

FEATURES

- Universal 85 - 264V AC or 120 - 373VDC Input voltage
- Accepts AC or DC input (dual-use of same terminal)
- Operating temperature range: -30°C to +70°C
- Built-in active PFC function
- High I/O isolation test voltage up to 4000VAC
- Low ripple & noise
- Output short circuit, over-current, over-voltage, over-temperature protection (Built-in constant current limiting circuit)
- Remote ON-OFF control
- Safety according to IEC/EN/UL62368, EN60335, GB4943
- Over-voltage class III (designed to meet EN61558)
- Withstand 300VAC surge input for 5s

LMF150-20Bxx series is one of Mornsun's enclosed AC-DC switching power supply. It features universal AC input and at the same time accepts DC input voltage, cost-effective, built-in active PFC function, high efficiency and high reliability. These converters offer excellent EMC performance and meet IEC/EN61000-4, CISPR32/EN55032, IEC62368, UL62368, EN62368, EN60335, GB4943 standards and they are widely used in areas of industrial, LED, street light control, electricity, security, telecommunications, smart home etc.

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)
CE/CCC	LMF150-20B05	150	5V/30A	4.75-5.5	87	5000
	LMF150-20B12	150	12V/12.5A	11.4-13.2	88	5000
	LMF150-20B15	150	15V/10A	14.3-16.5	88.5	5000
	LMF150-20B24	151.2	24V/6.3A	22.8-26.4	89	5000
	LMF150-20B48	153.6	48V/3.2A	45.6-52.8	90	3000

Note: *Use suffix "C" for terminal with protective cover and suffix "Q" for conformal coating.

Input Specifications





Item	Operating Conditions		Min.	Typ.	Max.	Unit
Input Voltage Range	AC Input		85	--	264	VAC
	DC Input		120	--	373	VDC
Input Voltage Frequency			47	--	63	Hz
Input Current	85VAC		--	--	2.5	A
	115VAC		--	--	2.0	
	230VAC		--	--	1.0	
Inrush Current	115VAC	Cold Start	--	--	30	
	230VAC		--	--	45	
Power Factor	115VAC	At full Load	--	0.99	--	--
	230VAC		--	0.93	--	
Leakage Current	240VAC		<2mA			
Hot Plug			Unavailable			

Output Specifications

Item	Operating Conditions		Min.	Typ.	Max.	Unit
Output Voltage Accuracy	Full Load Range	5V/12V/15V	--	±2	--	%
		24V/48V	--	±1	--	
Line Regulation	Rated Load		--	±0.5	--	
Load Regulation	0% - 100% load	5V	--	±1	--	
		12V/15V/24V/48V	--	±0.5	--	
Output Ripple & Noise*	20MHz bandwidth (peak-to-peak value)	5V/12V/15V	--	100	--	mV
		24V	--	150	--	
		48V	--	250	--	
Temperature Coefficient			--	±0.05	--	%/°C
Minimum Load			0	--	--	%
Hold-up Time	230VAC		16	--	--	ms
Short Circuit Protection	Recovery time <3s after the short circuit disappear.		Constant current, continuous, self-recovery			
Over-current Protection			110%-150% Io, constant current mode, self-recovery			
Over-voltage Protection	5V		≤ 7.5V(Output voltage turn off, re-power on for recovery)			
	12V		≤ 16.8V (Output voltage turn off, re-power on for recovery)			
	15V		≤ 20.25V (Output voltage turn off, re-power on for recovery)			
	24V		≤ 32.6V(Output voltage turn off, re-power on for recovery)			
	48V		≤ 60V (Output voltage turn off, re-power on for recovery)			
Over-temperature Protection*	Over-temperature Protection Activation		--	--	85	°C
	Over-temperature Protection Deactivation		50	--	--	
Remote Control	0~0.8VDC Power ON		0	--	0.8	VDC
	4~10VDC Power OFF		4	--	10	

Note: *The "Tip and barrel method" is used for ripple and noise test, please refer to AC-DC Converter Application Notes for specific information.
*Over-temperature Protection needs to be tested under rated full load conditions.

General Specifications

Item		Operating Conditions		Min.	Typ.	Max.	Unit
Isolation Test	Input - 	Electric Strength Test for 1min., leakage current <10mA		2000	--	--	VAC
	Input-output	Electric Strength Test for 1min., leakage current <10mA		4000	--	--	
	output - 	Electric Strength Test for 1min., leakage current <5mA		500	--	--	
Insulation Resistance	Input - 	500VDC, 25±5℃, Humidity < 70%RH, non-condensing		100	--	--	MΩ
	Input - output			100	--	--	
	output - 			100	--	--	
Operating Temperature				-30	--	+70	℃
Storage Temperature				-40	--	+85	
Storage Humidity		Non-condensing		--	--	95	%RH
Switching Frequency				--	--	--	kHz
Power Derating		5V output	+40℃ to +60℃	2	--	--	% /℃
		Other output	+50℃ to +70℃	2	--	--	
		all	-30℃ to -20℃	4	--	--	
		85VAC-100VAC		1.3	--	--	%/VAC
Safety Standard				Meet IEC/EN/UL62368/EN60335/GB4943			
Safety Class				CLASS I			
MTBF		MIL-HDBK-217F@25℃		> 300,000 h			

Mechanical Specifications

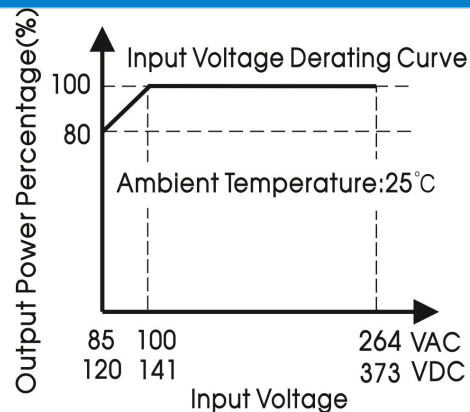
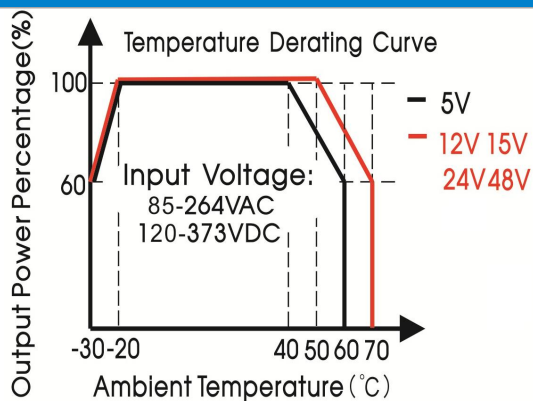
Case Material	Metal (AL1100, SGCC)
Dimensions	179.00 × 99.00 × 30.00mm
Weight	550g (Typ.)
Cooling Method	Free air convection

Electromagnetic Compatibility (EMC)

Emissions(EMI)	CE	CISPR32/EN55032	CLASS B	
	RE	CISPR32/EN55032	CLASS B	
	Harmonic Current	IEC/EN61000-3-2	CLASS A	
	Voltage Flicker	IEC/EN61000-3-3		
Immunity(EMS)	ESD	IEC/EN 61000-4-2	Contact ±6KV /Air ±8KV	Perf. Criteria A
	RS	IEC/EN 61000-4-3	3V/m	perf. Criteria B
	EFT	IEC/EN 61000-4-4	±2KV	perf. Criteria A
	Surge	IEC/EN 61000-4-5	±1KV/±2KV	perf. Criteria A
	CS	IEC/EN61000-4-6	10 Vr.m.s	perf. Criteria A
	DIP	IEC/EN61000-4-11	0%, 70%	perf. Criteria B

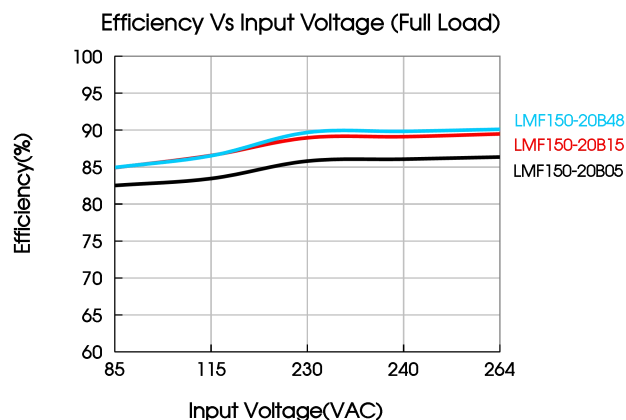
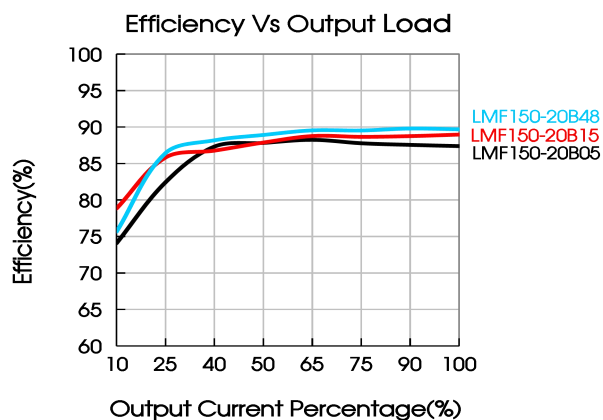
Note: One magnetic bead(nickel-zinc ferrite)should be coupled with the output load line during CE/RE testing.

Product Characteristic Curve

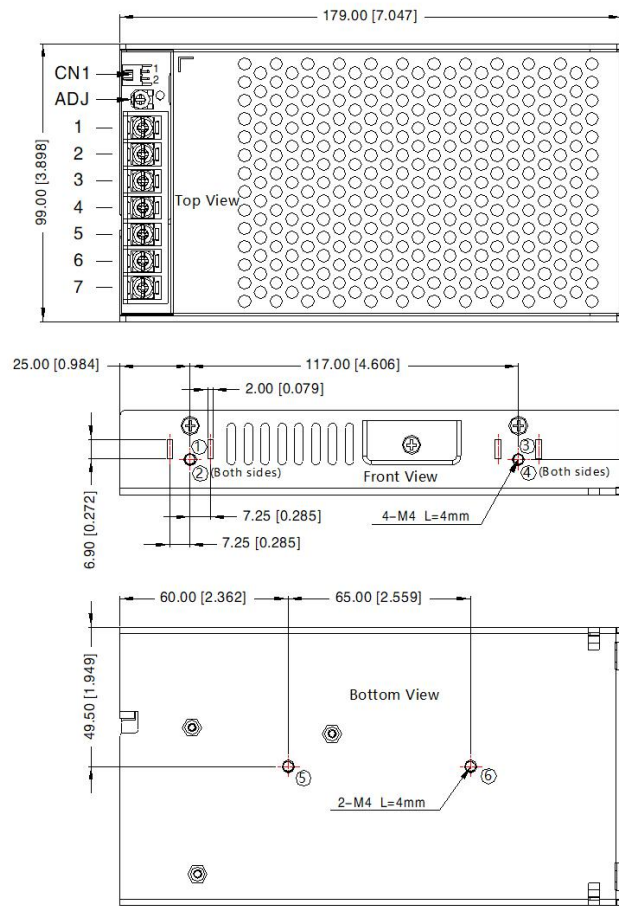


Note: ①With an input voltage between 85-100VAC and a DC input between 120-141VDC the output power must be derated as per the temperature derating curves;

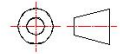
②This product is suitable for applications using natural air cooling; for applications in closed environment please consult Mornsun FAE.



Dimensions and Recommended Layout



THIRD ANGLE PROJECTION



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

CN1:KANGDAO TJC3-NAWD-2P or the same spec.			
Pin	Function	Connector	Terminal
1	RC+	KANGDAO XH25001-2Y or the same spec.	KANGDAO XH2.54-TE or the same spec.
2	RC-		

Position	Screw Spec.	L(max)	Torque(max)
① - ⑥	M4	4mm	0.9N·m

Note:

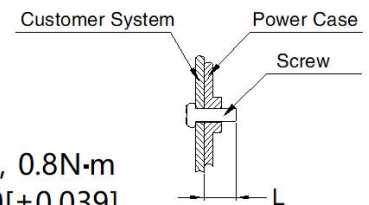
Unit: mm[inch]

Wire range: 22-12AWG

Tightening torque: M3.5 , 0.8N·m

General tolerances: $\pm 1.00[\pm 0.039]$

① - ⑥ any position must be connected to PE



Note:

- For additional information on Product Packaging please refer to www.mornsun-power.com. Packaging bag number: 58220068;
- Unless otherwise specified, parameters in this datasheet were measured under the conditions of $T_a=25^\circ\text{C}$, humidity<75%RH with nominal input voltage and rated output load;
- 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;
- 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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