Report EN62368-1

RoHS

FEATURES

- Universal 85-264VAC (277VAC available) or 120-370VDC (390VDC available) input voltage
- Withstand 300VAC surge input for 5s
- Operating ambient temperature range: -30℃ to +70℃ (can be start-up at -40℃)
- High I/O isolation test voltage up to 4000VAC (Input - output)
- Over-voltage class III (Designed to meet EN61558 standards)
- Low standby power consumption, low ripple & noise
- High efficiency, high reliability
- Output short circuit, over-current, over-voltage over-temperature protection
- DIN rail TS35X7.5/ TS35X15 mountable
- Ultra-thin design: width 105mm (6SU)

LI150-20BxxPR2 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, UL/EN/IEC62368, IEC/EN60335, IEC61558, UL61010. 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/BIS	LI150-20B12PR2	135.6	12V/11.3A	10.8 - 13.8	89	10000
	LI150-20B15PR2	142.5	15V/9.5A	13.5 - 18.0	89.5	8000
	LI150-20B24PR2	150.0	24V/6.25A	21.6 - 29.0	91.5	5000
	LI150-20B48PR2	153.6	48V/3.2A	43.2 - 52.8	91	2400

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	--	--	1.8	
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	12V output	--	±2	--	%
		Other output	--	±1	--	
Line Regulation	Rated load		--	±1	--	
Load Regulation	230VAC		--	±1	--	

Output Ripple & Noise*	20MHz bandwidth (peak-to-peak value)	12V output	--	--	100	mV
		15V output	--	--	120	
		24V output	--	--	150	
		48V output	--	--	150	
Temperature Coefficient			--	±0.03	--	%/℃
Stand-by Power Consumption	230VAC Input	12V/15V/24V output	--	--	0.30	W
		48V output	--	--	0.40	
Short Circuit Protection			Hiccup, continuous, self-recovery			
Over-current Protection	⩾105% Io, self-recovery		Hiccup mode or constant current limiting when output voltage <50%, recovers automatically after fault condition is removed			
			Constant current limiting within 50% -100% rated output voltage, recovers automatically after fault condition is removed			
Over-voltage Protection	12V output		⩽16V	Output voltage hiccup		
	15V output		⩽23V			
	24V output		⩽35V			
	48V output		⩽60V	Output voltage clamp		
Over-temperature Protection	Over-temperature protection activation		--	--	85	℃
	Over-temperature protection deactivation		50	--	--	
Minimum Load			0	--	--	%
Start-up Delay Time	Room temperature		--	500	800	ms
Hold-up Time	115VAC		--	12	--	
	230VAC		--	30	--	

Note: *The "twisted pair-wire 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				-30	--	+70	℃
Storage Temperature				-40	--	+85	
Storage Humidity				--	--	95	%RH
Operating Altitude				--	--	2000	m
Switching Frequency				--	65	--	kHz
Power Derating		+45℃ to +70℃		2.0	--	--	%/℃
		85VAC - 100VAC	12V/15V	1.1	--	--	%/VAC
			24V/48V	0.784	--	--	
		100VAC - 120VAC	12V	--	--	122.4	W
			15V	--	--	128.3	
			24V	--	--	127.4	
			48V	--	--	130.6	
Safety Standard				EN62368-1, IS13252 (Part1) safety approved; Design refer to UL/IEC62368-1, EN/IEC60335-1, IEC61558-1, UL61010-1			
Safety Class				CLASS II			
MTBF				MIL-HDBK-217F@25℃>300,000 h			

Mechanical Specifications

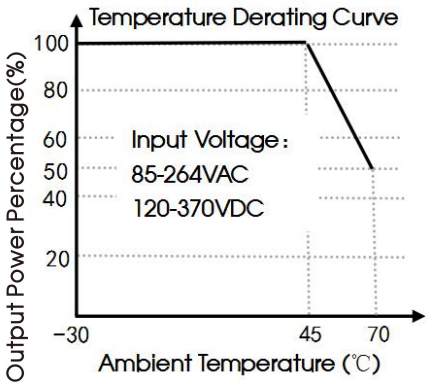
Case Material	Plastic, heat-resistant (UL94V-0)
Package Dimensions	105.00 x 90.00 x 55.40mm
Weight	330g (Typ.)
Cooling Method	Free air convection

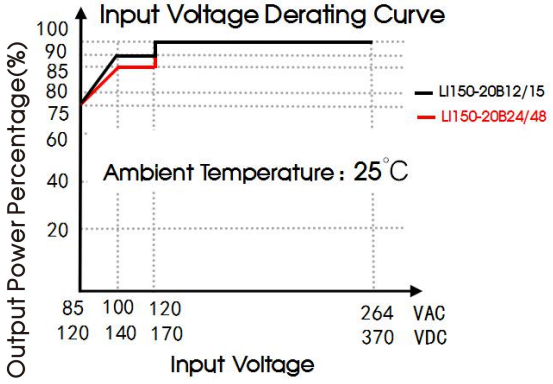
Electromagnetic Compatibility (EMC)

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 ±4KV/Air ±8KV	Perf. Criteria A
	RS	IEC/EN61000-4-3	10V/m	Perf. Criteria A
	EFT	IEC/EN61000-4-4	±4KV	Perf. Criteria B
	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 B

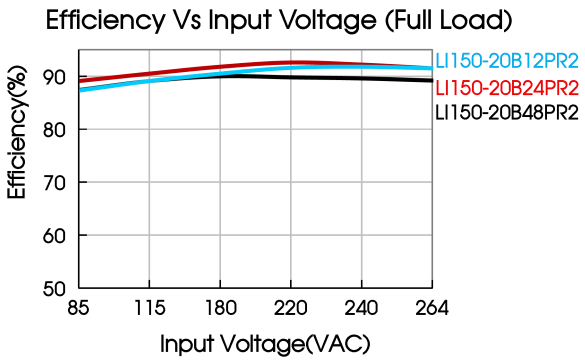
Note: *Test harmonic current at 70% load.

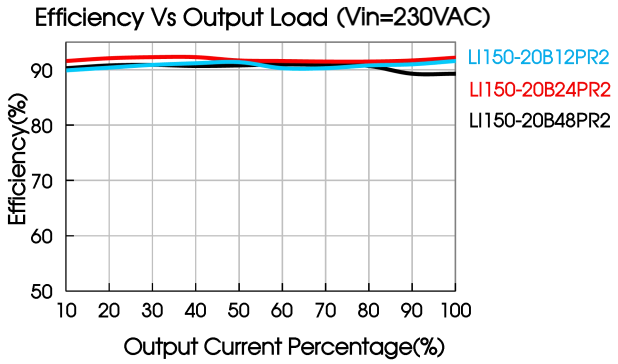
Product Characteristic Curve





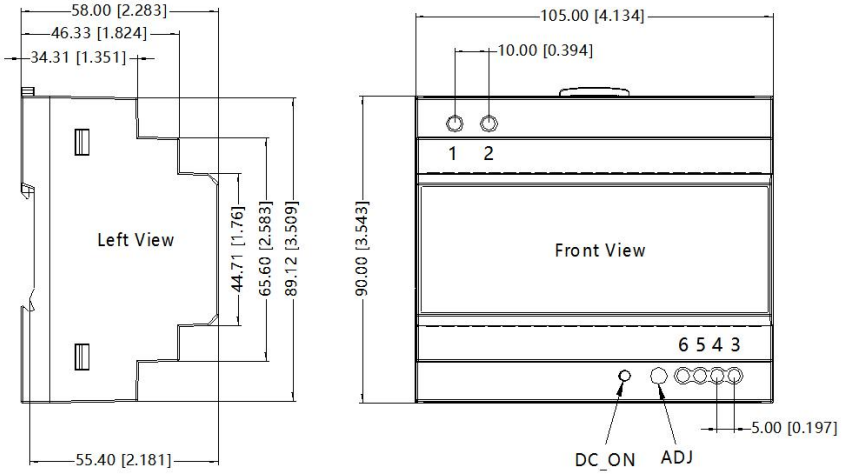
Note: ① With an AC input between 85-120VAC and a DC input between 120-170VDC, the output power must be derated as per temperature derating curves;
② This product is suitable for applications using natural air cooling; for applications in closed environment please consult factory or one of our FAE.





Dimensions and Recommended Layout

THIRD ANGLE PROJECTION



Pin-Out	
Pin	Mark
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: 58220215;
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.