AC/DC Converter

LI24-10Bxx Series

MORNSUN®

24W, single output AC/DC converter

3 years Warranty

c UL us RoHS

FEATURES

- Universal input voltage range: 90~264VAC
- High efficiency up to 85%(Typ)
- AC and DC dual-use(input from the same terminal)
- Standard Din Rail installation
- Output voltage adjustable
- Low ripple & noise
- Input under-voltage protection, output short circuit, constant-current protections
- Redundancy Module
- Industrial level specifications
- Meets UL60950 standards

LI24-10Bxx series---- 24W converter offered by Mornsun. It features Cost-effective, standard rail mounting, energy efficient. This series of products can be used in industrial process controls, machine tools and other equipment exposed to a difficult industrial environment. Compact size, light weight, standard Din Rail installation (35mm) and other features of these power supplies, which saves a lot of space for your design. Build-in large capacitor provides for you enough hold-up time.

Selection Guide

Certification	Part No.	Output Power	Nominal Output Voltage and Current(Vo/Io)	Efficiency (230VAC, %/Typ.)	Max. Capacitive Load(μF)
UL	LI24-10B05	20W	5V/4A	75	10000
	LI24-10B12	24W	12V/2A	85	6000
	LI24-10B24		24V/1A	87	4000

Input Specifications

Item		Operating Conditions	Min.	Typ.	Max.	Unit
Input Voltage Range		AC input	90	--	264	VAC
		DC input	120	--	370	VDC
Input Frequency			47	--	63	Hz
Input Current		115VAC	--	--	0.5	A
		230VAC	--	--	0.3	
Inrush Current		115VAC	--	16	--	
		230VAC	--	30	--	
Input Under-voltage Protection	Start-up Voltage	AC input	70	--	90	VAC
	Shutdown Voltage	AC input	50	--	70	VAC
Hot Plug			Unavailable			

Output Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Output Voltage Range	LI24-10B05	5.0~5.5			VDC
	LI24-10B12	12~14			
	LI24-10B24	24~27			
Output Voltage Accuracy		--	±2	--	%
Line Regulation	Full load	--	±0.5	--	
Load Regulation	10%-100% load	--	±1	--	
Ripple & Noise*	20MHz bandwidth (peak-peak value)	--	50	100	mV
Temperature Coefficient		--	±0.02	--	%/℃
Short Circuit Protection		Continuous, self-recovery			

Constant-current Protection	LI24-10B05	--	4.4	--	A
	LI24-10B12	--	2.4	--	
	LI24-10B24	--	1.3	--	
Over-voltage Protection	LI24-10B05	--	--	6.5	VDC
	LI24-10B12	--	--	20	
	LI24-10B24	--	--	30	
Min. Load		0	--	--	%
Hold-up Time	230VAC input	--	80	--	ms
Note: * Ripple and noise are measured by "parallel cable" method, please see AC-DC Converter Application Notes for specific operation.					

General Specifications

Item		Operating Conditions	Min.	Typ.	Max.	Unit
Isolation Voltage	Input-output	Test time: 1min	3000	--	--	VAC
	Input-⏚		1500	--	--	
Operating Temperature			-25	--	+70	℃
Storage Temperature			-25	--	+105	
Storage Humidity			--	--	95	%RH
Switching Frequency			--	60	--	KHz
Power Derating		0℃~-25℃	2.4	--	--	%/℃
		+50℃~+70℃（LI24-10B05）	3			
		+55℃~+70℃（others）	4			
Safety Standard			IEC60950/EN60950/UL60950			
Safety Certification			UL60950			
Safety Class			CLASS I			
MTBF			MIL-HDBK-217F@25℃ > 300,000 h			

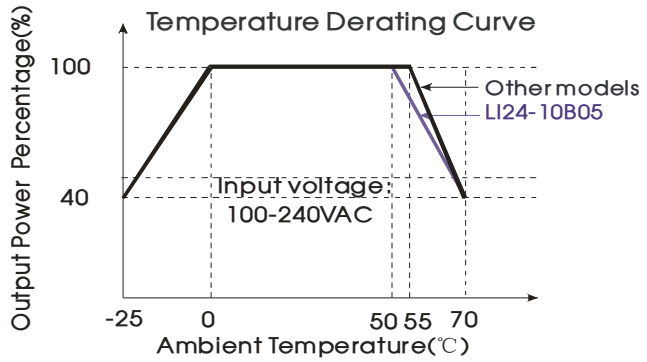
Physical Specifications

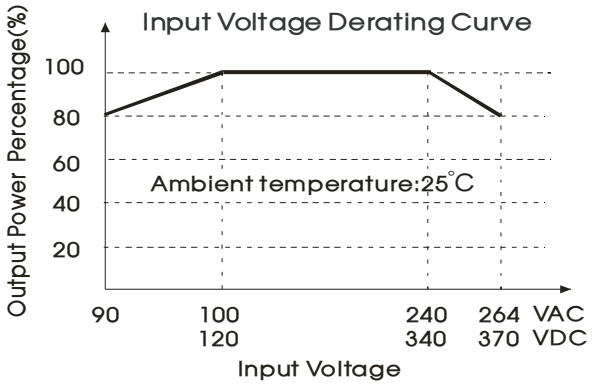
Casing Material	heat-resistant plastic (UL94-V0) and metal
Dimension	Refer to the Dimensions
Weight	170(Typ.)±20 g
Cooling Method	Free convection

EMC Specifications

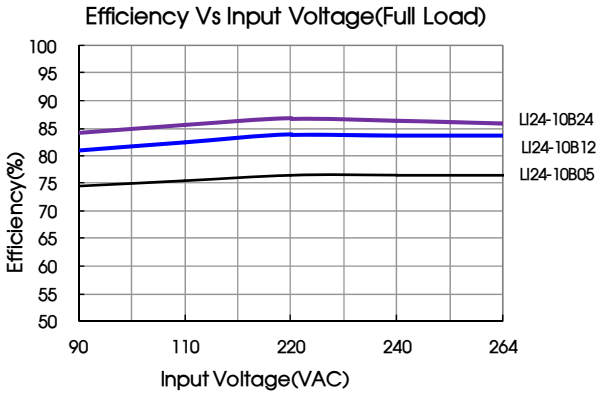
EMI	CE	CISPR22/EN55022, CLASS B	
	RE	CISPR22/EN55022, CLASS B	
EMS	ESD	IEC/EN61000-4-2 ±4KV/±8KV	Perf. Criteria B
	RS	IEC/EN61000-4-3 3V/m	perf. Criteria A
	EFT	IEC/EN61000-4-4 ±1KV	perf. Criteria B
	Surge	IEC/EN61000-4-5 ±1KV/±2KV	perf. Criteria B
	CS	IEC/EN61000-4-6 10 Vr.m.s	perf. Criteria A
	PFM	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

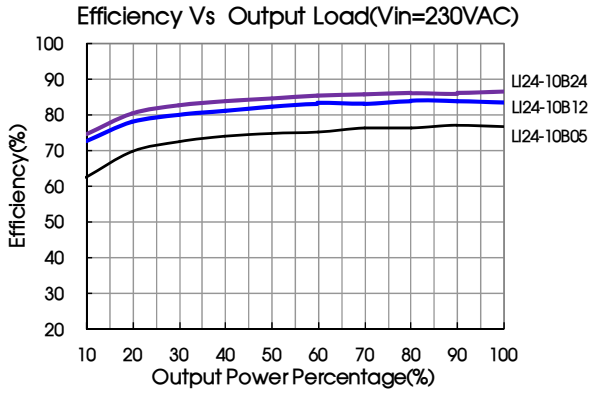
Product Characteristic Curve





Note: ①Input voltage should be derated based on temperature derating when it is 90~100VAC/240~264 VAC/340~370VDC;
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

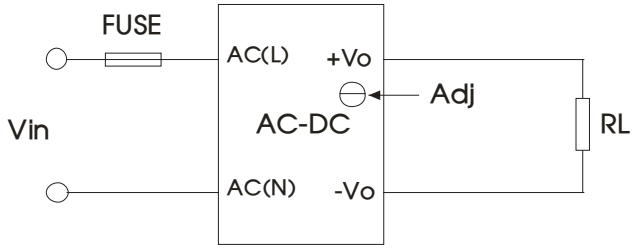


Fig. 1

Note:
1. Vin: 90 - 264VAC or 120 - 370VDC;
2. Adj: Adjusting terminal of output voltage. Users can adjust any load freely within the range of output voltage according to your own need.

2. Remote control Applications circuit

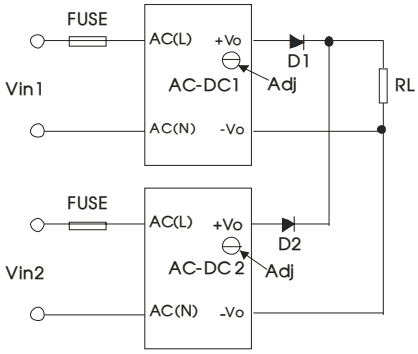


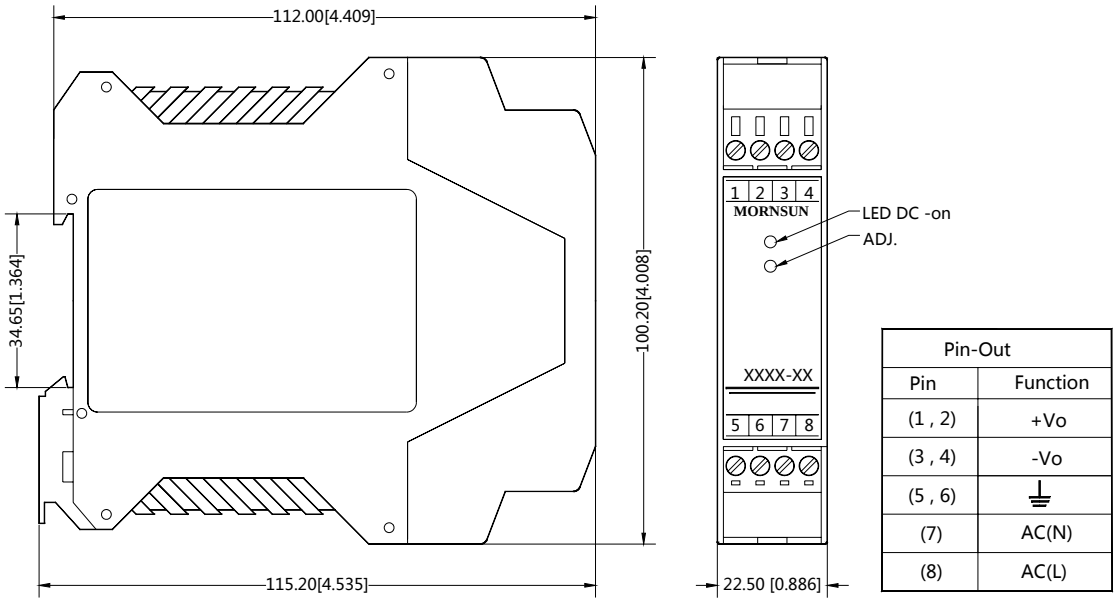
Fig. 2:

Note:
1. Two same Din Rail power supplies are in use of parallel connection application,Vin1 and Vin2 are both 90-264VAC or 120-370VDC;
2. Adj: Adjusting terminal of output voltage. Users can adjust any load freely within the range of output voltage according to your own need.
3. When AC-DC2's output voltage is a little lower than AC-DC1's, AC-DC2 is becoming a spare power supply for load, as Vin1 is off or AC-DC1 is in fault.
4. When Vin1 and Vin2 are supplying power to Din Rail power supply alternately, Din Rail power supply will work alternately and supply power to load sostenuto.

3. For more information about Mornsun EMC Filter products, please visit www.mornsun-power.com to download the Selection Guide of EMC Filter

Dimensions and Recommended Layout

THIRD ANGLE PROJECTION



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

Note:
Unit:mm[inch]
Wire range : 28-12 AWG
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:58220009;
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. The performance parameters of the product models listed in this manual are as above, but some parameters of non-standard model products may exceed the requirements mentioned above. Please contact our technicians directly for specific information;
6. We can provide product customization service;
7. 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