



RoHS



FEATURES

- Universal 85 - 264VAC or 120 - 370 VDC Input voltage
- Accepts AC or DC input (dual-use of same terminal)
- Operating ambient temperature range: -40°C to +70°C
- High efficiency up to 94%, high reliability
- DC OK function
- Active PFC
- 150% peak load output for 3 seconds
- DC ON output status indicator LED
- Output short circuit, over-current, over-voltage, over-temperature protection
- Safety according to IEC/EN/UL62368, UL61010, UL508

LIF120-10BxxR2 is Mornsun AC-DC converter series featuring a cost-effective, energy efficient explosion-proof solution for standard DIN-rail mounting. The products offer a high level of stability and immunity to noise, compliant with international IEC62368 standards for EMC and safety specifications meet IEC/EN/UL62368, UL61010, UL508. These light weight AC-DC converters also have an extremely compact design for space saving and are ideal for applications such as industrial control equipment, machinery, and all kinds of applications in a harsh environments.

Selection Guide

Certification	Part No.	Output Power (W)	Nominal Output Voltage and Current (Vo/Io)	Output Voltage Adjustable Range (V)	Efficiency at 230VAC (%) Typ.	Max. Capacitive Load (μF)
UL/CE (Pending)	LIF120-10B12R2	120	12V/10A	11.8-14.0	93.5	80,000
	LIF120-10B24R2		24V/5A	23.5-28.0	94	50,000
	LIF120-10B48R2		48V/2.5A	47.0-53.0	94	30,000

Input Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Input Voltage Range	Rated input	100	--	240	VAC
	AC input	85	--	264	
	DC input	120	--	370	VDC
Input Frequency	AC input	47	--	63	Hz
Input Current	115VAC	--	--	1.5	A
	230VAC	--	--	0.75	
Inrush Current	115VAC	--	15	--	
	230VAC	--	30	--	
Power Factor	115VAC	--	0.98	--	--
	230VAC	--	0.94	--	
Start-up Delay Time	230VAC	--	300	1000	ms
Leakage Current	240VAC	<1mA			
Hot Plug		Unavailable			

Output Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit	
Output Voltage Accuracy	Full load range	--	±1	--	%	
Line Regulation	Rated load	--	±0.5	--		
Load Regulation	0% - 100% load	--	±1	--		
Ripple & Noise*	20MHz bandwidth (peak-peak value)	12V	--	--	100	mV
		24V	--	--	100	
		48V	--	--	200	
Stand-by Power Consumption		--	2	--	W	
Hold-up Time		--	20	--	ms	
DC OK Signal*		30VDC/1A Max.				
Short Circuit Protection	Recovery time < 10s after the short circuit disappear.	Constant current hiccup mode (constant				

			current mode works 1s and stop 10s continuous, self-recovery			
Over-current Protection	230VAC, rated load	Normal temperature, high temperature	105% - 200% Io, self-recovery			
		Low temperature	≥ 105% full load after derating, self-recovery			
Over-voltage Protection	12V	≤ 18V (Hiccup, self-recovery after the abnormality is removed)				
	24V	≤ 35V (Hiccup, self-recovery after the abnormality is removed)				
	48V	≤ 60V (Hiccup, self-recovery after the abnormality is removed)				
Over-temperature Protection	230VAC, 70% load	Over-temperature protection start	--	90	--	°C
		Over-temperature protection release	60	--	--	

Note: 1.*The "Tip and barrel method" is used for ripple and noise test, output parallel 47uF electrolytic capacitor and 0.1uF ceramic capacitor, please refer to Enclosed Switching Power Supply Application Notes for specific information;
2.*DC OK Signal: When the output voltage is normal, the relay is connected. When the output voltage is abnormal (<90%Vo), the relay is disconnected.

General Specifications

Item	Operating Conditions		Min.	Typ.	Max.	Unit	
Isolation Test	Input - ⊕	Electric strength test for 1min., leakage current <15mA	1500	--	--	VAC	
	Input - output		3000	--	--		
	Output - ⊕		500	--	--		
Insulation Resistance	Input - ⊕	At 500VDC	50	--	--	MΩ	
	Input - output		50	--	--		
	Output - ⊕		50	--	--		
Operating Temperature			-40	--	+70	°C	
Storage Temperature			-40	--	+85		
Operating Humidity	Non-condensing		--	--	95	%RH	
Storage Humidity			20	--	95		
Switching Frequency			--	100	--	KHz	
Power Derating	Operating temperature derating	-40°C to -25°C	3.34	--	--	% / °C	
		+55°C to +70°C	85VAC-164VAC	2.0	--		--
		+60°C to +70°C	165VAC-264VAC	3.0	--		--
	Input voltage derating		85VAC-100VAC	0.67	--	--	%/VAC
Safety Standards			Meet IEC/EN/UL62368/UL61010/UL508				
Safety Certification			EN62368/UL61010 (Pending)				
Safety Class			CLASS I				
MTBF	MIL-HDBK-217F@25°C		> 300,000 h				

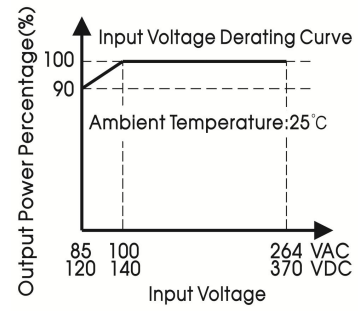
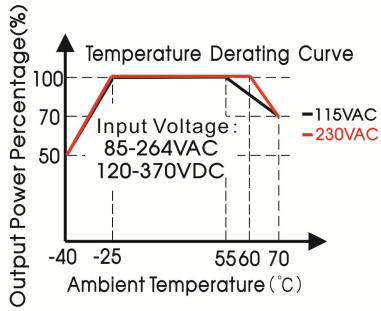
General Specifications

Case Material	Metal (AL1100, SPCC) and Plastic (PC940)
Dimensions	110.00 x 32.00 x 124.00mm
Weight	490g±10% (Typ.)
Cooling Method	Free air convection

EMC Specifications

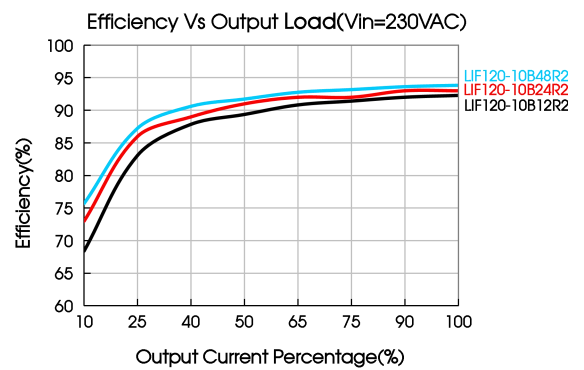
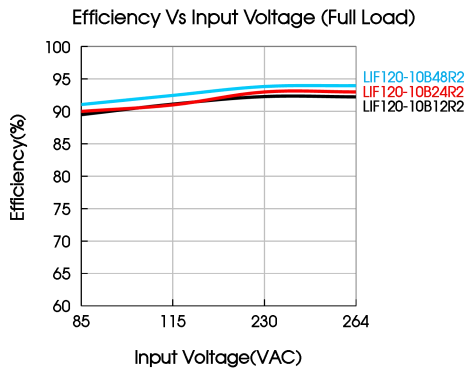
EMI	CE	CISPR32/EN55032	CLASS B	
	RE	CISPR32/EN55032	CLASS B	
	Harmonic current	IEC/EN61000-3-2	CLASS A and CLASS D	
EMS	ESD	IEC/EN 61000-4-2	Contact ±6KV/Air ±8KV	perf. Criteria A
	RS	IEC/EN 61000-4-3	10V/m	perf. Criteria A
	EFT	IEC/EN 61000-4-4	±4KV	perf. Criteria A
	Surge	IEC/EN 61000-4-5	line to line ±2KV/line to ground ±4KV	perf. Criteria A
	CS	IEC/EN61000-4-6	10 Vr.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

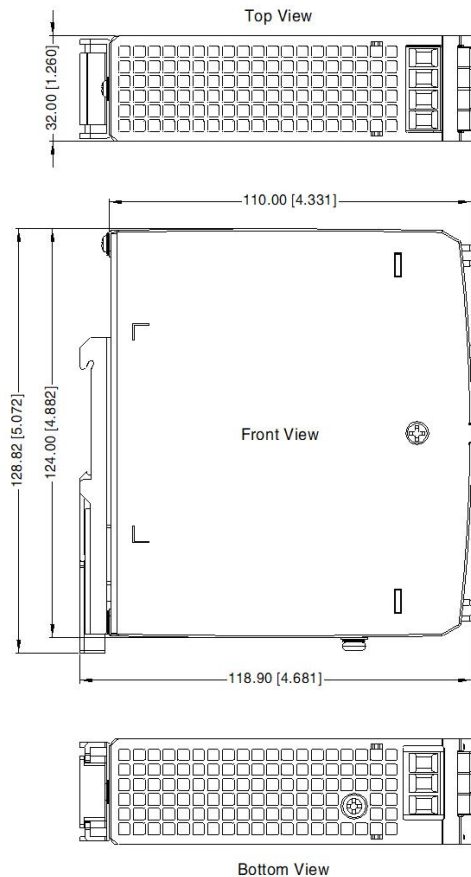


Note: 1. With an AC input voltage between 85-100VAC and a DC input between 120-140VDC the output power must be derated as per the temperature derating curves;

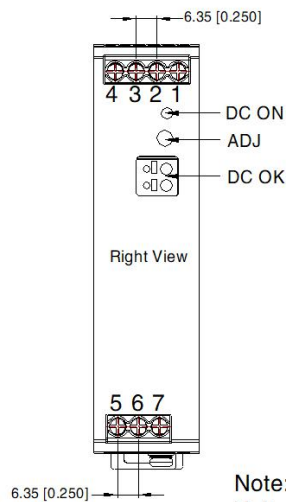
2. This product is suitable for applications using natural air cooling; for applications in closed environment please consult Mornsun FAE.



Dimensions and Recommended Layout



THIRD ANGLE PROJECTION



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

Note:
Unit: mm[inch]
DC ON: Output status indicator LED
ADJ: Output adjustable resistor
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]

Note:

1. For additional information on Product Packaging please refer to www.mornsun-power.com.Packaging bag number: 58220189;
2. Unless otherwise specified, parameters in this datasheet were measured under the conditions of Ta=25℃, humidity<75% RH with nominal input voltage and rated output load;
3. The room temperature derating of 5℃/1000m is needed for operating altitude greater than 2000m;
4. All index testing methods in this datasheet are based on our company corporate standards;
5. In order to improve the efficiency at high input voltage, there will be audible noise generated, but it does not affect product performance and reliability;
6. We can provide product customization service, please contact our technicians directly for specific information;
7. Products are related to laws and regulations: see "Features" and "EMC";
8. The out case needs to be connected to the earth (⊕) of system when the terminal equipment in operating;
9. The output voltage can be adjusted by the output adjustable resistance ADJ, turn it down clockwise.

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