



FEATURES

- Universal 85 - 264VAC or 120 - 373VDC Input voltage
- Accepts AC or DC input (dual-use of same terminal)
- Operating ambient temperature range: -30℃ to +70℃
- Low standby power consumption, high efficiency
- High I/O isolation test voltage up to 4000VAC
- Low ripple & noise
- Output short circuit, over-current, over-voltage protection
- Safety according to IEC/EN/UL62368, EN60335, GB4943
- Withstand 300VAC surge input for 5s
- Over-voltage class III (designed to meet EN61558)
- Operating up to 5000m altitude

LM100-20Bxx 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, low no load power consumption, 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	LM100-20B05	90	5V/18A	4.5-5.5	86	10000
	LM100-20B12	102	12V/8.5A	10.2-13.8	87.5	6800
	LM100-20B15	105	15V/7.0A	13.5-18	87.5	3300
	LM100-20B24	108	24V/4.5A	21.6-28.8	90	2200
	LM100-20B36	100.8	36V/2.8A	32.4-39.6	90	1000
	LM100-20B48	110.4	48V/2.3A	43.2-52.8	91	470

Note: *Use suffix "Q" for conformal coating, which are CE/CCC pending.

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	115VAC		--	--	3	A
	230VAC		--	--	1.5	
Inrush Current	115VAC	Cold start	--	35	--	
	230VAC		--	65	--	
Leakage Current	240VAC		<0.75mA			
Hot Plug			Unavailable			

Output Specifications

Item	Operating Conditions		Min.	Typ.	Max.	Unit
Output Voltage Accuracy	Full load range	5V	--	±2	--	%
		12V/15V/24V/36V/48V	--	±1	--	
Line Regulation	Rated load		--	±0.5	--	
Load Regulation	0% - 100% load	5V	--	±1	--	
		12V/15V/24V/36V/48V	--	±0.5	--	





AC/DC 100W Enclosed Switching Power Supply

LM100-20Bxx, LM100-20Bxx-Q Series

MORNSUN®

Output Ripple & Noise*	20MHz bandwidth (peak-to-peak value)	5V	--	100	--	mV
		12V/15V	--	120	--	
		24V	--	150	--	
		36V/48V	--	200	--	
Temperature Coefficient			--	±0.03	--	%/℃
Minimum Load			0	--	--	%
Stand-by Power Consumption	230VAC	5V/12V/15V/24V	--	--	0.3	W
		36V/48V	--	--	0.5	
Hold-up Time	115VAC		5	10	--	ms
	230VAC		45	55	--	
Short Circuit Protection	Recovery time <5s after the short circuit disappear.		Hiccup, continuous, self-recovery			
Over-current Protection			110%-160% Io, self-recovery			
Over-voltage Protection	5V		≤7.5VDC (Output voltage turn off re-power on for recovery)			
	12V		≤19.2VDC (Output voltage clamp)			
	15V		≤24VDC (Output voltage clamp)			
	24V		≤38.4VDC (Output voltage clamp)			
	36V		≤57.6VDC (Output voltage clamp)			
	48V		≤60VDC (Output voltage turn off re-power on for recovery)			
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 Test	Input - 	Electric strength test for 1min., leakage current <10mA		2000	--	--	VAC
	Input - Output			4000	--	--	
	Output - 			1250	--	--	
Insulation Resistance	Input - 	At 500VDC		100	--	--	MΩ
	Input - Output			100	--	--	
	Output - 			100	--	--	
Operating Temperature				-30	--	+70	°C
Storage Temperature				-40	--	+85	
Storage Humidity		Non-condensing		10	--	95	%RH
Switching Frequency				--	65	--	kHz
Power Derating	Operating temperature derating	5V output	+45°C to +70°C	1.6	--	--	% / °C
		Other output	+50°C to +70°C	2.0	--	--	
	Input voltage derating	85VAC-115VAC		0.67	--	--	%/VAC
Safety Standard		Meet IEC/EN/UL62368/EN60335/GB4943					
Safety Class		CLASS I					
MTBF		MIL-HDBK-217F@25°C		>30,000 h			

Mechanical Specifications

Case Material	Metal (AL1100, SGCC)		
Dimensions	129.00 x 97.00 x 30.00mm		
Weight	350g (Typ.)	5V	
	330g (Typ.)	12V/15V/24V/36V/48V	
Cooling Method	Free air convection		

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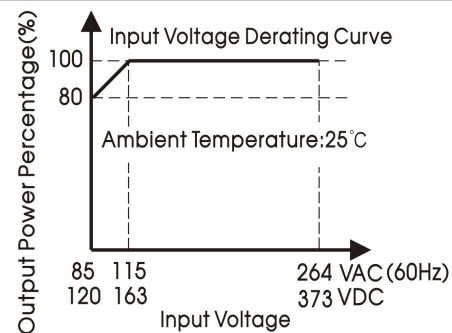
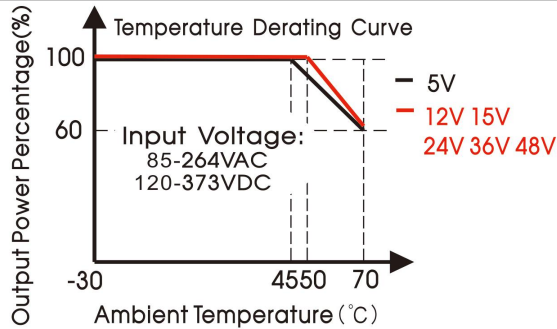
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Electromagnetic Compatibility (EMC)

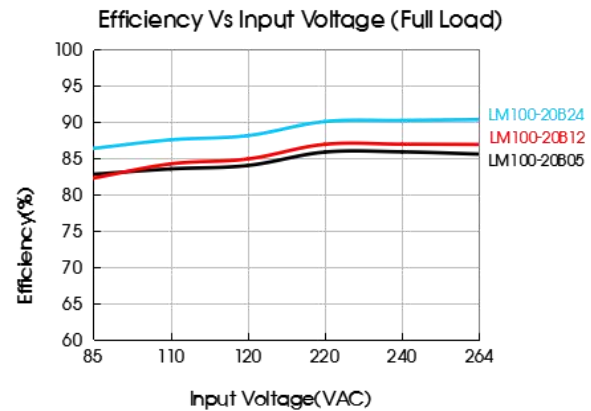
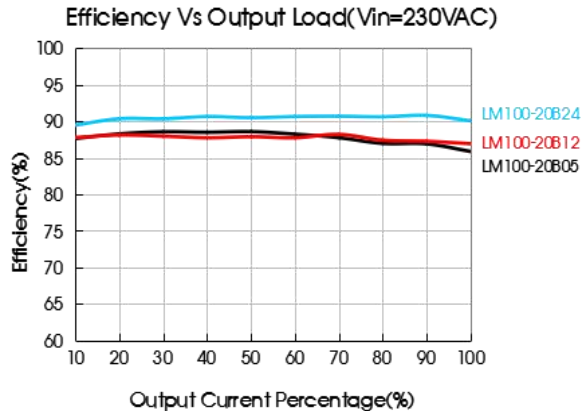
Emissions	CE	CISPR32/EN55032 CLASS B	
	RE	CISPR32/EN55032 CLASS B	
	Harmonic current	IEC/EN61000-3-2 CLASS A	
Immunity	ESD	IEC/EN 61000-4-2 Contact $\pm 6\text{KV}$ /Air $\pm 8\text{KV}$	Perf. Criteria A
	RS	IEC/EN 61000-4-3 10V/m	perf. Criteria A
	EFT	IEC/EN 61000-4-4 $\pm 2\text{KV}$	perf. Criteria A
	Surge	IEC/EN 61000-4-5 line to line $\pm 2\text{KV}$ /line to ground $\pm 4\text{KV}$	perf. Criteria A
	CS	IEC/EN61000-4-6 10 Vr.m.s	perf. Criteria A
	Voltage dips, short interruptions and voltage variations	IEC/EN61000-4-11 0%, 70%	perf. Criteria B

Product Characteristic Curve

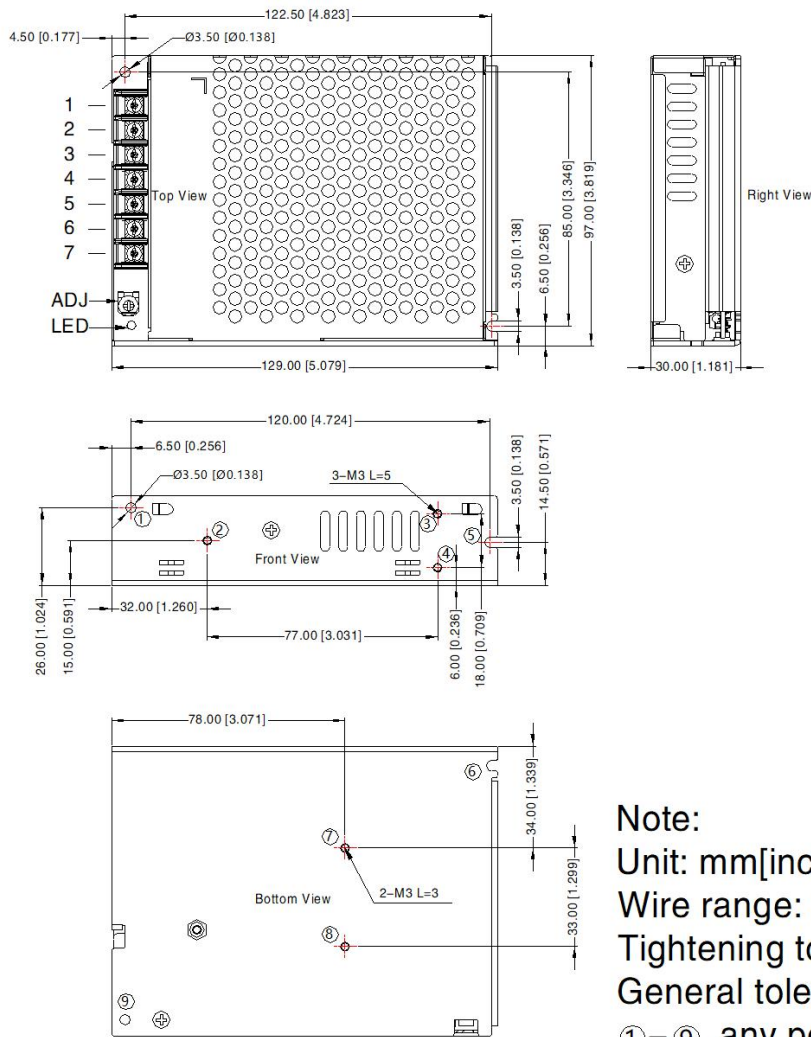


Note: ①With an input voltage between 85-115VAC and a DC input between 120-163VDC the output power must be derated as per the temperature derating curves;

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	AC(L)
2	AC(N)
3	⏏
4	-Vo
5	-Vo
6	+Vo
7	+Vo

Note:

Unit: mm[inch]

Wire range: 22-14AWG

Tightening torque: M3, 0.5N·m

General tolerances: ± 1.00 [± 0.039]

①-⑨ any position must be connected to PE

Note:

- For additional information on Product Packaging please refer to www.mornsun-power.com. Packaging bag number: 58220065;
- 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;
- The ambient temperature derating of $5^{\circ}\text{C}/1000\text{m}$ is needed for operating altitude greater than 2000m;
- 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 final equipment. All EMC tests should be confirmed with the final equipment. Please consult our FAE for EMC test operation instructions.

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