100W, AC/DC DIN-Rail Power Supply

RoHS

UL62368-1 EN62368-1 IEC62368-1 BS EN 62368-1

FEATURES

- Universal 85-264VAC or 120-370VDC input voltage
- Accepts AC or DC input (dual-use of same terminal)
- Operating ambient temperature range: -40℃ to +70℃
- High I/O isolation test voltage up to 4000VAC (Input - output)
- Industrial product technology design
- Over-voltage class III (Designed to meet EN61558-1 standards)
- Low standby power consumption, high efficiency
- Low ripple & noise
- Output short circuit, over-current, over-voltage protection
- Withstand 300VAC surge input for 5s
- DIN rail TS35X7.5/ TS35X15 mountable

LI100-20BxxPR2 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 sepecifitions meet IEC/EN61000-4, CISPR32, EN55032, UL62368, IEC62368 and EN62368. 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.
UL/EN/IEC/ BIS/UKCA	LI100-20B12PR2	90	12V/7.5A	12.0 - 13.8	88	10000
	LI100-20B15PR2	97.5	15V/6.5A	13.5 - 18.0	89	6400
	LI100-20B24PR2	100.8	24V/4.2A	21.6 - 29.0	90	2500
	LI100-20B48PR2	100.8	48V/2.1A	43.2 - 55.2	90	1100

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.

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	--	--	3	A
	230VAC	--	--	1.6	
Inrush Current	115VAC	--	35	--	
	230VAC	--	70	--	
Leakage Current	240VAC/50Hz	0.5mA RMS Max.			
Hot Plug		Unavailable			

Output Specifications

Item	Operating Conditions		Min.	Typ.	Max.	Unit
Output Voltage Accuracy	0% - 100% load		--	±2	--	%
Line Regulation	Rated load		--	±0.5	--	
Load Regulation	230VAC		--	±1.5	--	
Output Ripple & Noise*	20MHz bandwidth (peak-to-peak value)	12V output	--	--	120	mV
		15V output	--	--	120	
		24V output	--	--	150	
		48V output	--	--	240	
Temperature Coefficient			--	±0.03	--	%/°C

Stand-by Power Consumption	230VAC input	12V/15V output	--	--	0.30	W
		24V output	--	--	0.35	
		48V output	--	--	0.40	
Short Circuit Protection			Hiccup, continuous, self-recovery			
Over-current Protection			110% - 200% Io, self-recovery			
Over-voltage Protection	12V output		≤20V			
	15V output		≤25V			
	24V output		≤35V			
	48V output		≤60V			
Minimum Load			0	--	--	%
Start-up Time			--	--	3	s
Hold-up Time	230VAC		--	30	--	ms
Note: *The "Tip and barrel method" is used for ripple and noise test, please refer to AC-DC Converter 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	℃
Storage Temperature				-40	--	+85	
Storage Humidity				--	--	95	%RH
Operating Altitude				--	--	2000	m
Switching Frequency				--	65	--	kHz
Power Derating		-40℃ to -30℃	12V/48V output	3.00	--	--	%/℃
			24V output	7.00	--	--	
			15V output	8.00	--	--	
		+45℃ to +70℃		2.00	--	--	
		85VAC - 115VAC		0.67	--	--	%/VAC
Safety Standard				UL/IEC62368-1, IS13252 (Part1) safety approved & EN62368-1, BS EN 62368-1 (Report); Design refer to EN61558-1			
Safety Class				CLASS II			
MTBF				MIL-HDBK-217F@25℃>300,000 h			

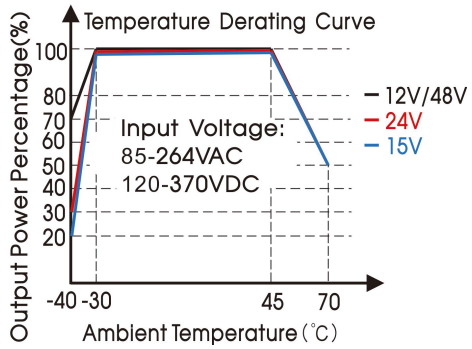
Mechanical Specifications

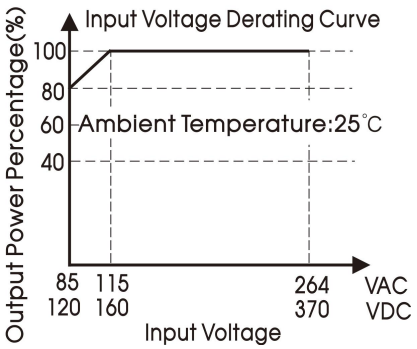
Case Material	Plastic, heat-resistant (UL94V-0)
Package Dimensions	70.00 x 92.66 x 58.00mm
Weight	235g (Typ.)
Cooling method	Free air convection

Electromagnetic Compatibility (EMC)

Emissions	CE	CISPR32/EN55032	CLASS B	
	RE	CISPR32/EN55032	CLASS B	
Immunity	ESD	IEC/EN61000-4-2	Contact ±6KV/Air ±8KV	Perf. Criteria A
	RS	IEC/EN61000-4-3	10V/m	Perf. Criteria A
	EFT	IEC/EN61000-4-4	±4KV	Perf. Criteria A
	Surge	IEC/EN61000-4-5	line to line ±2KV	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 A

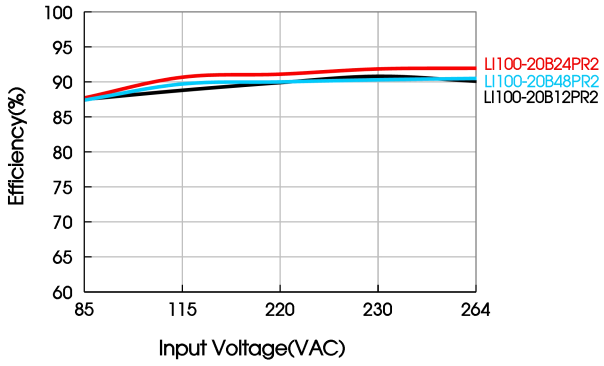
Product Characteristic Curve



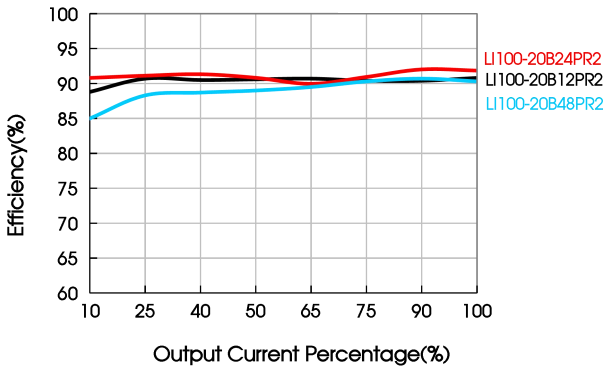


Note: ① With an AC input between 85-115VAC and a DC input between 120-160VDC, the output power must be derated as per temperature derating curves;
② This product is suitable for applications using natural air cooling; for applications in closed environment please consult factory or one of our FAE.

Efficiency Vs Input Voltage (Full Load)

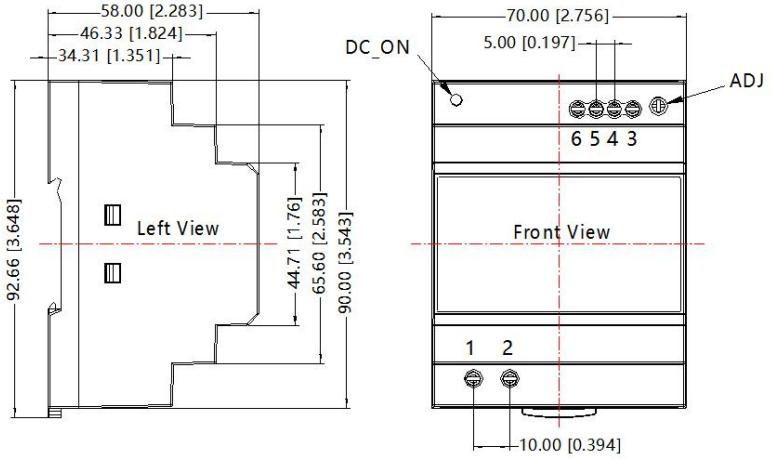


Efficiency Vs Output Load (Vin=230VAC)



Dimensions and Recommended Layout

THIRD ANGLE PROJECTION



Pin-Out	
Pin	LI100-20B
1	AC(L)
2	AC(N)
3	+Vo
4	+Vo
5	-Vo
6	-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
General tolerances: ±1.00[±0.039]

Note:

1. For additional information on Product Packaging please refer to www.mornsun-power.com. Packaging bag number: 58220079;
2. Unless otherwise specified, parameters in this datasheet were measured under the conditions of Ta=25℃, humidity<75% with nominal input voltage and rated output load;
3. All index testing methods in this datasheet are based on our company corporate standards;
4. We can provide product customization service, please contact our technicians directly for specific information;
5. Specifications are subject to change without prior notice;
6. Products are related to laws and regulations: see "Features" and "EMC";
7. 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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