



## FEATURES

- Universal 85 - 264VAC or 120 - 370VDC Input voltage
- Accepts AC or DC input (dual-use of same terminal)
- Operating ambient temperature range: -40°C to +70°C
- High efficiency, high reliability
- Built-in active PFC function
- 150% peak load output for 3 seconds
- LED indicator for power on
- Output short circuit, over-current, over-voltage, over-temperature protection
- Safety according to IEC/UL/BS EN 62368, UL61010, UL508, EN61558

LIF240-10BxxR2S is Mornsun AC-DC converter series featuring a cost-effective, energy efficient green power supply solution for standard DIN-rail mounting. The products offer a high level of stability and immunity to noise for industrial control equipment, machinery, and other industrial equipment in a variety of harsh environments. These light weight AC-DC converters have an extremely compact design and the standard rail installation for space saving. With good EMC performance, compliant with international IEC/EN/UL/BS EN 62368, UL61010, UL508, EN61558 standards for EMC and safety.

## 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)
EN/BIS	LIF240-10B12R2S	192	12V/16A	12.0-14.0	93	160,000
	LIF240-10B24R2S	240	24V/10A	24.0-28.0	94	40,000
	LIF240-10B48R2S		48V/5A	48.0-53.0		10,000

Note: \*Use suffix "QQ" for double-faced conformal coating.

## Input Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Input Voltage Range	Rated input (Certified voltage)	100	--	240	VAC
	AC input	85	--	264	VAC
	DC input	120	--	370	VDC
Input Voltage Frequency		47	--	63	Hz
Input Current	115VAC	--	--	3	A
	230VAC	--	--	1.5	
Inrush Current	115VAC	--	15	--	
	230VAC		30	--	
Power Factor	115VAC	--	0.98	--	
	230VAC	--	0.95	--	
Leakage Current	264VAC	Input - output	<0.5mA		
		Input - ⊕	<1mA		
Hot Plug		Unavailable			

## Output Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Output Voltage Accuracy	Full load range	12V	--	±2.0	%
		24V/48V	--	±1.0	

Line Regulation	Rated load	--	±0.5	--	
Load Regulation	0% - 100% load	--	±1.0	--	
Ripple & Noise*	20MHz bandwidth (peak-to-peak value)	--	75	150	mV
Hold-up Time		--	20	--	ms
Short Circuit Protection	Recovery time < 10s after the short circuit disappear.	Constant current, continuous, self-recovery			
Over-current Protection	230VAC, rated load	Normal temperature, high temperature		110% - 200% Io, self-recovery	
		Low temperature		≥ 105% Io, self-recovery	
Over-voltage Protection	12V	≤ 18V (Hiccup, self-recovery)			
	24V	≤ 35V (Hiccup, self-recovery)			
	48V	≤ 60V (Hiccup, self-recovery)			
Over-temperature Protection	230VAC, rated load	--	80	--	°C

Note: \*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.

## General Specifications

Item	Operating Conditions		Min.	Typ.	Max.	Unit
Isolation Test	Input - ⊕	Electric strength test for 1min., leakage current <10mA	2000	--	--	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	
Storage Humidity	Non-condensing		--	--	95	%RH
Operating Humidity			--	--	90	
Switching Frequency			--	100	--	kHz
Power Derating	Operating temperature derating	-40°C to -25°C	3.34	--	--	% / °C
		+40°C to +70°C	1.67	--	--	
		+50°C to +70°C	2.5	--	--	
	Input voltage derating		85VAC-100VAC	1.33	--	--
Safety Standard			IS13252 (Part1) safety approved & EN62368-1 (Report) Design refer to IEC/UL/BS EN 62368-1, UL508, UL61010-1, EN61558-1, EN61558-2-16			
Safety Class			CLASS I			
MTBF	MIL-HDBK-217F@25°C		>300,000 h			

## Mechanical Specifications

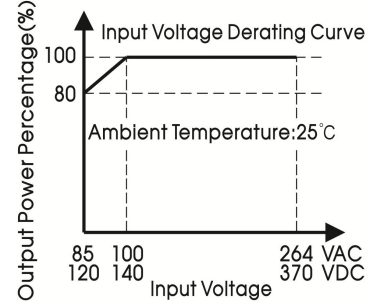
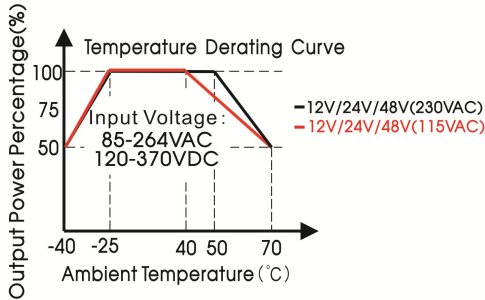
Case Material	Metal (AL1100, SPCC) and Plastic (PC945)
Dimensions	124.00 x 54.00 x 110.00mm
Weight	600g (Typ.)
Cooling Method	Free air convection

## Electromagnetic Compatibility (EMC)

Emissions	CE	CISPR32/EN55032 CLASS B
	RE	CISPR32/EN55032 CLASS B
	Harmonic current	IEC/EN61000-3-2 CLASS A and CLASS D

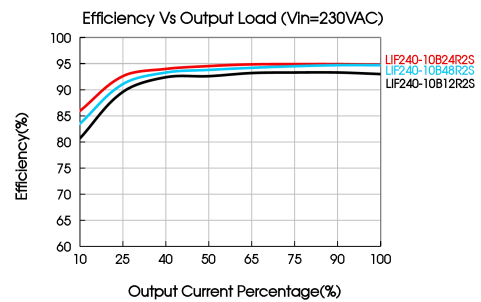
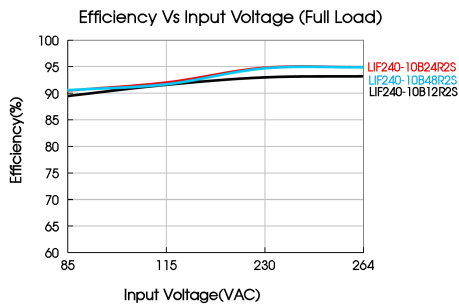
Immunity	ESD	IEC/EN 61000-4-2 Contact ±6KV/Air ±8KV	perf. Criteria A
	RS	IEC/EN 61000-4-3 10V/m	perf. Criteria A
	EFT	IEC/EN 61000-4-4 ±2KV	perf. Criteria A
	Surge	IEC/EN 61000-4-5 line to line ±2KV/line to ground ±4KV	perf. Criteria A
	CS	IEC/EN61000-4-6 10 Vr.m.s	perf. Criteria A
	Voltage dips, short interruptions and voltage variations immunity	IEC/EN61000-4-11 0%, 70%	perf. Criteria B

## Product Characteristic Curve

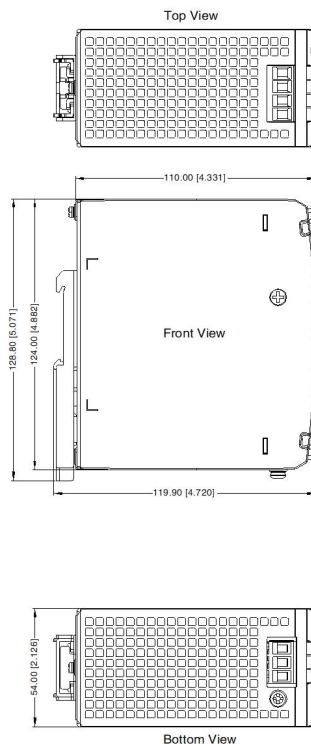


Note: 1. With an AC input voltage between 85 -100VAC and a DC input between 120-140VDC the output power must be derated as per the temperature derating curves;

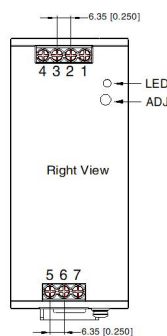
2. This product is suitable for applications using natural air cooling; for applications in closed environment please consult Mornsun FAE.



## 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]

LED: Output status indicator LED

ADJ: Output adjustable resistor

Wire range: Input: 26-10AWG(12-10AWG for pin7)

Output: 12V: 12-10AWG

24V: 16-10AWG

48V: 18-10AWG

Tightening torque: Max 0.79N · 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](http://www.mornsun-power.com). Packaging bag number: 58220231;
2. Unless otherwise specified, parameters in this datasheet were measured under the conditions of  $T_a=25^{\circ}\text{C}$ , humidity <75%RH with nominal input voltage and rated output load;
3. The room temperature derating of  $5^{\circ}\text{C}/1000\text{m}$  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 PE ( $\perp$ ) of system when the terminal equipment in operating;
9. The output voltage can be adjusted by the ADJ, clockwise to increase;
10. 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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