

15W, AC/DC DIN-Rail Power Supply



FEATURES

- Universal 85-264VAC (277VAC available) or 120-370VDC (390VDC available) input voltage
- Accepts AC or DC input (dual-use of same terminal)
- Operating ambient temperature range -40°C to +70°C
- High I/O isolation voltage up to 4000VAC
- Industrial-grade design
- OVC III (EN61558-1 standards)
- Low standby power consumption, high efficiency
- Low ripple & noise
- Output short circuit, over-current, over-voltage protection
- DIN rail TS35X7.5/ TS35X15 mountable
- Safety according to UL/IEC62368, IEC/EN61010, IEC60335, IEC/EN61558

LI15-20BxxPR2 is Mornsun's AC-DC series featuring a cost-effective, energy efficient 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/EN61000-4, CISPR32/EN55032, UL62368, EN62368, IEC62368, IEC/EN61010, IEC/EN61558 and IEC60335. 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 environment.

Selection Guide

Certification	Part No.	Output Power (W)	Nominal Output Voltage and Current (Vo/Io)	Output Voltage Adjustable Range ADJ (V)*	Efficiency at 230VAC (%) Typ.	Capacitive Load (µF) Max.
EN/UKCA/ BIS**	LI15-20B05PR2	12	5V/2.4A	4.5-5.5	80	2000
	LI15-20B12PR2	15	12V/1.25A	10.8-13.8	85	1500
	LI15-20B15PR2	15	15V/1A	13.5-18.0	85.5	1100
	LI15-20B24PR2	15.2	24V/0.63A	21.6-29.0	86	700
	LI15-20B48PR2	15.4	48V/0.32A	43.2-55.2	87	300

Note: *The actual adjustment range may extend outside the values stated, care should be exercised to ensure that the output voltage and power levels remain within the published maximum values.

**The BIS logo is printed on the side of products shipped to India only.

Input Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Input Voltage Range	AC input	85	--	264	VAC
	DC input	120	--	370	VDC
Input Frequency		47	--	63	Hz
Input Current	115VAC	--	--	0.5	A
	230VAC	--	--	0.25	
Inrush Current	115VAC	--	15	--	
	230VAC	--	25	--	
Leakage Current	240VAC	0.5mA			
Hot Plug		Unavailable			

Output Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit	
Output Voltage Accuracy	0% - 100% load	5V output	--	±2	--	%
		Other output	--	±1	--	
Line Regulation	Rated load	--	±0.5	--		
Load Regulation	230VAC	--	±1	--		

Output Ripple & Noise*	20MHz bandwidth (peak-to-peak value)	5V output	--	--	80	mV
		12V output	--	--	120	
		15V output	--	--	120	
		24V output	--	--	150	
		48V output	--	--	240	
Temperature Coefficient			--	±0.02	--	%/°C
Stand-by Power Consumption	230VAC input		--	--	0.3	W
Short Circuit Protection		Hiccup, continuous, self-recovery				
Over-current Protection	Constant voltage mode	≥110% Io, self-recovery				
	Constant current mode	Constant current limiting within 50% -100% rated output voltage, recovers automatically after fault condition is removed, it is not recommended to use when the output voltage <50%				
Over-voltage Protection	5V output	≤6.75V	Output voltage hiccup			
	12V output	≤16.2V				
	15V output	≤22.5V				
	24V output	≤36V				
	48V output	≤64.8V				
Minimum Load		0	--	--	--	%
Start-up Time		--	--	2	--	s
Hold-up Time	115VAC	--	12	--	--	ms
	230VAC	--	30	--	--	
Note: *The "Tip and barrel method" is used for ripple and noise test, using a 12" twisted pair-wire terminated with a 0.1uf ceramic capacitor & 47uf parallel capacitor, please refer to Enclosed Switching Power Supply Application Notes for specific information.						

General Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit	
Isolation	Input - output	Electric Strength Test for 1min., (leakage current <5mA)	4000	--	--	VAC
Operating Temperature		-40	--	+70	°C	
Storage Temperature		-40	--	+85		
Storage Humidity		--	--	95	%RH	
Operating Altitude		--	--	2000	m	
Switching Frequency		--	65	--	kHz	
Power Derating	-40°C to -30°C	5.0	--	--	% / °C	
	+50°C to +70°C	2.5	--	--		
	85VAC - 100VAC	1.34	--	--	%/VAC	
Safety Standard		IS13252 (Part1) safety approved & EN62368-1, BS EN 62368-1 (Report); Design refer to UL/IEC62368-1, IEC/EN61010-1, IEC/EN61558-1, IEC60335-1				
Safety Class		CLASS II				
MTBF	MIL-HDBK-217F@25°C	> 300,000 h				

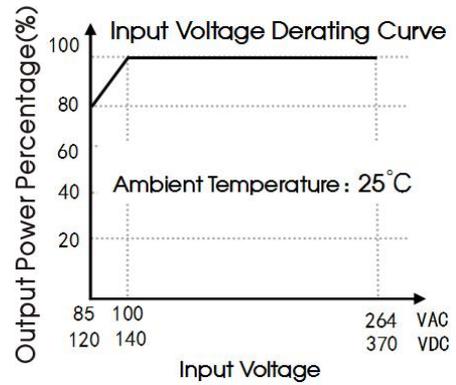
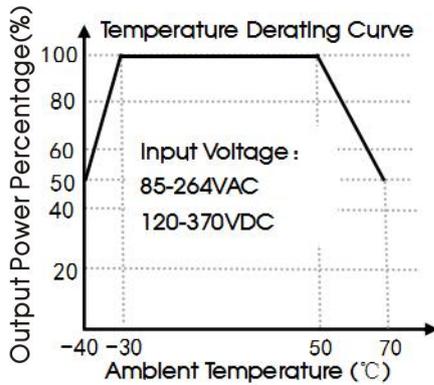
Mechanical Specifications

Case Material	Plastic, heat-resistant (UL94V-0)
Package Dimensions	90.00 x 58.00 x 17.50mm
Weight	60g (Typ.)
Cooling Method	Free air convection

Electromagnetic Compatibility (EMC)

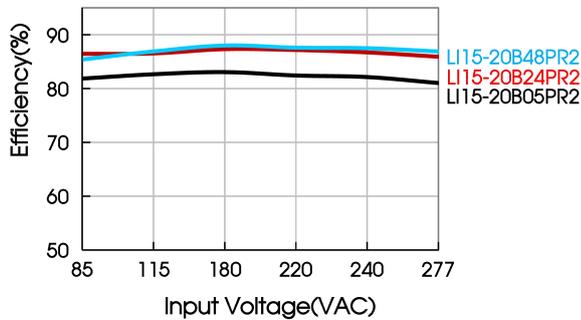
Emissions	CE	CISPR32/EN55032	CLASS B	
	RE	CISPR32/EN55032	CLASS B	
	Harmonic current	IEC/EN61000-3-2	CLASS A	
Immunity	ESD	IEC/EN61000-4-2	Contact $\pm 4KV$ / Air $\pm 8KV$	Perf. Criteria A
	RS	IEC/EN61000-4-3	10V/m	Perf. Criteria A
	EFT	IEC/EN61000-4-4	$\pm 2KV$	Perf. Criteria A
	Surge	IEC/EN61000-4-5	line to line $\pm 1KV$	Perf. Criteria A
	CS	IEC/EN61000-4-6	10Vr.m.s	Perf. Criteria A
	Voltage dips, short interruptions and voltage variations immunity	IEC/EN61000-4-11	100% dip 1 periods, 30% dip 25 periods, 100% interruptions 250 periods	Perf. Criteria B

Product Characteristic Curve

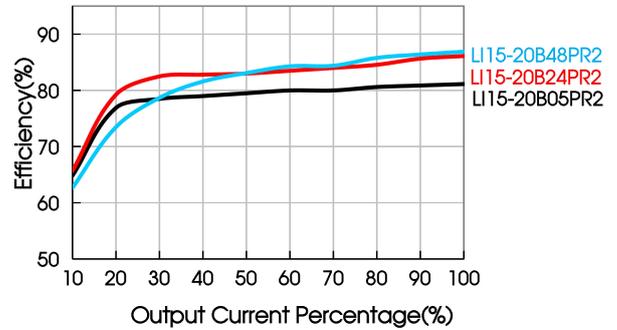


Note: ① With an AC input between 85-100VAC and a DC input between 120-140VDC, the output power must be derated as per temperature derating curves;
② This product is suitable for applications using natural air cooling; for applications in closed environment please consult Mornsun FAE.

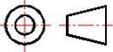
Efficiency Vs Input Voltage (Full Load)

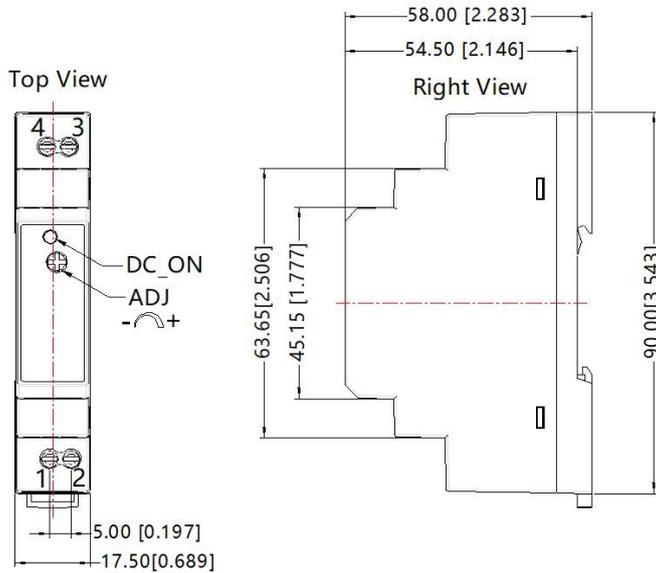


Efficiency Vs Output Load (Vin=230VAC)



Dimensions and Recommended Layout

THIRD ANGLE PROJECTION 



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

Note:
Unit: mm[inch]
ADJ: Adjustable resistance to change output voltage
Wire range: 24-12 AWG
Tightening torque: Max 0.4 N·m
Mounting rail: TS35, rail needs to connect safety ground
General tolerances: $\pm 1.00[\pm 0.039]$

- Note:
- For additional information on Product Packaging please refer to www.mornsun-power.com. Packaging bag number: 58220234;
 - Unless otherwise specified, parameters in this datasheet were measured under the conditions of $T_a=25^\circ\text{C}$, humidity<75% with nominal input voltage and rated output load;
 - All index testing methods in this datasheet are based on our company corporate standards;
 - We can provide product customization service, please contact our technicians directly for specific information;
 - Specifications are subject to change without prior notice.
 - Products are related to laws and regulations: see "Features" and "EMC";
 - 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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