AC/DC 200W Enclosed Switching Power Supply

LM200-26B24

MORNSUN®

RoHS

FEATURES

- Input voltage range: 320 - 528VAC or 450 - 750VDC
- Operating ambient temperature range: -40℃ to +85℃
- High efficiency, high reliability
- 1U height shape
- LED indicate the power on
- Operating altitude up to 5000m
- Output short circuit, over-current, over-voltage protection
- Safety according to UL/IEC/EN62368, GB4943
- 3 years warranty

LM200-26B24 is the ultra-small Mornsun second-generation new industrial standard enclosed power supply, which has innovated the industrial power supply standard from the aspect of dimension, performance, technology and structure. It features universal AC input and at the same time accepts DC input voltage, cost-effective, low no load power consumption, high efficiency, high reliability and double or reinforced isolation. The converter offer excellent EMC performance and meet UL/IEC/EN62368, GB4943 standards and it is widely used in areas of industrial, LED, street light control, security, telecommunications, smart home, etc.

Selection Guide

Part No.	Output Power (W)	Nominal Output Voltage and Current (Vo/Io)	Output Voltage Adjustable Range (V)	Efficiency at 380VAC (%) Typ.	Capacitive Load (uF) Max.
LM200-26B24	199.2	24V/8.3A	22.8-27.6	88	1500

Note:
1. The product picture is for reference only. For details, please refer to the actual product.
2. Under any conditions, the total power of the product should not exceed the rated power. When the output voltage is increased, the total output power cannot exceed the rated output power, when the output voltage is decreased, the output current cannot exceed the rated output current.

Input Specifications

Item	Operating Conditions		Min.	Typ.	Max.	Unit
Input Voltage Range	Rated input (Certified voltage)		380	--	480	VAC
	AC input		320	--	528	
	DC input		450	--	750	VDC
Input Frequency			47	--	63	Hz
Input Current	380VAC		--	--	2	A
	480VAC		--	--	1.5	
Inrush Current	380VAC	Cold-start	--	60	100	
Start-up Delay Time			--	--	3	s
Input fuse	Built in fuse		--	4	--	A
Hot Plug			Unavailable			

Output Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Output Voltage Accuracy	Full load range	--	±1	--	%
Line Regulation	Rated load	--	±0.5	--	
Load Regulation	0% - 100% load	--	±0.5	--	
Minimum Load		0	--	--	
Ripple & Noise*	20MHz bandwidth (peak-peak value)	--	--	150	mV
Temperature Coefficient	380VAC, 0℃ to 50℃	--	0.03	--	%/℃
Stand-by Power Consumption	380VAC	--	--	3	W
Hold-up Time	380VAC	--	28	--	ms
	480VAC	--	40	--	
Short Circuit Protection	Recovery time <5s after the short circuit disappear.	Hiccup, continuous, self-recover			
Over-current Protection		130% - 220% Io, self-recover			

Over-voltage Protection	24V	≤33.6V (Clamp, self-recovery after the fault clearance)

Note: *The "Tip and barrel method" is used for ripple and noise test, output parallel 47uF electrolytic capacitor and 0.1uF ceramic capacitor, please refer to enclosed Switching Power Supply 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
	Input - ⏚			2000	--	--	
	Output - ⏚			500	--	--	
Insulation Resistance	Input - output	Environment temperature: 25±5℃ Relative humidity: <95%RH, non-condensing Testing voltage: 500VDC		100	--	--	MΩ
	Input - ⏚			100	--	--	
	Output - ⏚			100	--	--	
Touch Leakage Current		480VAC		--	--	0.5	mA
Operating Temperature				-40	--	+85	℃
Storage Temperature				-40	--	+85	
Storage Humidity		Non-condensing		--	--	95	%RH
Operating Humidity		Non-condensing		--	--	90	
Switching Frequency				--	100	--	kHz
Power Derating		Operating temperature derating	-40℃ to -30℃	2	--	--	%/℃
			+50℃ to +70℃	2.5	--	--	
			+70℃ to +85℃	1.33	--	--	
Safety Standards				Design refer to GB4943.1, UL/IEC/BS EN/EN62368-1			
Safety Class				CLASS I			
MTBF		MIL-HDBK-217F@25℃		≥300,000h			
Warranty		Ambient temperature: <70℃		3 years			

General Specifications

Case Material	Metal (AL1100, SGCC)
Dimensions	179.00 x 99.00 x 30.00mm
Weight	460g (Typ.)
Cooling Method	Free air cooling

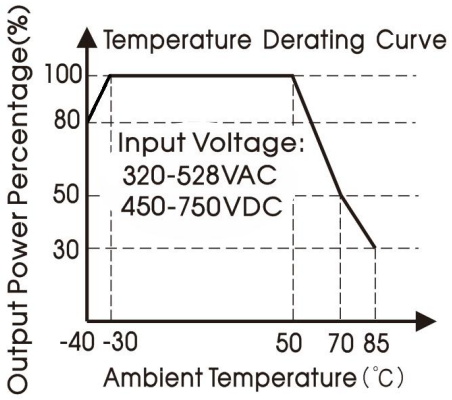
Electromagnetic Compatibility (EMC)

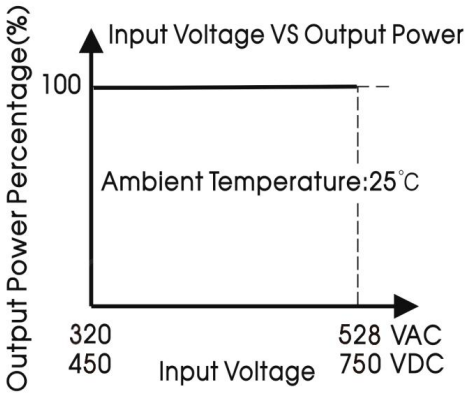
Emissions	CE	CISPR32/EN55032	CLASS A	
	RE	CISPR32/EN55032	CLASS A	
Immunity*	ESD	IEC/EN61000-4-2	Contact ±6KV/Air ±8KV	perf. Criteria A
	RS	IEC/EN61000-4-3	10V/m	perf. Criteria A
	EFT	IEC/EN61000-4-4	±4KV	perf. Criteria A
	Surge	IEC/EN61000-4-5	line to line ±2KV/line to PE ±4KV	perf. Criteria A
	PFMF	IEC/EN61000-4-6	10 Vr.m.s	perf. Criteria A
	CS	IEC/EN61000-4-8	30A/m	perf. Criteria A
	Voltage dips	IEC/EN61000-4-11	70% Un, 25/30 cycle(50/60Hz) 40% Un, 10/12 cycle(50/60Hz) 0% Un, 1 cycle (Un is the maximum input nominal voltage)	perf. Criteria B
	Voltage interruption	IEC/EN61000-4-11	0% Un, 250/300 cycle(50/60Hz) (Un is the maximum input nominal voltage)	perf. Criteria C

Remark:
1. The power supply does not meet the requirements of harmonic current stipulated in EN61000-3-2; This power supply is not suitable for the following situations.
   1) The terminal equipment is used in the European Union;
   2) The terminal equipment is connected to public mains supply with 220VAC or greater rated nominal voltage that mandatory to meet the requirements of EN61000-3-2;

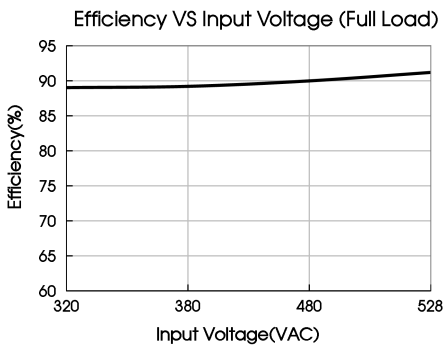
3) The power supply is installed in terminal equipment with average or continuous input power greater than 75W;
4) The power supply belong to a part of lighting system;
In addition, the power supply can be used in the following terminals which do not need to meet EN61000-3-2;
(1) Professional equipment with total fixed input power greater than 1000W;
(2) symmetrical controlled heating element with rated power less than or equal to 200W.
2. If no harmonic current is required or customers can solve harmonic current problems by themselves, this product can be used.

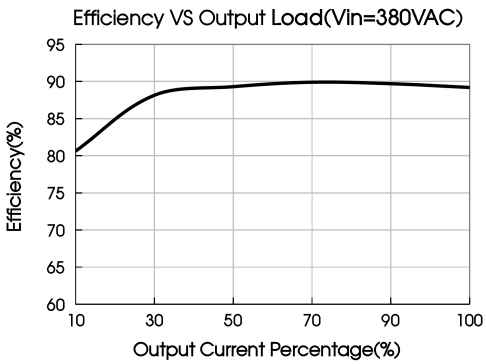
Product Characteristic Curve



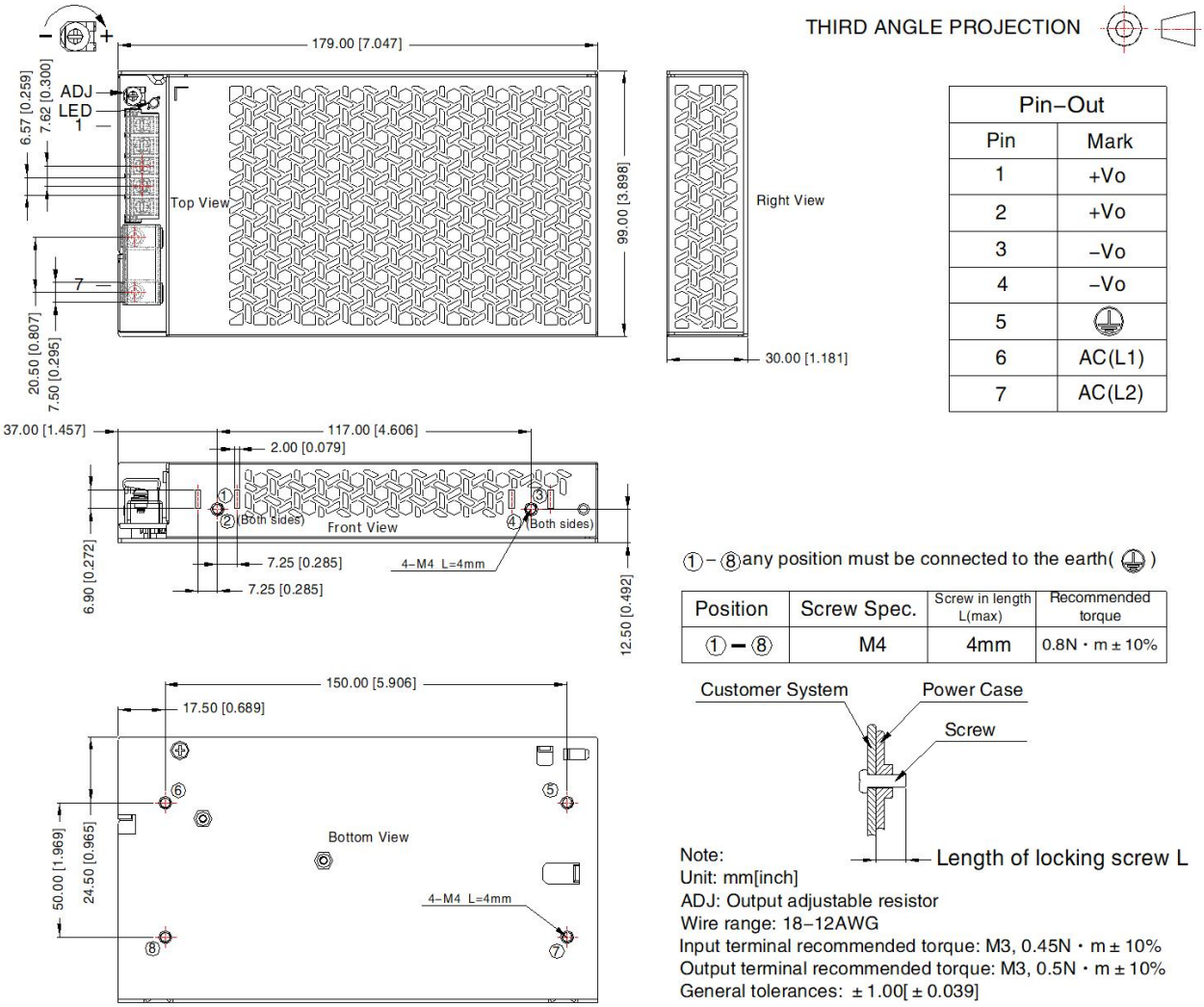


Note: This product is suitable for applications using forced air cooling; for applications in closed environment please consult Mornsun FAE.





Dimensions and Recommended Layout



Pin-Out	
Pin	Mark
1	+Vo
2	+Vo
3	-Vo
4	-Vo
5	⏚
6	AC(L1)
7	AC(L2)

①-⑧any position must be connected to the earth(⏚)

Position	Screw Spec.	Screw in length L(max)	Recommended torque
①-⑧	M4	4mm	0.8N・m±10%

Note:
Unit: mm[inch]
ADJ: Output adjustable resistor
Wire range: 18-12AWG
Input terminal recommended torque: M3, 0.45N・m±10%
Output terminal recommended torque: M3, 0.5N・m±10%
General tolerances: ±1.00[±0.039]

Note:

1. For additional information on Product Packaging please refer to www.mornsun-power.com. Packaging bag number: 58220727;
2. Unless otherwise specified, parameters in this datasheet were measured under the conditions of Ta=25℃, humidity <75%RH with nominal input voltage and rated output load;
3. The room temperature derating of 5℃/1000m is needed for operating altitude greater than 2000m;
4. All index testing methods in this datasheet are based on our company corporate standards;
5. 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;
6. We can provide product customization service, please contact our technicians directly for specific information;
7. Products are related to laws and regulations: see "Features" and "EMC";
8. The out case needs to be connected to PE (⏚) of system when the terminal equipment in operating;
9. The output voltage can be adjusted by the ADJ, clockwise to increase;
10. Our products shall be classified according to ISO14001 and related environmental laws and regulations, and shall be handled by qualified units;
11. 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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