



RoHS



EN62368-1



GB4943.1



BS EN62368-1



UL62368-1



IEC60335-1:2010
IEC60335-2:2008



IEC62368, IS13252
www.sbc.gov.in

FEATURES

- Universal 85 - 305VAC or 120 - 430VDC input voltage
- Accepts AC or DC input (dual-use of same terminal)
- Semi-potted process, fanless design
- Operating ambient temperature range: -40°C to +85°C
- Low Ripple & Noise, high efficiency
- Active PFC
- 150% peak load output for 1 second
- High I/O isolation test voltage up to 4000VAC
- Output short circuit, over-current, over-voltage, over-temperature protection
- 3 years warranty
- Operating altitude up to 5000m
- Safety according to IEC62368, IS13252 (Part1), IEC60335, EN61558

LMF750-23BxxUH(-C) series is one of Mornsun's enclosed fanless semi-potted ultra narrow AC-DC switching power supply, it is suitable for industrial and outdoor occasions where the application environment is relatively harsh. It features 305VAC all operating conditions, universal AC input and at the same time accepts DC input voltage, cost-effective, high PF value, high efficiency, high reliability, 150% peak load output and operating altitude up to 5000m. These converters offer excellent EMC performance and meet UL/EN62368, EN60335, EN61558, GB4943 standards and they are widely used in areas of industrial, lighting, electricity, security, telecommunications, smart home etc.

Selection Guide

Certification	Part No.*	Rated Output Power (W)*	Nominal Output Voltage and Current (Vo/Io)	Output Voltage Adjustable Range (V)	Efficiency at 230VAC (%) Typ.	25°C Max. Capacitive Load (µF)	Low Temperature Max. Capacitive Load (µF)
EN/CCC/UL/BIS	LMF750-23B12UH	720.0	12V/60A	12-14.4	94	12000	6000
	LMF750-23B24UH	751.2	24V/31.3A	24-28.8	95	10000	4000
	LMF750-23B28UH	750.4	28V/26.8A	28-33.6	95	9000	3500
	LMF750-23B36UH	752.4	36V/20.9A	36-43.2	95	8000	3000
	LMF750-23B48UH	753.6	48V/15.7A	48-57.6	96	6000	2000

Note: 1.*Use suffix "C" for terminal with protective cover;

2.*Under any conditions, the total power of the product should not exceed the rated output power, and the output current should not exceed the rated output current.

Input Specifications

Item	Operating Conditions		Min.	Typ.	Max.	Unit
Input Voltage Range	AC input		85	--	305	VAC
	DC input		120	--	430	VDC
Input Voltage Frequency			47	--	63	Hz
Input Current	115VAC		--	--	7.5	A
	230VAC		--	--	3.8	
Inrush Current	115VAC		--	--	20	
	230VAC		--	--	40	
Power Factor	115VAC		0.98	--	--	--
	230VAC		0.95	--	--	
Leakage Current	277VAC, 50Hz		Contact leakage current		<0.5mA	
Hot Plug			Unavailable			



Output Specifications

Item	Operating Conditions		Min.	Typ.	Max.	Unit
Output Voltage Accuracy	Full load range		--	±1.0	--	%
Line Regulation	Rated load		--	±0.5	--	
Load Regulation	0% - 100% load		--	±0.5	--	
Ripple & Noise*	20MHz bandwidth (peak-to-peak value), 25°C	12V	--	--	150	mV
		24V/28V/36V/48V	--	--	200	
Minimum Load			0	--	--	%
Stand-by Power Consumption	25°C, 230VAC input		--	--	5	W
Peak Load Output	100 - 277VAC, test for 1s		--	150%	--	
Hold-up Time	25°C, full load, 115VAC/230VAC		12	--	--	ms
Short Circuit Protection	Recover time <5S after the short circuit disappear		Constant current hiccup protection, continuous, self-recover			
Over-current Protection			> 110% - 170% Io, constant current hiccup protection, self-recover			
Over-voltage Protection	12V		14.5 - 17VDC		Hiccup, self-recover	
	24V		29.0 - 33VDC			
	28V		33.5 - 38VDC			
	36V		43.5 - 49VDC			
	48V		59.0 - 63VDC			
Over-temperature Protection			Output voltage turn off, self-recover after the temperature drops			

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. When the product is working at a light load (<10% of rated load), the product is in a green working mode to improve efficiency, and the ripple & noise specification is ≤2.0 times of the rated specification.

General Specifications

Item	Operating Conditions			Min.	Typ.	Max.	Unit	
Isolation	Input - ⊕	Electric strength test for 1min., leakage current <5mA		2000	--	--	VAC	
	Input - output			4000	--	--		
	Output - ⊕			1750	--	--		
Insulation Resistance	Input - ⊕	Environment temperature: 25±5°C Relative humidity: <95%RH, non-condensing Testing voltage: 500VDC		50	--	--	MΩ	
	Input - output				--	--		
	Output - ⊕				--	--		
Operating Temperature				-40	--	+85	°C	
Storage Temperature				-40	--	+85		
Operating Humidity	Non-condensing			20	--	90	%RH	
Storage Humidity				10	--	95		
Power Derating	Operating temperature derating	With aluminum plate or 23.5CFM fan*	12V	-40°C to +45°C	0	--	--	% / °C
				+45°C to +85°C	2	--	--	
		24V/28V/36V/48V	-40°C to +50°C	0	--	--		
			+50°C to +85°C	2.5	--	--		
	Without aluminum plate	12V/24V/28V/36V/48V (70% start derating)	-40°C to +45°C	0	--	--	% / VAC	
			+45°C to +85°C	1.58	--	--		
Input voltage derating				85VAC - 180VAC	0.33	--	--	
				180VAC - 305VAC	0	--	--	
Safety Standard				GB4943.1, UL62368-1, IEC60950-1 safety approved & EN62368-1(Report); Design refer to IEC62368-1, IS13252 (Part1), IEC60335-1, EN61558-1				



Safety Class		CLASS I
MTBF	MIL-HDBK-217F@25°C	≥300,000 h
Note: *In order to optimize the heat dissipation performance, when the aluminum plate is used for auxiliary heat dissipation, please note: 1. The size of the aluminum plate is 450mm x 450mm x 3mm; 2. The surface of the aluminum plate must be coated with thermal grease; 3. The product must be tightly attached to the aluminum plate.		

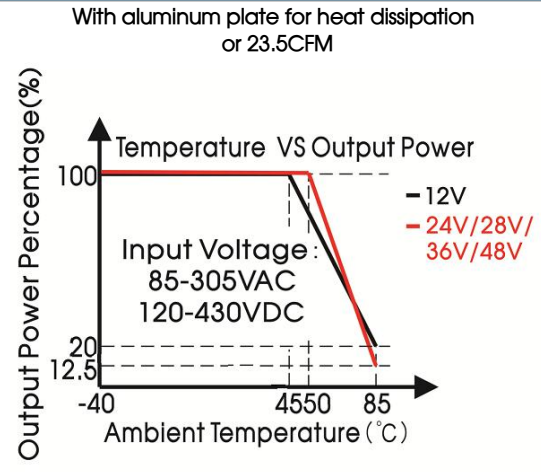
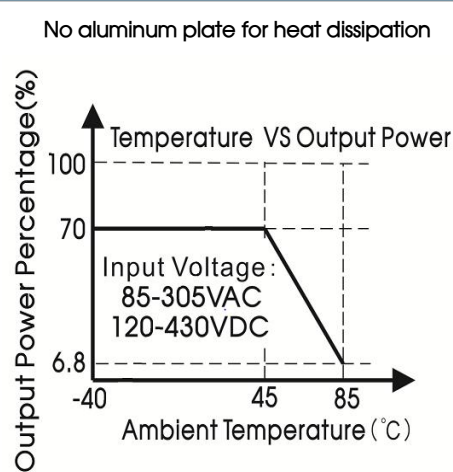
Mechanical Specifications

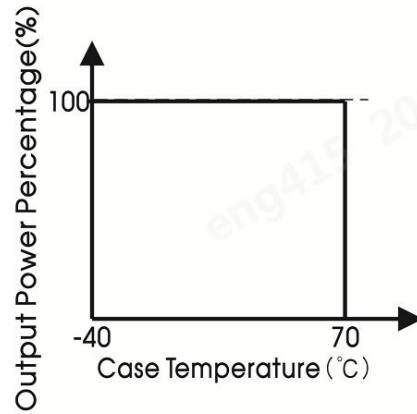
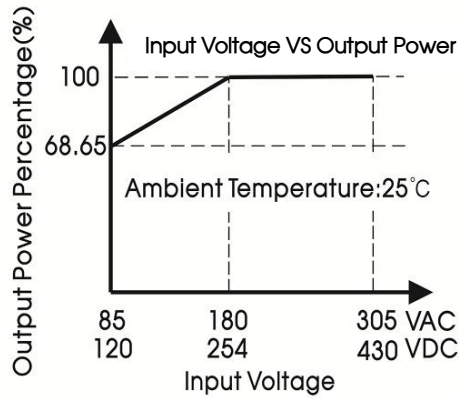
Case Material	Metal (AL6063, SGCC)
Dimensions	237.00mm x 100.00mm x 41.00mm
Weight	1300g (Typ.)
Cooling Method	Free air convection

Electromagnetic Compatibility (EMC)

Emissions	CE	CISPR32/EN55032	CLASS B	
	RE	CISPR32/EN55032	CLASS B	
	Harmonic current	IEC/EN61000-3-2	CLASS A	
	Voltage flicker	IEC/EN6100-3-3		
Immunity	ESD	IEC/EN61000-4-2	Contact ±8KV/Air ±15KV	Perf. Criteria A
	RS	IEC/EN61000-4-3	10V/m	
	EFT (Input port)	IEC/EN61000-4-4	±2KV	
	EFT (Output port)	IEC/EN61000-4-4	±2KV	
	Surge (Input port)	IEC/EN61000-4-5	Line to line ±2KV/line to PE ±4KV	
	Surge (Output port)	IEC/EN61000-4-5	Line to line ±0.5KV/line to PE ±1KV	
	CS (Input port)	IEC/EN61000-4-6	10Vr.m.s	
	CS (Output port)	IEC/EN61000-4-6	10Vr.m.s	
	Power frequency magnetic field	IEC/EN61000-4-8	10A/m	
	Voltage dip, short interruption and voltage variation	IEC/EN61000-4-11	0%, 70%	Perf. Criteria B
	Intercom interference test	MS-SOP-DQC-007		Perf. Criteria B

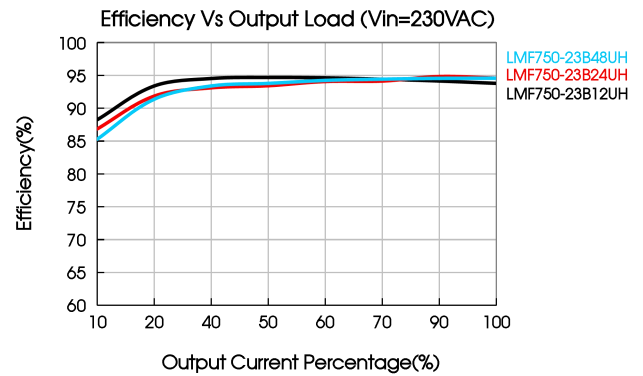
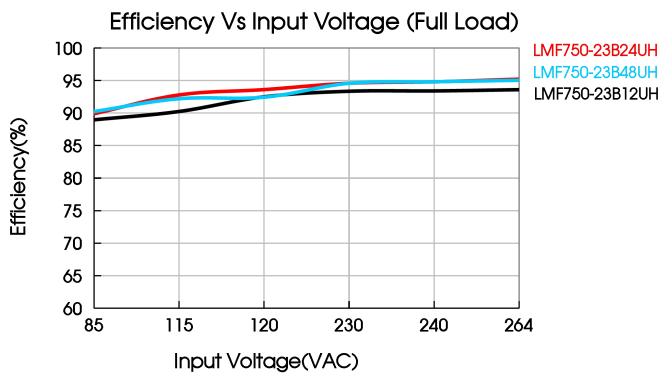
Product Characteristic Curve





Note: 1. With an AC input voltage between 85 -180VAC and a DC input between 120 - 254VDC the output power must be derated as per the temperature derating curves;

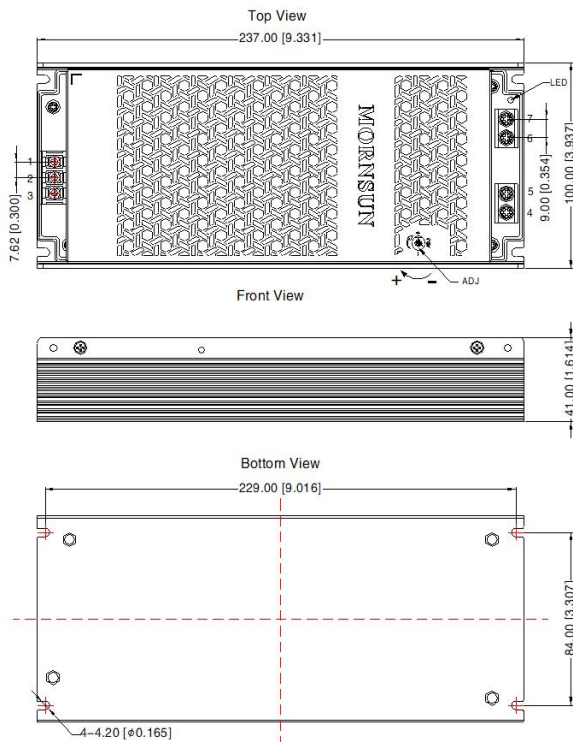
2. This product is suitable for applications using natural air cooling; for applications in closed environment please consult Mornsun FAE.



Dimensions and Recommended Layout

LMF750-23BxxUH

THIRD ANGLE PROJECTION



Pin-Out	
Pin	Mark
1	⊕
2	AC/N
3	AC/L
4	-Vo
5	-Vo
6	+Vo
7	+Vo
8	DC-OK-
9	DC-OK+

Connector wires range

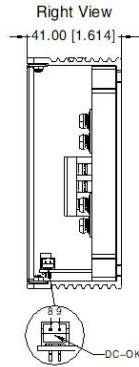
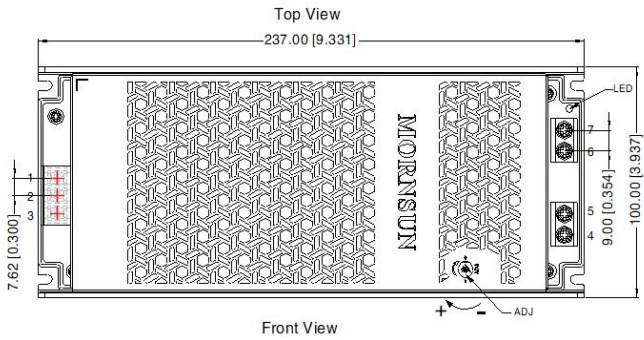
Pro. No	Input connector	Output connector	Output connector (double wires)	Pic.
12V	22-14AWG	14-12AWG		double wires
24/28/36V		16-12AWG		
48V		18-12AWG		
Screw/torque	M3.0, Max 0.5N · m	M4.0, Max 0.9N · m		

Note:
Unit: mm[inch]
LED: Output status indicator LED
ADJ: Output adjustable resistor
DC-OK: JST SPH-002T-P0.5S or equivalent
General tolerances: ± 1.00[± 0.039]

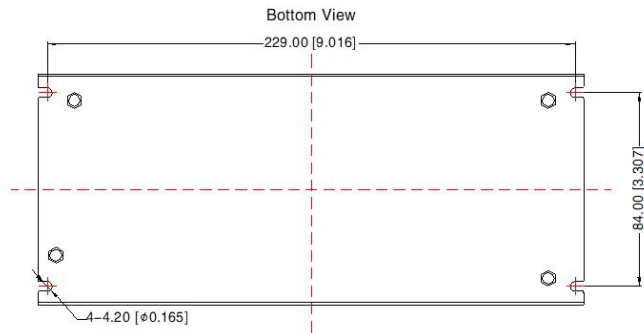


LMF750-23BxxUH-C

THIRD ANGLE PROJECTION



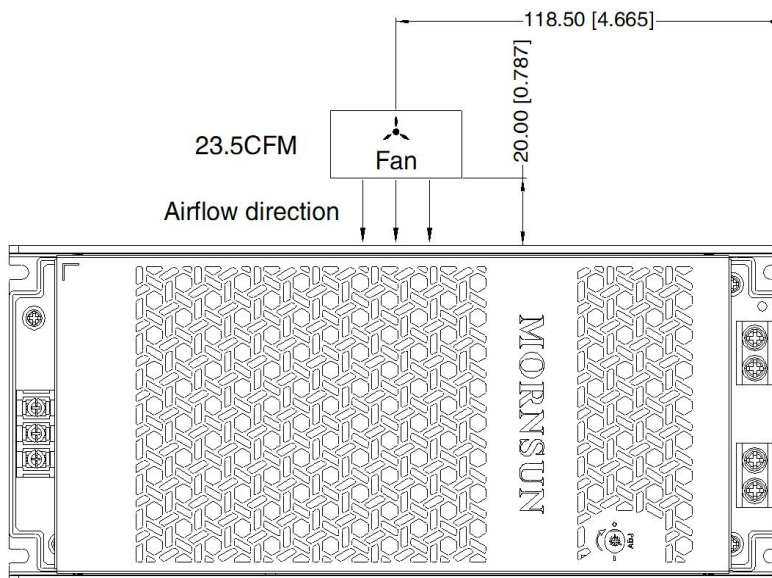
Pin-Out	
Pin	Mark
1	
2	AC/N
3	AC/L
4	-Vo
5	-Vo
6	+Vo
7	+Vo
8	DC-OK-
9	DC-OK+



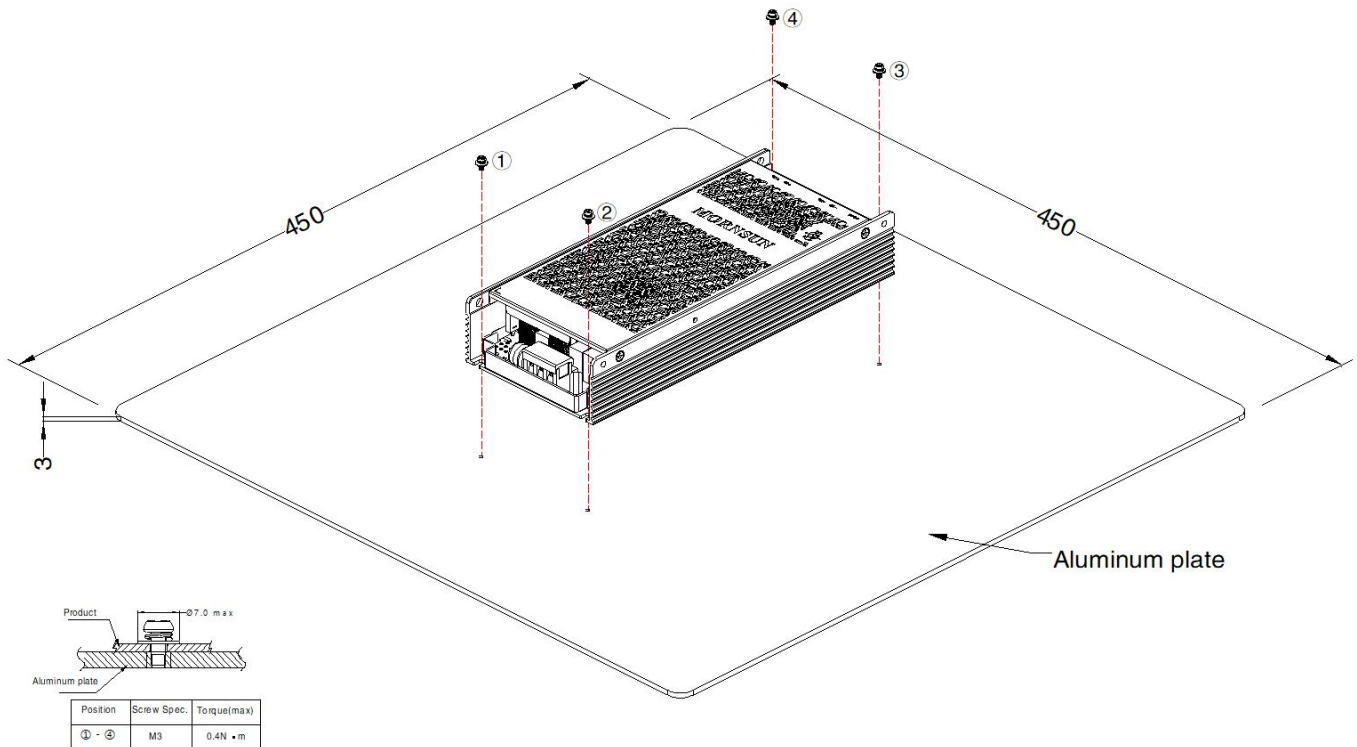
Connector wires range

Pro. No	Input connector	Output connector	Output connector (double wires) Pic.
12V	22-14AWG	14-12AWG	
24/28/36V		16-12AWG	
48V		18-12AWG	
Screw/torque	M3.0, Max 0.5N · m	M4.0, Max 0.9N · m	

Note:
Unit: mm[inch]
LED: Output status indicator LED
ADJ: Output adjustable resistor
DC-OK: JST SPH-002T-P0.5S or equivalent
General tolerances: $\pm 1.00 [\pm 0.039]$



Installation Diagram



Note: 1. In order to meet the "Derating Curve", the product testing must be installed onto an aluminum plate. The size of the suggested aluminum plate is shown as above.
And for optimizing thermal performance, it is necessary to apply thermal grease on the bottom of the product.

2. It is suggested to install the product with M3 combination screws, and the product must be firmly installed at the center of the aluminum plate.

Note: This is the schematic diagram of the bottom installation, install with M3 x 6 round head screws, it is necessary to apply thermal grease on the bottom of the product, derating refer to with aluminum plate curve.

Note:

1. For additional information on Product Packaging please refer to www.mornsun-power.com. Packaging bag number: 58220326;
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 (⊕) of system when the terminal equipment in operating;
9. The output voltage can be adjusted by the ADJ, clockwise to increase;
10. If product involves multi-brand materials and there are differences in color etc, please refer to the standards of each manufacturer;
11. Our products shall be classified according to ISO14001 and related environmental laws and regulations, and shall be handled by qualified units;
12. 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.

Matlog

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