



DIN rail TS-35/7.5 or 15 mountable



## FEATURES

- Universal 90 - 264VAC or 120 - 370VDC Input voltage
- Accepts AC or DC input (dual-use of same terminal)
- Operating ambient temperature range: -30°C to +70°C
- The efficiency is up to 90%
- High I/O isolation test voltage up to 4000VAC
- Low ripple & noise
- Output short circuit, over-current, over-voltage, over-temperature protection
- Ultra slim design: suitable for small chassis and narrow space installation
- CISPR32/EN55032 Class B compliant
- Operating altitude up to 5000m
- Meets regulates for harmonic current (IEC61000-3-2), available for lighting application
- Safety according to IEC/EN/UL62368, IEC/EN/UL60335, GB4943, UL508

LI75-20BxxR2 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/UL62368, IEC/EN60335, GB4943, UL508 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/BS	LI75-20B12R2	75	12V/6.3A	12-14	86	6000
	LI75-20B24R2		24V/3.2A	24-28	89	1500
	LI75-20B48R2		48V/1.6A	48-53	90	1000

Note: \*Use suffix "Q" for conformal coating.

## Input Specifications

Item	Operating Conditions		Min.	Typ.	Max.	Unit
Input Voltage Range	AC input		90	--	264	VAC
	DC input		120	--	370	VDC
Input Voltage Frequency			47	--	63	Hz
Input Current	115VAC		--	--	2	A
	230VAC		--	--	1	
Inrush Current	115VAC		--	25	--	
	230VAC		--	45	--	
Leakage Current	240VAC		<3.5mA			
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	--	%/°C
Minimum Load			0	--	--	%
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			105% - 150% 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			

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	°C
Storage Temperature			-40	--	+85	
Storage Humidity	Non-condensing		10	--	95	%RH
Switching Frequency			--	65	--	kHz
Power Derating	Operating temperature derating	-30°C to -10°C	2.0	--	--	% / °C
		+45°C to +70°C	2.0	--	--	
	Input voltage derating	90VAC - 100VAC	2.0	--	--	%/VAC
Safety Standard			IS13252 (Part1) safety approved and EN62368-1, BS EN 62368-1 (Report) Design refer to IEC/UL62368-1, GB4943.1, IEC/EN60335-1, UL508			
Safety Class			CLASS I			
MTBF	MIL-HDBK-217F@25°C		>300,000h			

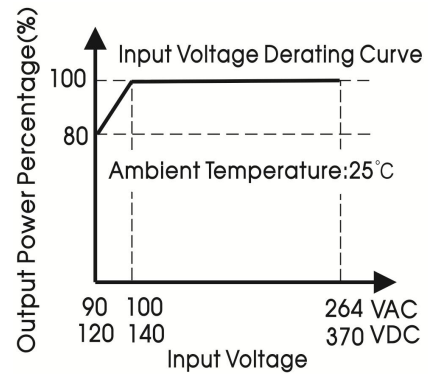
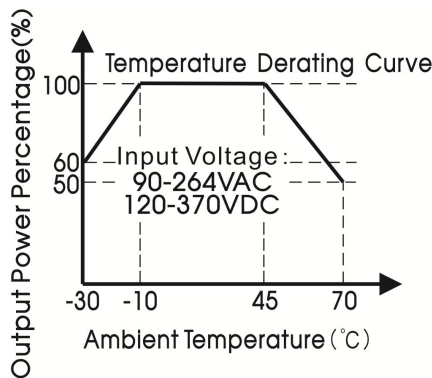
## Mechanical Specifications

Case Material	Metal (AL5052, SGCC) and Plastic (PC940)
Dimensions	30.00 x 128.00 x 120.00 mm
Weight	370g (Typ.)
Cooling Method	Free air convection

## Electromagnetic Compatibility (EMC)

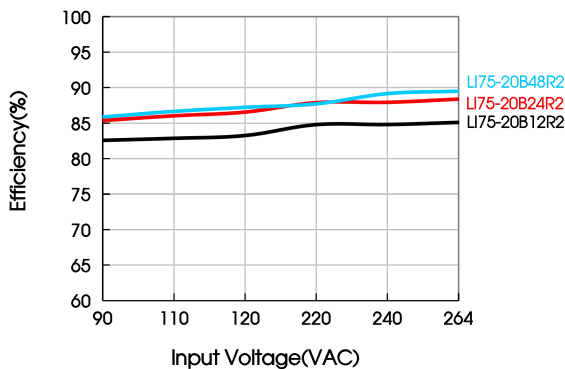
Emissions	CE	CISPR32/EN55032	CLASS B	
	RE	CISPR32/EN55032	CLASS B	
	Harmonic current	IEC/EN61000-3-2	CLASS A	
Immunity	ESD	IEC/EN 61000-4-2	Contact $\pm 4\text{KV}$ /Air $\pm 6\text{KV}$	perf. Criteria A
	RS	IEC/EN 61000-4-3	10V/m	perf. Criteria A
	EFT	IEC/EN 61000-4-4	$\pm 2\text{KV}$	perf. Criteria A
	Surge	IEC/EN 61000-4-5	line to line $\pm 2\text{KV}$ /line to ground $\pm 4\text{KV}$	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

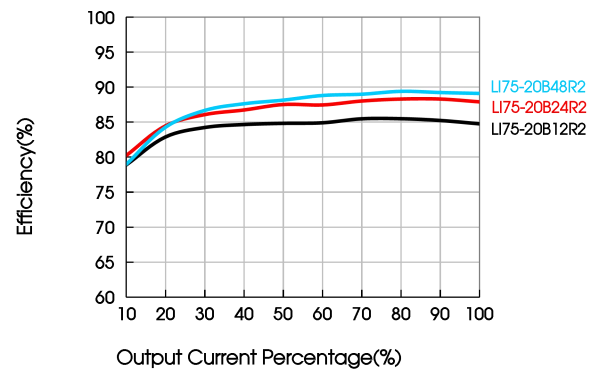


- Note: 1. With an AC input voltage between 90 -100VAC and a DC input between 120-140VDC the output power must be derated as per the temperature derating curves;
2. This product is suitable for applications using natural air cooling; for applications in closed environment please consult Mornsun FAE.

Efficiency Vs Input Voltage (Full Load)

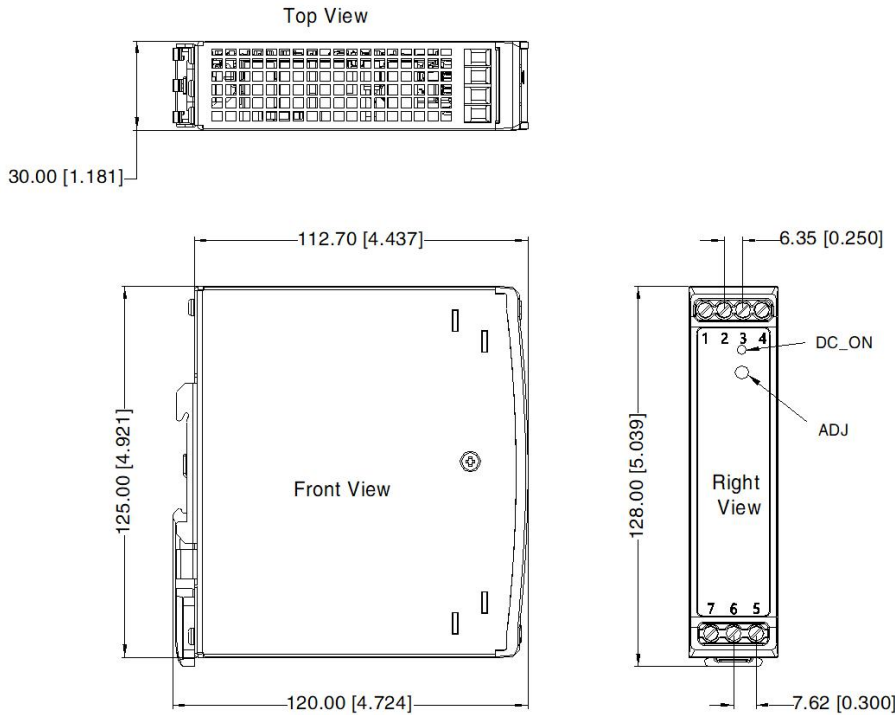


Efficiency Vs Output Load



Dimensions and Recommended Layout

LI75-20BxxR2, LI75-20BxxR2-Q Series



THIRD ANGLE PROJECTION

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

Note:  
 Unit: mm[inch]  
 ADJ: adjustable resistance to change output voltage  
 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:
- For additional information on Product Packaging please refer to [www.mornsun-power.com](http://www.mornsun-power.com). Packaging bag number: 58220113;
  - 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;
  - 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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