



CE Report CB IEC62368-1 GB4943.1 BS EN62368-1
EN62368-1 EN60335-1 EN61558-1



RoHS



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
- OVC III (designed to meet EN61558)
- Operating altitude up to 5000m
- 3 years warranty

LM75-20Bxx 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, high reliability and double or reinforced isolation. These converters offer excellent EMC performance and meet IEC/EN61000-4, CISPR32/EN55032, UL/EN/IEC62368, EN60335, EN61558, 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 (uF)
EN/IEC/CCC/BIS	LM75-20B05	70	5V/14A	4.5-5.5	86	10000
	LM75-20B12	72	12V/6A	10.2-13.8	88	6000
	LM75-20B15	75	15V/5A	13.5-18	88	5000
	LM75-20B24	76.8	24V/3.2A	21.6-28.8	90	1500
	LM75-20B36	75.6	36V/2.1A	32.4-39.6	90	1000
	LM75-20B48	76.8	48V/1.6A	43.2-52.8	91.5	680

Note: *1. Use suffix "C" for terminal with protective cover and suffix "Q" for conformal coating.

2. The product picture is for reference only. For details, please refer to the actual product.

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	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	--	
Ripple & Noise*	20MHz bandwidth		5V	--	100	mV

	(peak-to-peak value)	12V/15V	--	120	--	
		24V	--	150	--	
		36V	--	200	--	
		48V	--	200	--	
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-recover			
Over-current Protection			110%-200% Io, self-recover			
Over-voltage Protection	5V		≤6.3VDC (Output voltage clamp)			
	12V		≤16.2VDC (Hiccup, self-recover)			
	15V		≤21.75VDC (Hiccup, self-recover)			
	24V		≤33.6VDC (Hiccup, self-recover)			
	36V		≤50VDC (Output voltage clamp)			
	48V		≤60VDC (Output voltage clamp)			

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 - 	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	5V output	+40°C to +70°C	1.3	--	--	%/°C	
		Other output	+50°C to +70°C	2	--	--		
	Input voltage derating	85VAC-100VAC		1.33	--	--	%/VAC	
Safety Standard				IEC/EN/BS EN62368-1, GB4943.1, IS13252 (Part1) safety approved & EN60335-1, EN61558-1; Design refer to UL62368-1				
Safety Class				CLASS I				
MTBF	MIL-HDBK-217F@25°C			≥300,000 h				

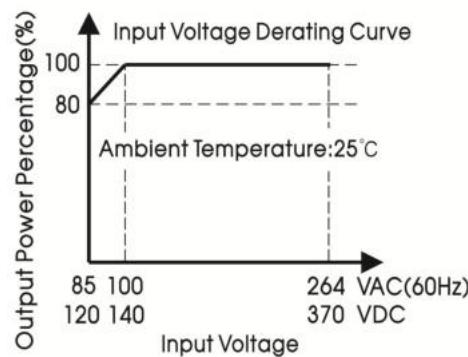
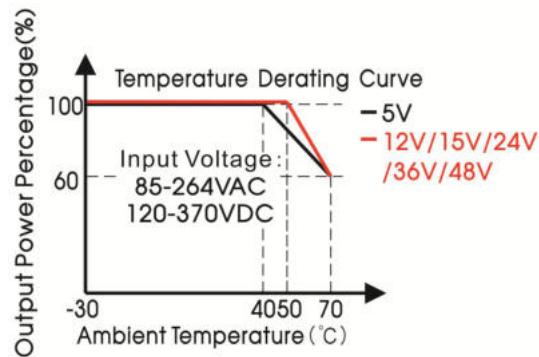
Mechanical Specifications

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)

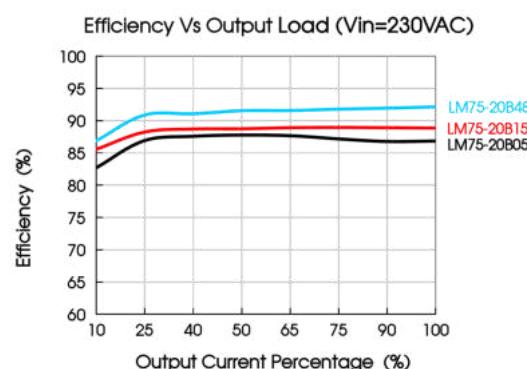
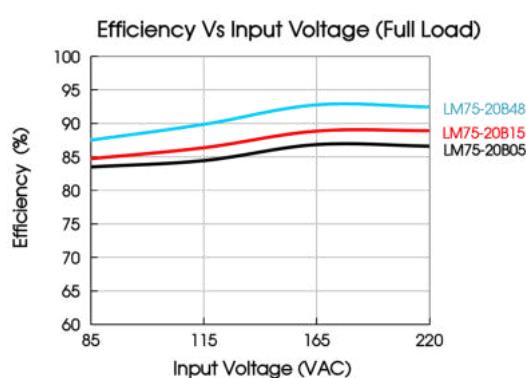
Emissions	CE	CISPR32/EN55032 CLASS B	
	RE	CISPR32/EN55032 CLASS B	
	Harmonic current	IEC/EN61000-3-2 CLASS A	
Immunity	ESD	IEC/EN 61000-4-2 Contact $\pm 6\text{KV}$ /Air $\pm 8\text{KV}$	perf. Criteria A
	RS	IEC/EN 61000-4-3 10V/m	perf. Criteria A
	EFT	IEC/EN 61000-4-4 $\pm 2\text{KV}$	perf. Criteria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

Product Characteristic Curve



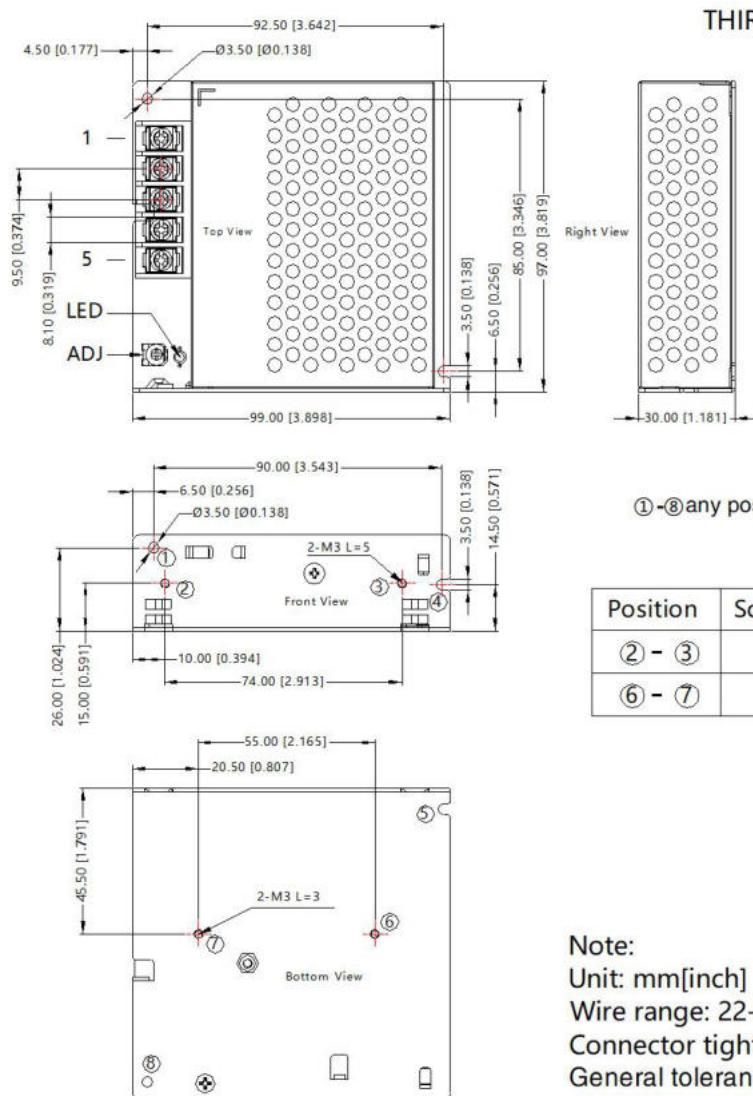
Note: 1. With an AC input voltage between 85 -100VAC and a DC input between 120-140VDC the output power must be derated as per the temperature derating curves;

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



Dimensions and Recommended Layout

LM75-20Bxx, LM75-20Bxx-Q Series



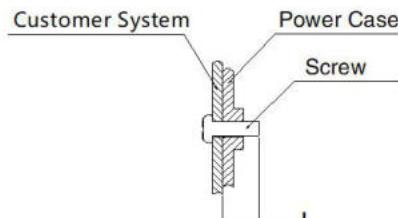
THIRD ANGLE PROJECTION

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



Note:

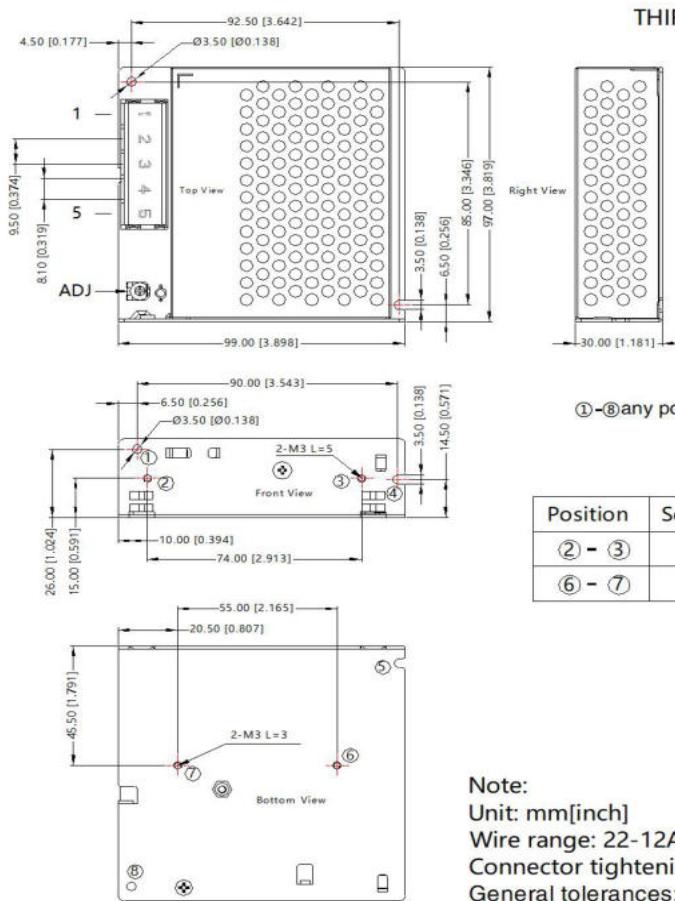
Unit: mm[inch]

Wire range: 22-12AWG

Connector tightening torque: M3.5 , 0.8N·m

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

LM75-20Bxx-C Series

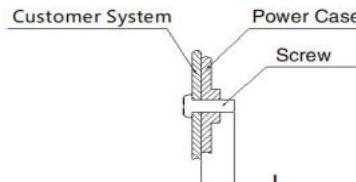


THIRD ANGLE PROJECTION

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

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

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



Note:

Unit: mm[inch]

Wire range: 22-12AWG

Connector tightening torque: M3.5 , 0.8N·m

General tolerances: ± 1.00 [± 0.039]

Note:

- For additional information on Product Packaging please refer to www.mornsun-power.com. Packaging bag number: 58220119;
- 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 room 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 (\ominus) of system when the terminal equipment in operating;
- The output voltage can be adjusted by the ADJ, clockwise to increase;
- 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.

Mornsun Guangzhou Science & Technology Co., Ltd.

Address: No. 5, Kehui St. 1, Kehui Development Center, Science Ave., Guangzhou Science City, Huangpu District, Guangzhou, P. R. China

Tel: 86-20-38601850

Fax: 86-20-38601272

E-mail: info@mornsun.cn

www.mornsun-power.com