



## 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/UL62368, UL508, EN61558



EN62368-1 BS EN62368-1 UL61010-1

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/UL	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	Cold start	--	15		--
	230VAC		--	30		--
Power Factor	115VAC	--	0.98	--	--	
	230VAC	--	0.95	--	--	
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.		Hiccup mode, constant current works 1s, turn off 10s, 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 - ⊕	Ambient temperature: 25 ± 5°C	50	--	--	MΩ
	Input - output	Relative humidity: < 95%RH, no condensation	50	--	--	
	Output - ⊕	Test voltage: 500VDC	50	--	--	
Isolation level	Input - output		2 x MOPP			
	Input - ⊕		1 x MOPP			
	Output - ⊕		1 x MOPP			
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	--	--
Leakage Current	264VAC, 60Hz	Touch current	< 0.5mA			
		Earth leakage current	< 1mA			
Safety Standard			IS13252 (Part1), UL61010-1 safety approved & EN62368-1, BS EN 62368-1 (Report) Design refer to IEC/UL62368-1, UL508, EN61558-1, EN61558-2-16			
Safety Class			CLASS I			
MTBF	MIL-HDBK-217F@25°C		>300,000 h			

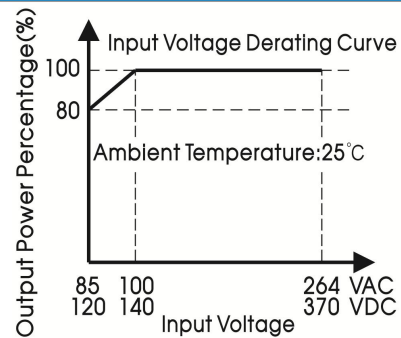
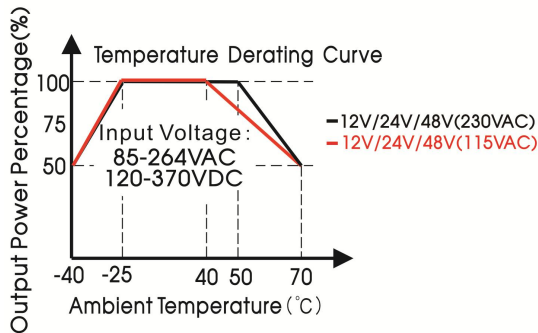
## Mechanical Specifications

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

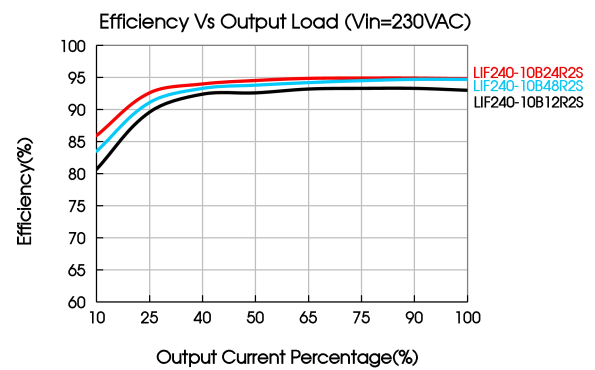
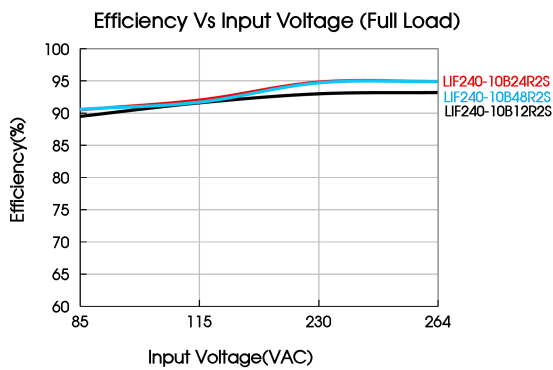
Electromagnetic Compatibility (EMC)

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

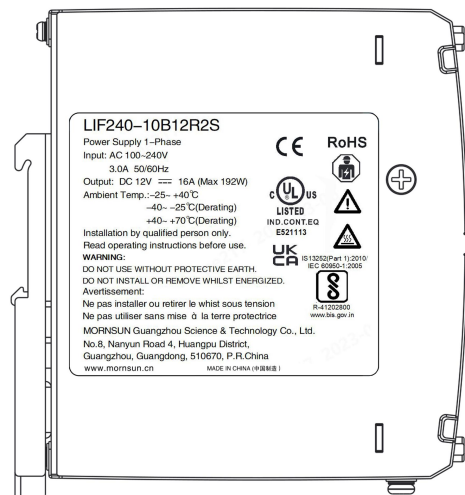
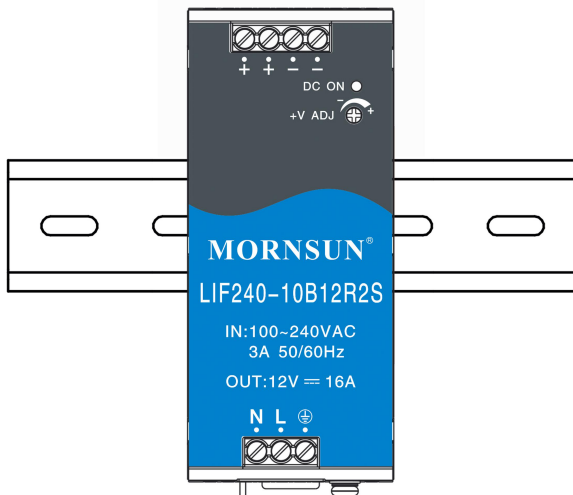
Product Characteristic Curve



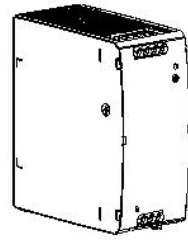
- Note: 1. With an AC input voltage between 85-100VAC and a DC input between 120-140VDC the output power must be derated as per the temperature derating curves;  
2. This product is suitable for applications using natural air cooling; for applications in closed environment please consult Mornsun FAE.



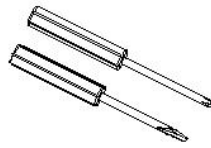
Installation Diagram



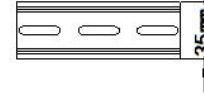
Materials required in the installation		
1	Product	1 PC
2	Phillips screwdriver Slotted screwdriver	1 PC
3	TS35/7.5 or TS35/15	1 PC
	26-10AWG Wire	/ PCS
4	The content is for reference only. Regarding the actual wire diameter and tightening torque, refer to the dimensional drawing.	



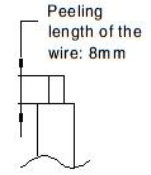
Product



Phillips screwdriver  
Slotted screwdriver  
Diameter of the cutting  
Diameter: 3mm



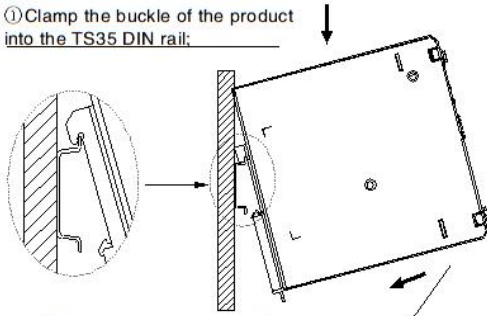
TS35/7.5 or TS35/15



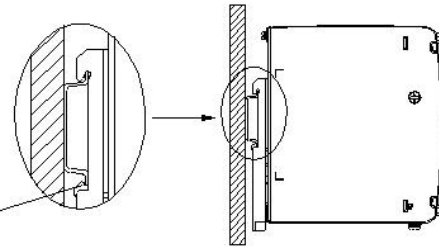
26-10AWG Wire

### Installation Steps ①-②

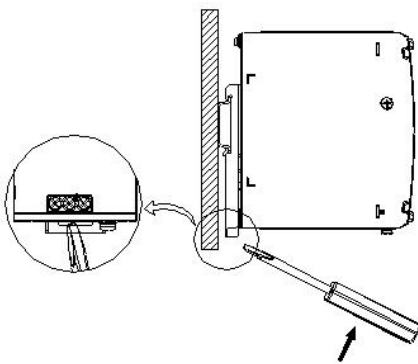
① Clamp the buckle of the product into the TS35 DIN rail:



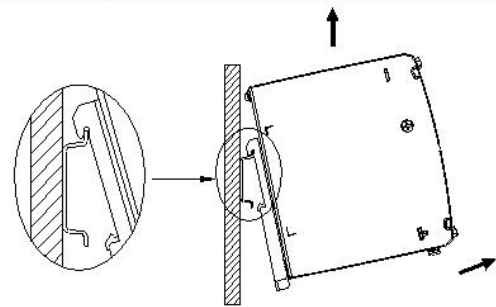
② Push the product vertically towards the TS35 DIN rail until hearing the sound of the buckle snapping into it.



### Disassembly Steps ③-④

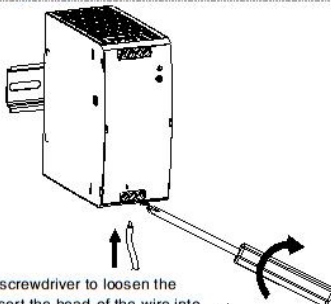


③ After inserting the Slotted screwdriver into the square groove at the bottom of the buckle, push the slider of the buckle downward in the direction shown in the figure.



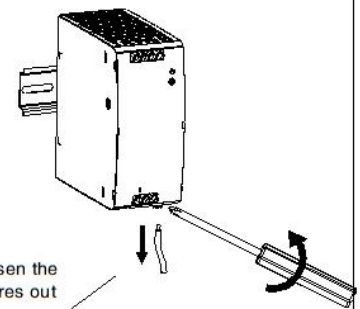
④ Hold the bottom of the product and push it outwards, then lift the product up to take the product out of the DIN rail.

### Wiring / Unwiring Steps ⑤-⑥



⑤ Use the Phillips screwdriver to loosen the terminal screws, insert the head of the wire into the bottom of the terminal, and then turn the screwdriver to tighten the terminal screws.

Tightening torque:  
Max0.79 N · m (For reference);

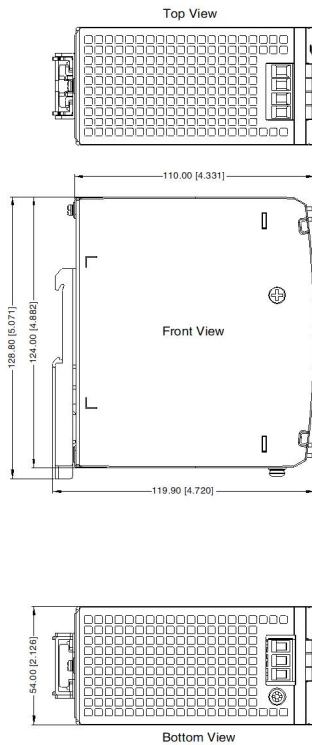


⑥ The Phillips screwdriver to loosen the terminal screws and pull the wires out of the terminal holes

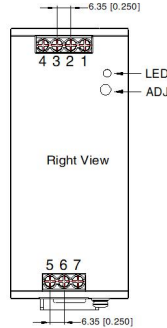
Note: Keep the following installation clearances: 20mm on the top, 20mm on the bottom, 5mm on the left and right sides are recommended when the device is loaded permanently with more than 50% of the rated power. Increase this clearance to 15mm in case the adjacent device is a heat source (e.g. another power supply).



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:

- For additional information on Product Packaging please refer to [www.mornsun-power.com](http://www.mornsun-power.com). Packaging bag number: 58220231;
- Unless otherwise specified, parameters in this datasheet were measured under the conditions of Ta=25°C, humidity <75%RH with nominal input voltage and rated output load;
- The room temperature derating of 5°C/1000m is needed for operating altitude greater than 2000m;
- All index testing methods in this datasheet are based on our company corporate standards;
- 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;
- We can provide product customization service, please contact our technicians directly for specific information;
- Products are related to laws and regulations: see "Features" and "EMC";
- The out case needs to be connected to PE (⊕) of system when the terminal equipment in operating;
- The output voltage can be adjusted by the ADJ, clockwise to increase;
- 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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