AC/DC Converter

LI120-13Bxx Series

MORNSUN®

120W, AC/DC DIN-Rail mounting

RoHS

3 years Warranty

FEATURES

- Input voltage range: 85 - 305VAC/100 - 430VDC
- AC and DC dual-use (input from the same terminal)
- Low standby power consumption, high efficiency, Isolation voltage: 3K VAC
- Low ripple & noise
- Output short circuit, over-current, over-voltage protection
- Remote control
- Active PFC

LI120-13Bxx series ---- The 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

Part No.	Output Power	Nominal Output Voltage and Current (Vo/Io)	Efficiency (230VAC, %/Typ.)	Max. Capacitive Load (μF)
LI120-13B12	120W	12V/10A	89	10000
LI120-13B24	120W	24V/5A	91	4700

Input Specifications

Item	Operating Conditions		Min.	Typ.	Max.	Unit
Input Voltage Range	AC input		85	--	305	VAC
	DC input		100	--	430	VDC
Input frequency			47	--	63	Hz
Input current	115VAC		--	--	1.5	A
	230VAC		--	--	0.75	
Inrush current	115VAC	LI120-13B12	--	45	--	
		LI120-13B24	--	50	--	
	230VAC		--	70	--	
Power factor	230VAC		≥0.95			
Hot Plug			Unavailable			

Output Specifications

Item	Operating Conditions		Min.	Typ.	Max.	Unit
Output Voltage Accuracy			--	±2	--	%
Line Regulation	Full load		--	±0.5	--	
Load Regulation	230VAC		--	±1	--	
Output Ripple & Noise*	20MHz bandwidth (peak-peak value)	LI120-13B12	--	--	100	mV
		LI120-13B24	--	--	200	
Temperature Drift Coefficient			--	±0.03	--	%/°C
Stand-by Power Consumption			--	--	0.75	W
Short Circuit Protection			Continuous, self-recovery			
Over-current Protection	LI120-13B12		110 - 150% Io, start protecting after 3 seconds, self-recovery			
	LI120-13B24		110 - 200% Io, start protecting after 3 seconds, self-recovery			
Over-voltage Protection			Continuous automatic restart until the over-voltage condition is removed			

Min. Load		0	--	--	%
Start-up Time		--	--	3000	ms
Hold-up Time	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	Test time: 1min,Leakage current<5mA	3000	--	--	VAC
	Input - ⏚		1500	--	--	
	Output - ⏚		500	--	--	
Operating Temperature			-25	--	+70	℃
Storage Temperature			-25	--	+85	
Storage Humidity			--	--	95	%RH
Switching Frequency			--	100	--	kHz
Power Derating		+55℃ to +70℃	2.5	--	--	%/℃
Safety Class			CLASS I			
MTBF			MIL-HDBK-217F@25°C > 300,000 h			

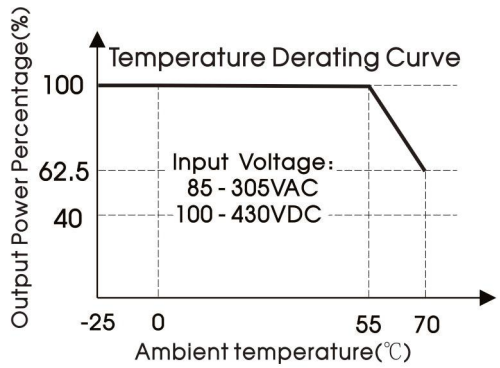
Physical Specifications

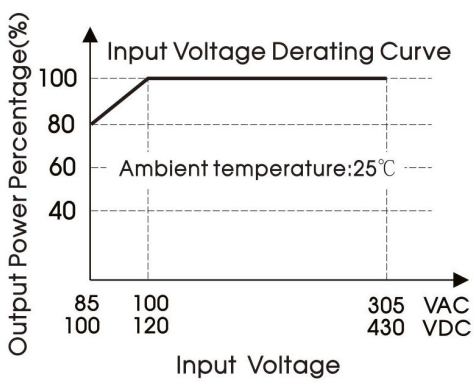
Casing Material		Heat-resistant plastic (UL94V-0) and metal
Package Dimensions		35.00*125.00*112.70 mm
Weight	LI120-13B12	580g (Typ.)
	LI120-13B24	560g (Typ.)
Cooling method		Free air convection

EMC Specifications

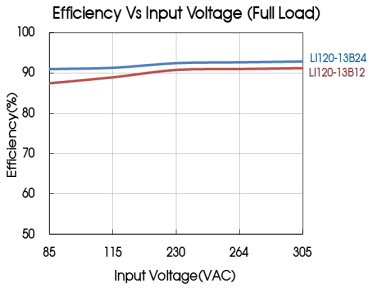
EMI	CE	CISPR32/EN55032	CLASS B	
	RE	CISPR32/EN55032	CLASS B	
EMS	ESD	IEC/EN61000-4-2	Contact ±6KV/Air ±8KV	Perf. Criteria B
	RS	IEC/EN61000-4-3	10V/m	perf. Criteria A
	EFT	IEC/EN61000-4-4	±4KV	perf. Criteria B
	Surge	IEC/EN61000-4-5	line to line ±2KV/line to ground ±4KV	perf. Criteria B
	CS	IEC/EN61000-4-6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

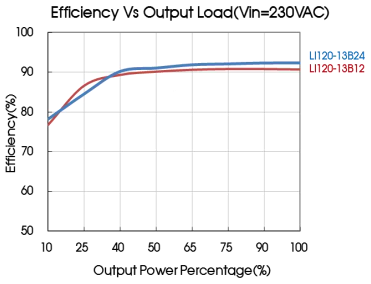
Product Characteristic Curve





Note: ①Input voltage should be derated based on temperature derating when it is 85-100VAC/100-120VDC;
②This 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

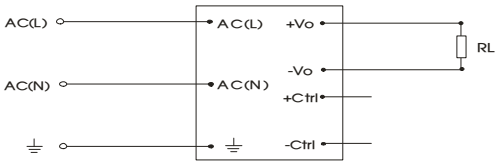


Fig. 1: Typical application circuit

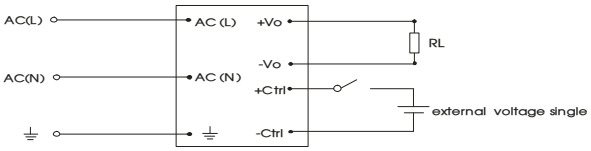
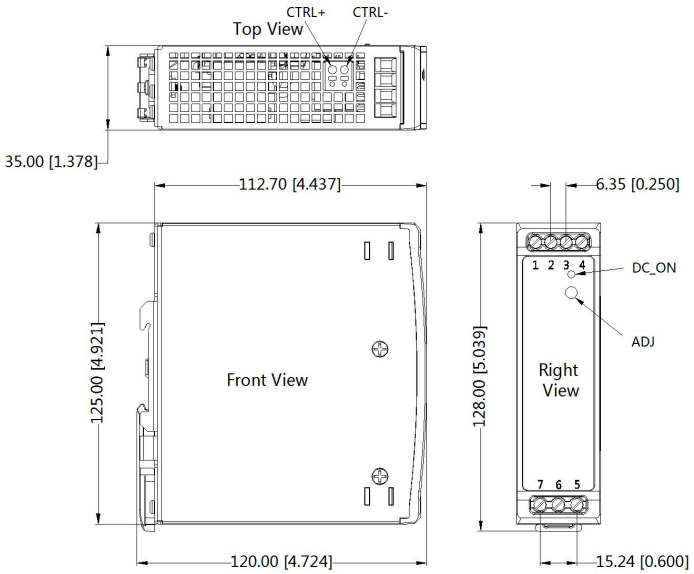


Fig. 2: Remote control Applications circuit

*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

Dimensions and Recommended Layout



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: ±1.00[±0.039]

Notes:

1. Packing information please refer to Product Packing Information which can be downloaded from www.mornsun-power.com. Packing bag number: 58220028;
2. If the product is not operated within the required load range, the product performance cannot be guaranteed to comply with all parameters in the datasheet;
3. Unless otherwise specified, parameters in this datasheet were measured under the conditions of Ta=25 ℃, humidity<75% with nominal input voltage and rated output load;
4. All index testing methods in this datasheet are based on our Company's corporate standards;
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. Our products shall be classified according to ISO14001 and related environmental laws and regulations, and shall be handled by qualified units.

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