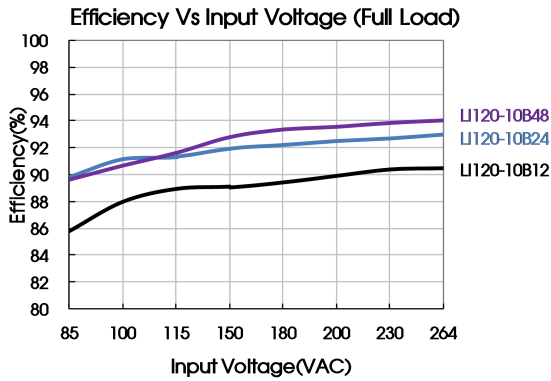
### EMC Specifications

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	10Vr.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

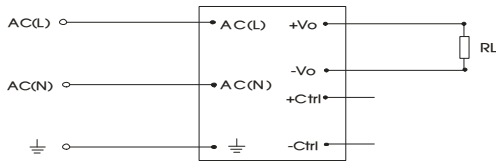


Fig. 1: Typical application circuit

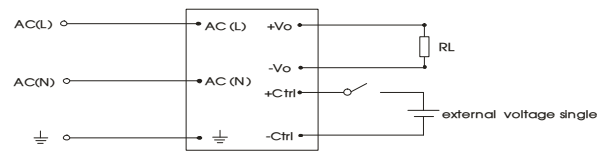


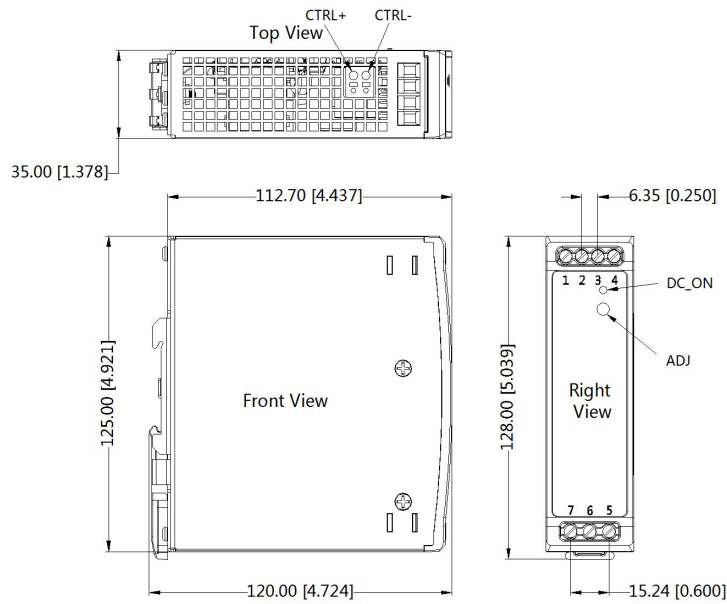
Fig. 2: Remote control Applications circuit

\*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]  
 ADJ : adjustable resistance to change output voltage  
 Wire range: 26-10 AWG  
 Tightening torque: Max 0.4 N·m  
 Mounting rail: TS35, rail needs to connect safety ground  
 General tolerances:  $\pm 1.00[\pm 0.039]$

- 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.

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