

AC/DC 100W Enclosed Switching Power Supply

LMF100-20Bxx, LMF100-20Bxx-C, LMF100-20Bxx-Q Series

MORNSUN®



FEATURES

- Universal 85 - 264V AC or 120 - 373VDC Input voltage
- Accepts AC or DC input (dual-use of same terminal)
- Operating temperature range: -30℃ to +70℃
- 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 (CE/CCC/UL pending)
- Over-voltage class III (designed to meet EN61558)
- Withstand 300VAC surge input for 5s
- Emissions meets CISPR32/EN55032 CLASS B without extra components

LMF100-20Bxx 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, IEC/UL/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/UL (Pending)	LMF100-20B05	100	5V/20A	4.75-5.5	86	5000
	LMF100-20B12	102	12V/8.5A	11.4-13.2	86	5000
	LMF100-20B15	100.5	15V/6.7A	14.3-16.5	87	5000
	LMF100-20B24	100.8	24V/4.2A	22.8-26.4	87	4200
	LMF100-20B48	100.8	48V/2.1A	45.6-52.8	88	2200

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		--	--	1.7	A
	115VAC		--	--	1.3	
	230VAC		--	--	0.7	
Inrush Current	115VAC	Cold start	--	25	--	
	230VAC		--	45	--	
Power Factor	115VAC	At full load	0.97	0.98	--	--
	230VAC		0.92	0.93	--	
Leakage Current	240VAC		<2mA			
Hot Plug			Unavailable			

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


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
Stand-by Power Consumption	230VAC		--	--	8.0	W
Short Circuit Protection	Recovery time <3s after the short circuit disappear.		Constant current, continuous, self-recovery			
Over-current Protection			105%-150% Io, 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		≤32.4V (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: 1.*The "Tip and barrel method" is used for ripple and noise test, (47uF electrolytic capacitor and 104 ceramic capacitor) please refer to AC-DC Converter Application Notes for specific information.

2.*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 - 	Environment Temperature: 25±5°C,	100	--	--	MΩ
	Input - output	Relative Humidity: < 95%RH, non-condensing	100	--	--	
	output - 	Testing Voltage: 500VDC	100	--	--	
Operating Temperature			-30	--	+70	°C
Storage Temperature			-40	--	+85	
Storage Humidity	Non-condensing		10	--	95	%RH
Operating Humidity	Non-condensing		20	--	90	
Switching Frequency			--	--	--	kHz
Power Derating	Operating Temperature Derating	All series +50°C to +70°C	2	--	--	% / °C
		All series -30°C to +50°C	0	--	--	
	Input Voltage Derating	85VAC-100VAC	1.33	--	--	%/VAC

	100VAC-264VAC	0	--	--	
Safety Standard		Meet IEC/EN/UL62368/EN60335/GB4943			
Safety Class		CLASS I			
MTBF	MIL-HDBK-217F@25°C	>300,000 h			

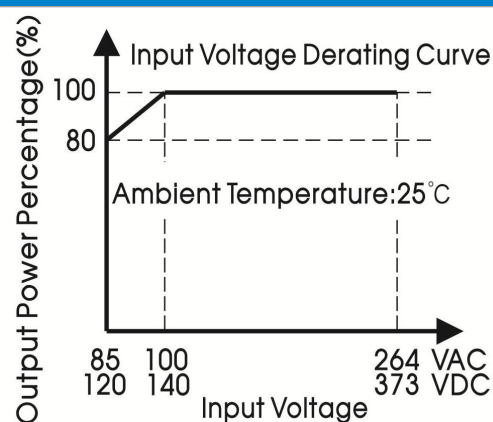
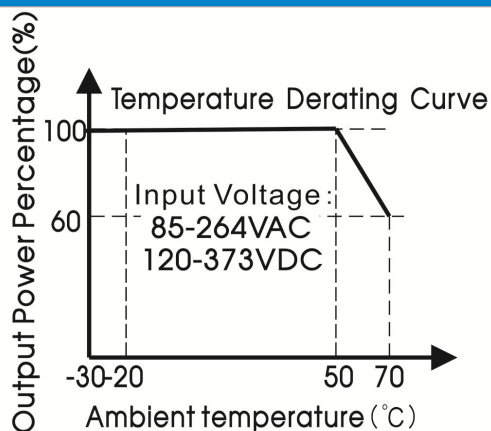
Mechanical Specifications

Case Material	Metal (AL1100, SGCC)
Dimensions	179.00 × 99.00 × 30.00mm
Weight	530g (Typ.)
Cooling Method	Free air convection

Electromagnetic Compatibility (EMC)

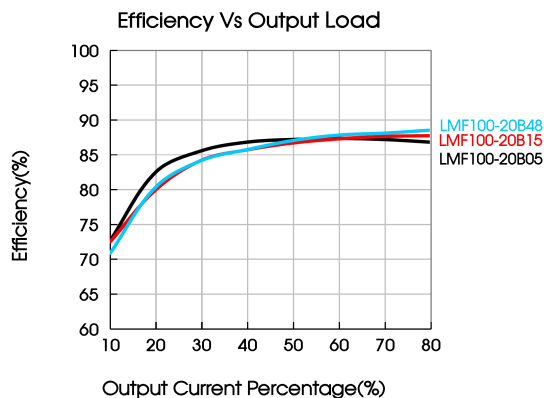
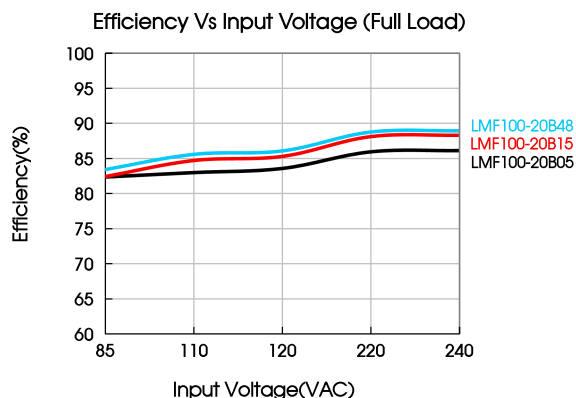
Emissions	CE	CISPR32/EN55032	CLASS B	
	RE	CISPR32/EN55032	CLASS B	
	Harmonic Current	IEC/EN61000-3-2		
	Voltage Flicker	IEC/EN61000-3-3		
Immunity	ESD	IEC/EN 61000-4-2	Contact ±6KV /Air ±8KV	Perf. Criteria A
	RS	IEC/EN 61000-4-3	3V/m	perf. Criteria B
	EFT	IEC/EN 61000-4-4	±2KV	perf. Criteria A
	Surge	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

Product Characteristic Curve



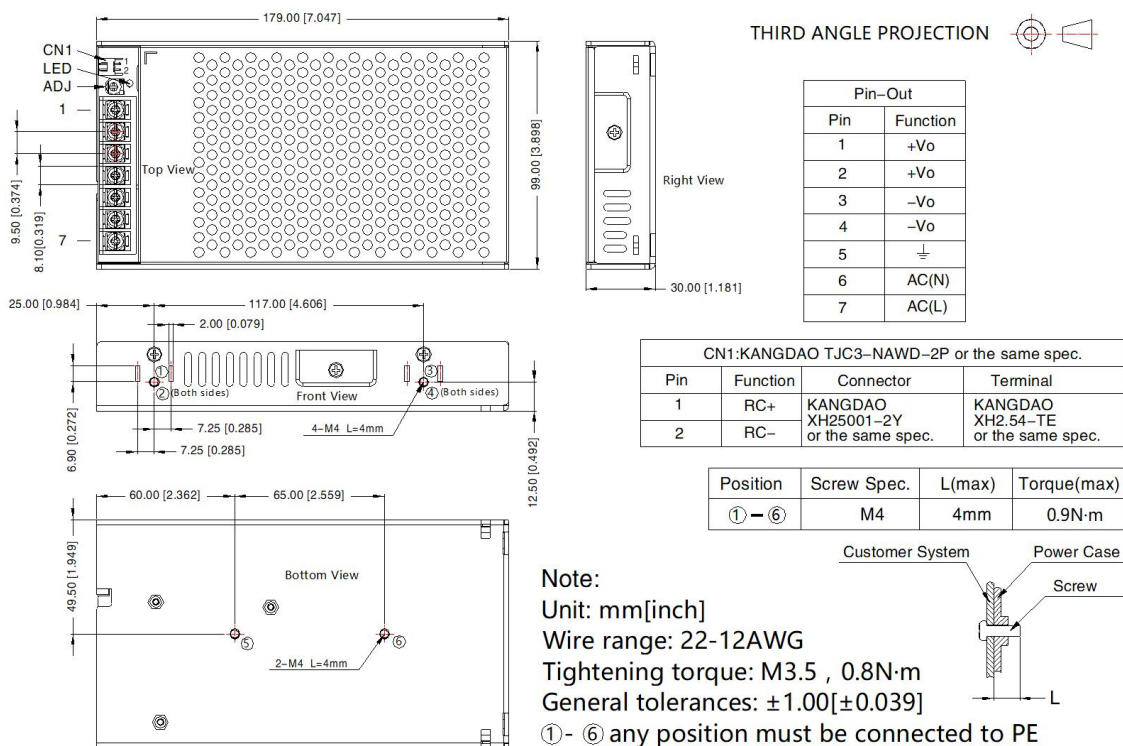
Note: ① With an input voltage between 85-100VAC and a DC input between 120-140VDC the output power must be derated as per the temperature derating curves;

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

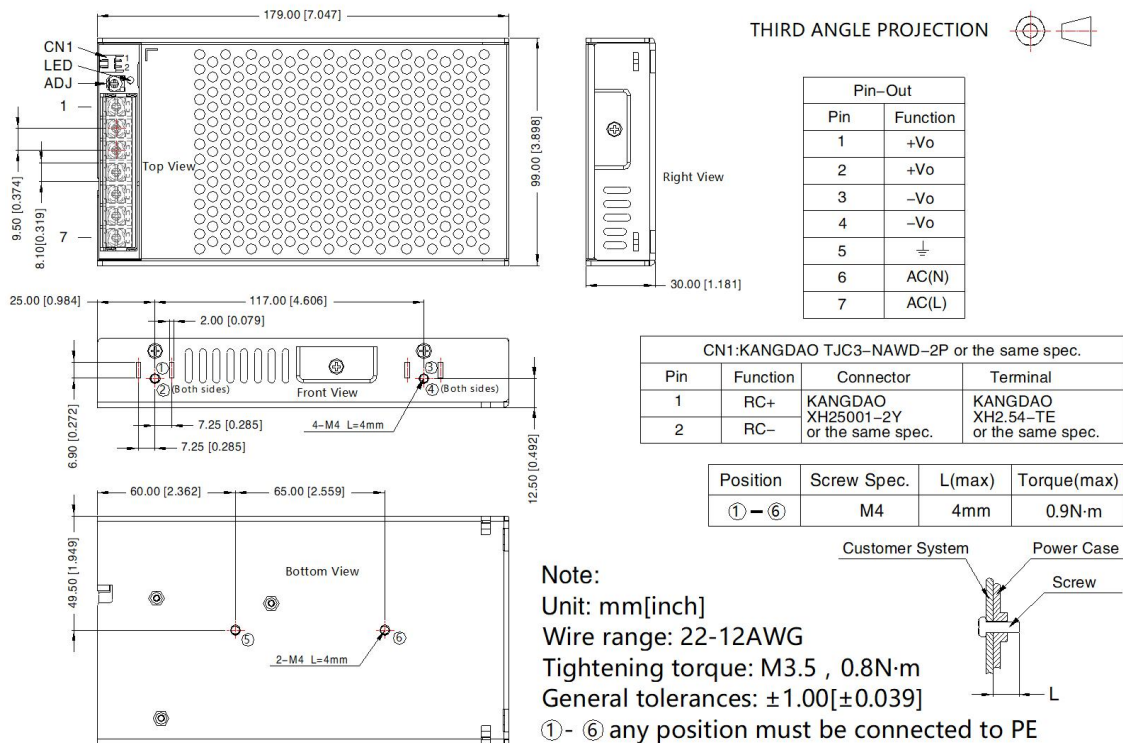


Dimensions and Recommended Layout

LMF100-20Bxx, LMF100-20Bxx-Q Series



LMF100-20Bxx-C Series



Note:

1. For additional information on Product Packaging please refer to www.mornsun-power.com. Packaging bag number: 58220068;
2. 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;
3. All index testing methods in this datasheet are based on our company corporate standards;
4. 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;
5. We can provide product customization service, please contact our technicians directly for specific information;
6. Products are related to laws and regulations: see "Features" and "EMC";
7. The out case needs to be connected to PE(\perp) of system when the terminal equipment in operating;
8. Our products shall be classified according to ISO14001 and related environmental laws and regulations, and shall be handled by qualified units;
9. 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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