



## FEATURES

- Universal 85 - 264VAC or 120 - 370VDC Input voltage
- Accepts AC or DC input (dual-use of same terminal)
- Operating ambient temperature range: -30°C to +70°C
- 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
- Over-voltage class III
- Operating altitude up to 5000m

LM75-20B09 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, high reliability and double or reinforced insulation. 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)
CCC	LM75-20B09	72	9V/8A	8.0-10.0	86	8000

## Input Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Input Voltage Range	AC input	85	--	264	VAC
	DC input	120	--	370	VDC
Input Voltage Frequency		47	--	63	Hz
Input Current	115VAC	--	--	2	A
	230VAC	--	--	1	
Inrush Current	115VAC	Cold start	--	40	--
	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	--	±2	--	%
Line Regulation	Rated load	--	±0.5	--	
Load Regulation	0% - 100% load	--	±1	--	
Ripple & Noise*	20MHz bandwidth (peak-to-peak value)	--	100	--	mV
Temperature Coefficient	0°C to 50°C, 230VAC	--	±0.03	--	%/°C
Minimum Load		0	--	--	%
Stand-by Power Consumption		--	--	0.3	W
Hold-up Time	115VAC	8	--	--	ms
	230VAC	55	--	--	
Short Circuit Protection	Recovery time <5s after the short circuit disappear.	Hiccup, continuous, self-recovery			
Over-current Protection		110%-200% Io, self-recovery			
Over-voltage Protection		≤16.0VDC (Hiccup, self-recovery)			

Note: \*The "Tip and barrel method" is used for ripple and noise test, output parallel 47μF electrolytic capacitor and 0.1μF ceramic capacitor, please refer to Enclosed Switching Power Supply 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	
Operating Humidity	Non-condensing		20	--	90	%RH
Storage Humidity			--	--	95	
Switching Frequency			--	65	--	kHz
Power Derating	Operating temperature derating	+50°C to +70°C	2	--	--	%/°C
	Input voltage derating	85VAC-100VAC	1.33	--	--	%/VAC
Safety Standard			GB4943.1 safety approved Design refer to IEC/EN/UL62368-1, EN60335-1, GB4943.1			
Safety Class			CLASS I			
MTBF	MIL-HDBK-217F@25°C		>300,000 h			

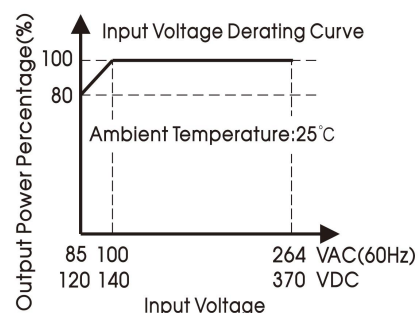
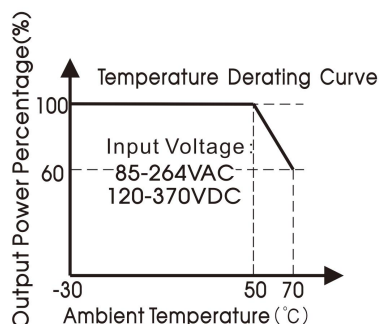
Mechanical Specifications

Case Material	Metal (AL1100, SGCC)
Dimensions	99.00 x 97.00 x 30.00 mm
Weight	220g (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/EN 61000-4-2	Contact ±6KV/Air ±8KV	perf. Criteria A
	RS	IEC/EN 61000-4-3	10V/m	perf. Criteria A
	EFT	IEC/EN 61000-4-4	±2KV	perf. Criteria A
	Surge	IEC/EN 61000-4-5	line to line ±2KV/line to ground ±4KV	perf. Criteria A
	CS	IEC/EN61000-4-6	10 Vr.m.s	perf. Criteria A
	Voltage dips, short interruptions and voltage variations immunity	IEC/EN61000-4-11	0%, 70%	perf. Criteria B

Product Characteristic Curve



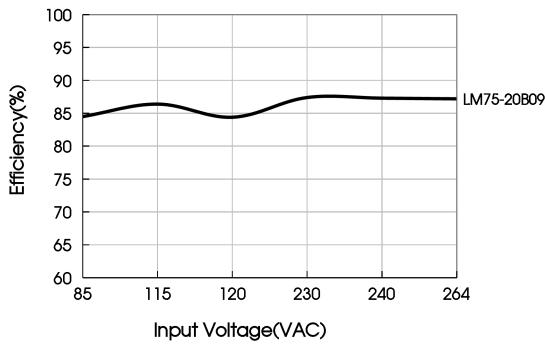
# AC/DC 75W Enclosed Switching Power Supply LM75-20B09

# MORNSUN®

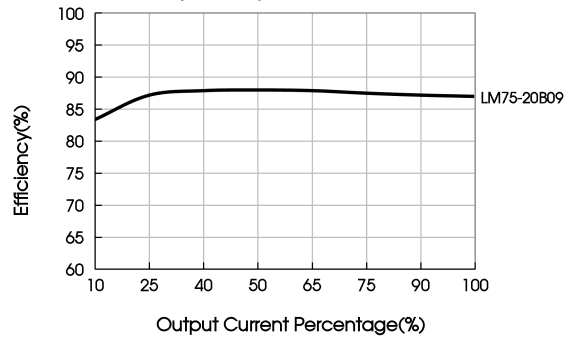
Note: 1. With an AC input voltage between 85 -100VAC and a DC input between 120-140VDC the output power must be derated as per the temperature derating curves;

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

Efficiency Vs Input Voltage (Full Load)



Efficiency Vs Output Load (Vin=230VAC)



## Dimensions and Recommended Layout

Top View

THIRD ANGLE PROJECTION

Right View

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

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

Position	Screw Spec.	L(max)	Torque(max)
② - ③	M3	5mm	0.4N·m
⑥ - ⑦	M3	3mm	0.4N·m

Customer System      Power Case

Screw

**Note:**  
 Unit: mm[inch]  
 ADJ: Output adjustable resistor  
 Wire range: 22-12AWG  
 Connector tightening torque: M3.5, 0.8N·m  
 General tolerances: ± 1.00 [± 0.039]

Note:

1. For additional information on Product Packaging please refer to [www.mornsun-power.com](http://www.mornsun-power.com). Packaging bag number: 58220119;
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. The room temperature derating of  $5^{\circ}\text{C}/1000\text{m}$  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 ( $\perp$ ) of system when the terminal equipment in operating;
9. The output voltage can be adjusted by the ADJ, clockwise to decrease;
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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