

24W, single output AC/DC converter



UL RoHS

FEATURES

- Universal Input: 90 - 264VAC
- High efficiency up to 87%
- AC and DC dual-use (input from the same terminal)
- DIN-Rail mounting
- Adjustable Output Voltage
- Low ripple & noise
- Output short circuit, over-current, over-voltage protection
- Application circuits in parallel
- Industrial-grade design
- Meets UL60950 standard (Pending)

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 (Pending)	LI24-10B05	20W	5V/4A	75	10000
	LI24-10B12	24W	12V/2A	85	6000
	LI24-10B24		24V/1A	87	2000

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	--	--	0.6	A
	230VAC	--	--	0.3	
Inrush Current	115VAC	--	16	--	
	230VAC	--	30	--	
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	0%-100% load	--	±1	--	
Ripple & Noise*	20MHz bandwidth (peak-peak value)	--	50	150	
Temperature Coefficient		--	±0.02	--	%/°C
Short Circuit Protection		Continuous, self-recovery			
Over-current Protection		≥110%Io, self-recovery			
Over-voltage Protection	LI24-10B05	7.5VDC			
	LI24-10B12	20VDC			
	LI24-10B24	30VDC			

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	3000	--	--	VAC
	Input- \perp	1500	--	--	
Operating Temperature	Test time: 1min	-40	--	+70	°C
Storage Temperature		-40	--	+85	
Storage Humidity		--	--	95	%RH
Switching Frequency		--	65	--	KHz
Power Derating	-40°C to -25°C	4.0	--	--	% / °C
	+50°C to +70°C (LI24-10B05)	3.0			
	+55°C to +70°C (others)	4.0			
Safety Standard		IEC60950/EN60950/UL60950			
Safety Certification		UL60950 (Pending)			
Safety Class		CLASS I			
MTBF		MIL-HDBK-217F@25°C > 300,000 h			

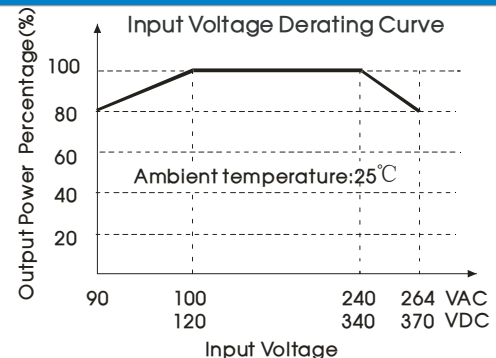
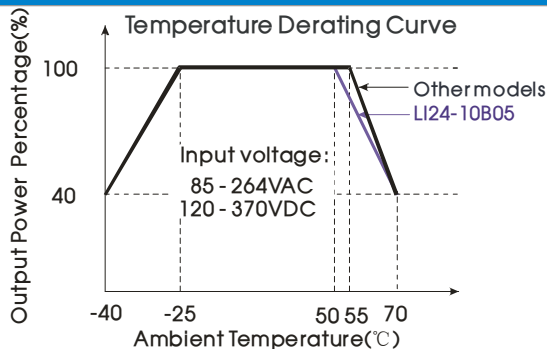
Physical Specifications

Casing Material	Heat-resistant plastic (UL94V-0) and metal
Dimension	115.20*100.20*22.50 mm
Weight	150g (Typ.)
Cooling Method	Free air convection

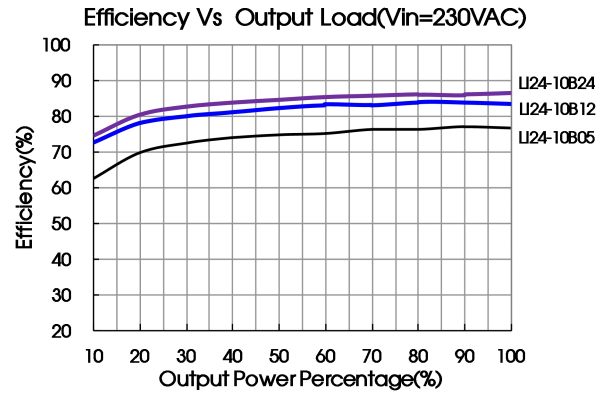
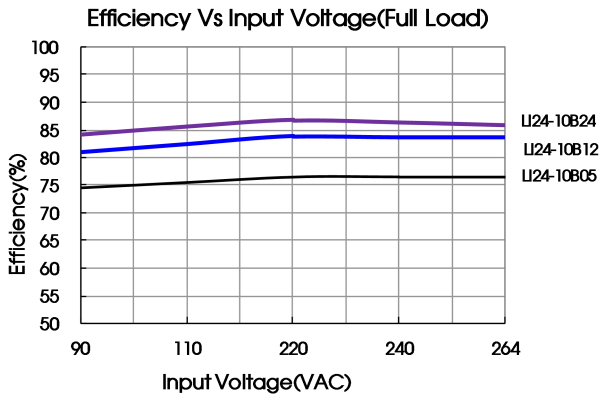
EMC Specifications

EMI	CE	CISPR22/EN55022	CLASS B	
	RE	CISPR22/EN55022	CLASS B	
EMS	ESD	IEC/EN61000-4-2	Contact \pm 4KV/Air \pm 8KV	Perf. Criteria B
	RS	IEC/EN61000-4-3	10V/m	perf. Criteria A
	EFT	IEC/EN61000-4-4	\pm 2KV	perf. Criteria B
	Surge	IEC/EN61000-4-5	line to line \pm 1KV/line to ground \pm 2KV	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: ① Input voltage should be derated based on temperature derating when it is 90-100VAC/240-264 VAC/340-370VDC;
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

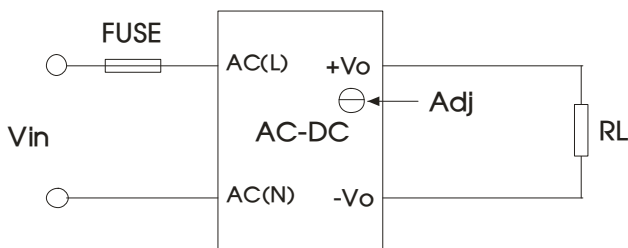


Fig. 1

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

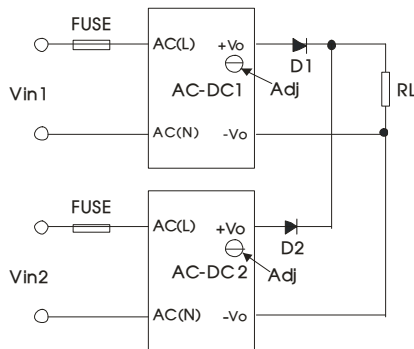


Fig. 2:

Note:

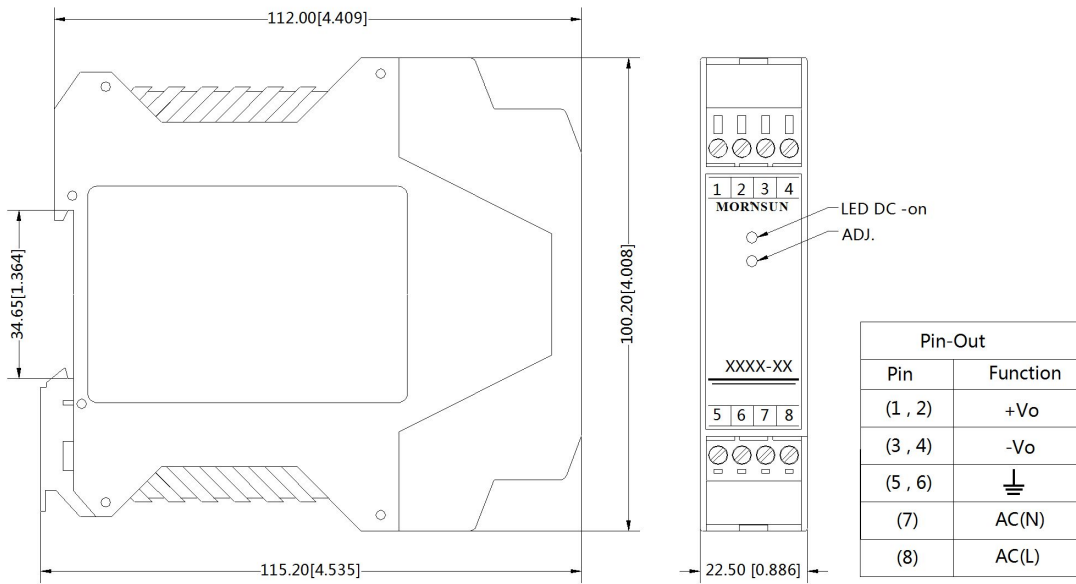
1. Two same Din Rail power supplies are in use of parallel connection application. Vin1 and Vin2 are both 90-264VAC or 120-370VDC;
2. Adj: Adjusting terminal of output voltage. Users can adjust any load freely within the range of output voltage according to your own need.
3. When AC-DC2's output voltage 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.

Element model	Recommended value
FUSE	3.15A/250V, slow fusing, necessary
D1/D2	≥10A

3. For more information Please find the application note on www.mornsun-power.com

Dimensions and Recommended Layout

THIRD ANGLE PROJECTION



Note:
Unit: mm[inch]
Wire range: 28-12 AWG
Tightening torque: Max 0.4 N·m
Mounting rail: TS35
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: 58040010;
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°C, 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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