AC/DC 75W Din-Rail Power Supply

LI75-20BxxR2S Series

MORNSUN®

CE Report EN62368-1 UKCA BS EN 62368-1 RoHS

FEATURES

- Universal 90 - 264VAC or 120 - 370VDC Input voltage
- Accepts AC or DC input (dual-use of same terminal)
- Operating ambient temperature range: -30℃ to +70℃
- High I/O isolation test voltage up to 4000VAC
- Low ripple & noise
- Output short circuit, over-current, over-voltage, over-temperature protection
- DIN rail TS-35/7.5 or 15 mountable
- Suitable for small chassis and narrow space installation

LI75-20BxxR2S 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 UL61010, IEC/EN/UL/BS EN62368 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	LI75-20B12R2S	75.6	12V/6.3A	12-14	86	6000
	LI75-20B24R2S	76.8	24V/3.2A	24-28	89	1500
	LI75-20B48R2S		48V/1.6A	48-53	90	1000

Input Specifications

Item	Operating Conditions		Min.	Typ.	Max.	Unit
Input Voltage Range	Rated input (Certified voltage)		100	--	240	VAC
	AC input		90	--	264	
	DC input		120	--	370	VDC
Input Voltage Frequency			47	--	63	Hz
Input Current	115VAC		--	--	2	A
	230VAC		--	--	1	
Inrush Current	115VAC	Cold start	--	25	--	
	230VAC		--	45	--	
Leakage Current	240VAC		<0.5mA			
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)	12V	--	--	80	mV
		24V	--	--	120	
		48V	--	--	150	
Temperature Coefficient			--	±0.03	--	%/℃
Minimum Load			0	--	--	%

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Hold-up Time	115VAC		12	--	--	ms
	230VAC		60	--	--	
Short Circuit Protection	Recovery time < 3s after the short circuit disappear.		Constant current, continuous, self-recovery			
Over-current Protection	Normal temperature		105% - 150% Io, constant current mode, automatic recover after fault condition is removed			
	Low temperature, high temperature		≥105%Io, constant current mode, automatic recover after fault condition is removed			
Over-voltage Protection	12V		≤17V (Output voltage turn off, re-power on for recover)			
	24V		≤33V (Output voltage turn off, re-power on for recover)			
	48V		≤60V (Output voltage turn off, re-power on for recover)			
Over-temperature Protection			Output voltage turn off, re-power on for recover after the temperature drops.			

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			4000	--	--	
	Output - ⏚			500	--	--	
Insulation Resistance	Input - ⏚	At 500VDC		50	--	--	MΩ
	Input - output			50	--	--	
	Output - ⏚			50	--	--	
Operating Temperature				-30	--	+70	℃
Storage Temperature				-40	--	+85	
Storage Humidity		Non-condensing		10	--	95	%RH
Operating Humidity				20	--	90	
Switching Frequency				--	65	--	kHz
Power Derating		Operating temperature derating	-30℃ to -10℃	2.0	--	--	%/℃
			+45℃ to +70℃	2.0	--	--	
		Input voltage derating	90VAC - 100VAC	2.0	--	--	%/VAC
Safety Standard				IS13252 (Part1) safety approved & EN62368-1, BS EN 62368-1 (Report) Design refer to UL62368-1, UL61010-1			
Safety Class				CLASS I			
MTBF		MIL-HDBK-217F@25℃		≥300,000 h			

Mechanical Specifications

Case Material	Metal (AL1100, SGCC)
Dimensions	32.00mm x 125.00mm x 87.50mm
Weight	350g (Typ.)
Cooling Method	Free air convection

Electromagnetic Compatibility (EMC)

Emissions	CE	CISPR32/EN55032 CLASS B	
	RE	CISPR32/EN55032 CLASS B	
	THD	IEC/EN 61000-3-2 CLASS A	
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

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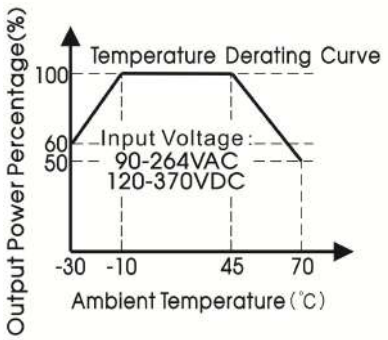
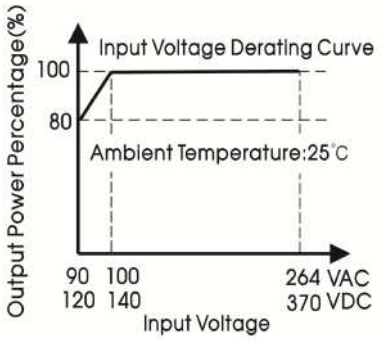
	EFT	IEC/EN 61000-4-4 ±2KV	perf. Criteria A
	Surge	IEC/EN 61000-4-5 line to line ±2KV/line to ground ±4KV	perf. Criteria A
	CS	IEC/EN61000-4-6 10 Vr.m.s	perf. Criteria A
	Voltage dips, short interruptions and voltage variations immunity	IEC/EN61000-4-11 0%, 70%	perf. Criteria B

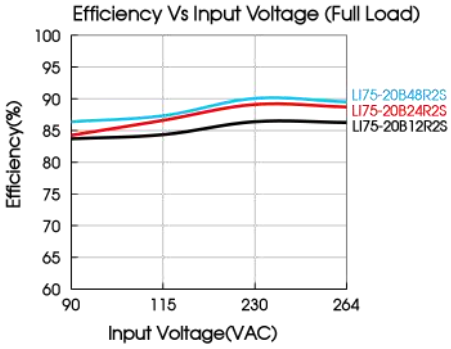
Product Characteristic Curve

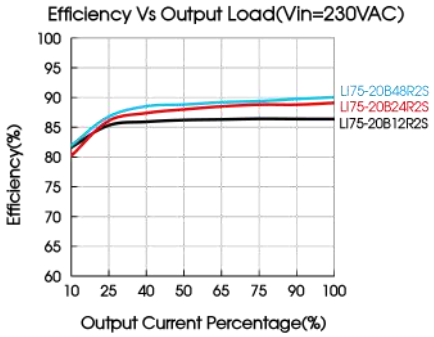




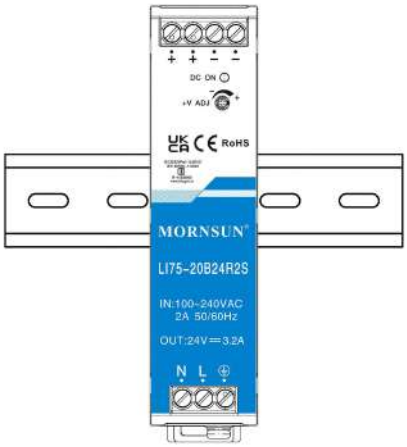
Note: 1. With an AC input voltage between 90 -100VAC and a DC input between 120-140VDC the output power must be derated as per the temperature derating curves;

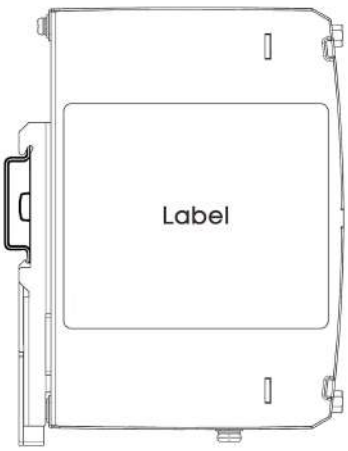
2. This product is suitable for applications using natural air cooling; for applications in closed environment please consult Mornsun FAE.





Installation Diagram





Note: Keep the following installation clearances: 20mm on 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).

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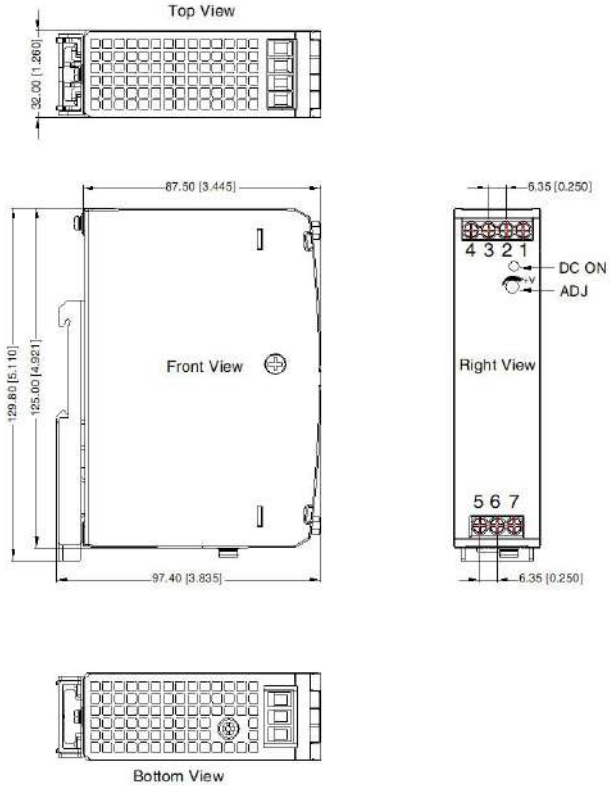
Dimensions and Recommended Layout



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]
ADJ: Output adjustable resistor
Wire range: 26–10 AWG
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. Packaging bag number: 58220214;
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. All index testing methods in this datasheet are based on our company corporate standards;
4. 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;
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. The out case needs to be connected to PE (⏚) of system when the terminal equipment in operating;
8. The output voltage can be adjusted by the ADJ, clockwise to increase;
9. Our products shall be classified according to ISO14001 and related environmental laws and regulations, and shall be handled by qualified units;
10. The power supply is considered a component which will be installed into a terminal equipment. All EMC tests should be confirmed with the final equipment. Please consult our FAE for EMC test operation instructions.

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