



FEATURES

- AC-DC bidirectional full isolation, bidirectional energy conversion
- Supports three-phase without neutral wire application: 304 - 456VAC
- Bidirectional seamless switching without voltage difference
- Reverse power surge, single cabinet capacity increase
- Power status LED indicator
- Full operating condition high efficiency, high energy feedback
- High protection level, not afraid of grid fluctuations in harsh environments
- Output short, over-current, over-voltage, over-temperature protection, high reliability protection
- Smaller size, lighter weight, easy to handle
- Intelligent, simple operation, convenient maintenance
- Operating altitude up to 3000m
- 3 years warranty
- Comply with UL/EN/BS EN62368, EN62477

LMBT10K-16B15B/FR2 is a metal shell type bidirectional power supply provided by Mornsun for customers. The power supply can be bidirectional input to achieve AC-DC bidirectional energy conversion, with cost-effective, high power density, high efficiency, high reliability and double or reinforced insulation. These converters offer excellent EMC performance and meet UL/EN/BS EN62368, UL62477 standards and they are widely used in chemical composition, battery detection, aging, charge and discharge, equalization and other related fields.

Selection Guide*

Certification	Part No.	Power Grid	Rated Input (V _{in} /I _{in})	Rated Output (V _o /I _o)	Power(W)	Efficiency (%) Max	State
--	LMBT10K-16B15BR2 (Blow air inward)	3 phase 380VAC	380VAC	15VDC/666.7A	10000	94.5	AC-DC
			15VDC/600A	380VAC	9000	94.5	DC-AC
	LMBT10K-16B15FR2 (Exhaust air outward)		380VAC	15VDC/666.7A	10000	94.5	AC-DC
			15VDC/600A	380VAC	9000	94.5	DC-AC

Note: 1.*The product picture is for reference only. For details, please refer to the actual product.

Input Specifications/AC to DC Direction

Item	Operating Conditions		Min.	Typ.	Max.	Unit
Input Voltage Range	AC input	Line voltage	304	380	456	VAC
Input Voltage Frequency			45	--	65	Hz
Input Current	380VAC		--	--	24	A
Inrush Current	380VAC	Cold start	--	--	25	
Power Factor	380VAC, full load, 25°C		0.99			
Hot Plug			Unavailable			
Current Harmonic	380VAC, full load		3% TYP			
Input Under-voltage Protection	Full load range	Line voltage	277	--	295	VAC
Input Over-voltage Protection	Full load range	Line voltage	470	--	485	
Input Frequency Protection	Full input range, full load range		Available			

Output Specifications/AC to DC Direction

Item	Operating Conditions		Min.	Typ.	Max.	Unit
Output Voltage Accuracy	Full load range	15V	--	±1.0	--	%
Line Regulation	Rated load		--	±1.0	--	

Load Regulation	Rated input voltage	15V	--	±1.0	--	
Ripple & Noise*	25°C, 20MHz bandwidth, peak-to-peak value	15V	--	--	300	mV
Temperature Coefficient			--	--	±0.03	%/°C
Minimum Load			0	--	--	%
Load Sharing Accuracy	Supports up to 4 parallel power supplies, CAN1 or CAN2 are interconnected		--	--	±5.0	%
Short Circuit Protection			Hiccup protection, self-recover			
Over-current Protection			≥ 103% I _o , 500ms	Hiccup protection, self-recover		
Over-voltage Protection	15V		≤ 18VDC, turn off the output, restore after restart			
Over-temperature Protection			Output voltage turn off, self-recover after the temperature drops OTP temperature: 55°C			

Note: 1.*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.

Input Specifications/DC to AC Direction

Item	Operating Conditions	Min.	Typ.	Max.	Unit
DC Input Voltage Range	DC input	15	--	--	VDC
Input Current	DC input (rated voltage)	--	600	--	A
Input Power			9000		W

Output Specifications/DC to AC Direction

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Output Voltage Range	AC Output Line voltage	304	380	456	VAC
Output Voltage Frequency		45	--	65	Hz
Output Current		--	--	18	A
Ripple & Noise*	25°C, 20MHz bandwidth, peak-to-peak value 15V	--	--	350	mV
Power Factor	380VAC, full load	0.99			
Current Harmonic	380VAC, full load	3% TYP			
Islanding Protection		Available			

General Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit	
Insulation Resistance	Input - ⊕	100	--	--	MΩ	
	Input - output	100	--	--		
	Output - ⊕	100	--	--		
Insulation Voltage	Input - ⊕	2828	--	--	VDC	
	Input - output	4242	--	--		
	Output - ⊕	707	--	--		
Operating Temperature		-10	--	+60	°C	
Storage Temperature		-40	--	+85		
Operating Humidity	Non-condensing	20	--	90	%RH	
Storage Humidity		10	--	95		
Power Derating	Operating temperature derating	-10°C to +45°C	0	--	--	%/%
		+45°C to +55°C	1	--	--	
		+55°C to +60°C	2	--	--	
	Input voltage derating	343VAC to 456VAC	0	--	--	%/VAC

		304VAC to 343VAC	0.5	--	--
Indicator Status	Fault	Red			
	AC/DC forward Charging	Blue			
	DC/AC reverse inversion	Green			
Bidirectional Switching Time	Seamless switching				
Communication	CAN				
Fan Fault protect	Self-recovery after fault clearance				
Fan Speed Measurement	Forced cooling	Intelligent speed regulation			
Online upgrade Function	Available				
Safety Class	CLASS I				

Mechanical Specifications

Case Material	Metal (SGCC)
Dimensions	285.00mm x 218.00mm x 86.00mm
Weight	5250g (Typ.)
Cooling Method*	Forced cooling

Electromagnetic Compatibility (EMC)

Emissions	Harmonic current	IEC/EN61000-3-2		CLASS A
	THD			5%
Immunity	ESD	IEC61000-6-2/IEC61000-4-2	Contact $\pm 6KV$ /Air $\pm 8KV$	Perf. Criteria A
	RS	IEC61000-6-2/IEC61000-4-3	80MHz – 1GHz 10V/m	Perf. Criteria A
	EFT	IEC61000-6-2/IEC61000-4-4	AC Port: $\pm 4kV$, 100kHz	Perf. Criteria B
	Surge	IEC61000-6-2/IEC61000-4-5	line to line $\pm 2KV$ /line to ground $\pm 4KV$	Perf. Criteria B
	CS	IEC61000-6-2/IEC61000-4-6	0.15MHz-80MHz 10V r.m.s	Perf. Criteria A
	Power frequency magnetic field	IEC61000-6-2/IEC61000-4-8	30A/m	Perf. Criteria A

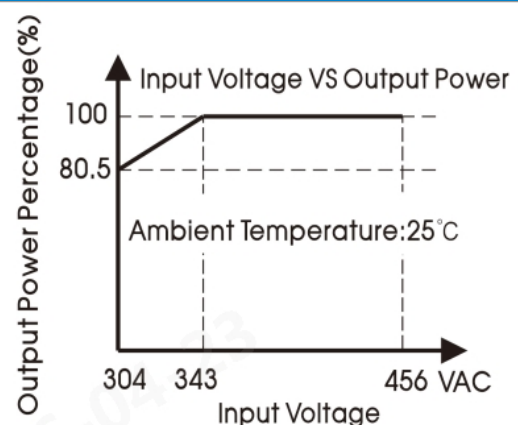
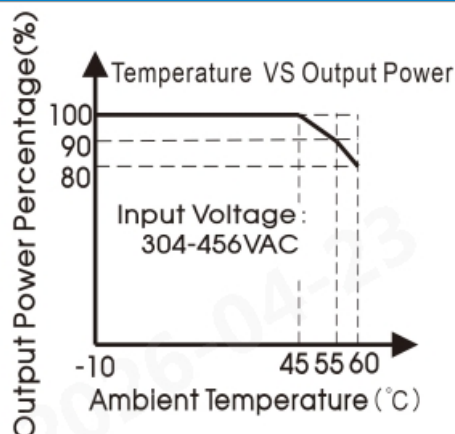
Note: *perf. Criteria:

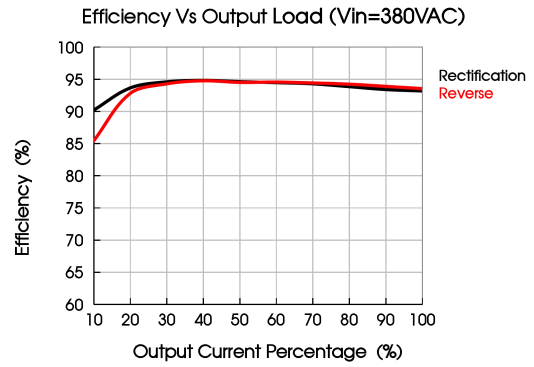
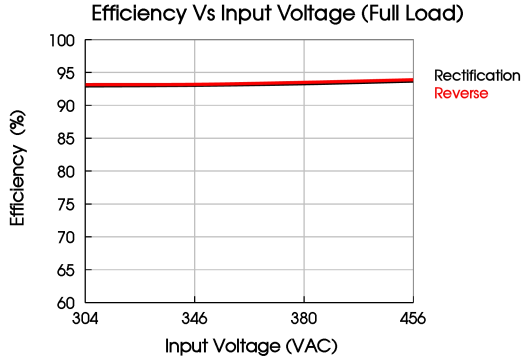
A: The equipment shall continue to operate as intended without operator intervention;

B: After the test, the equipment shall continue to operate as intended without operator intervention;

C: Loss of function is allowed, provided the function is self-recoverable, or can be restored by the operation of the controls by the user in accordance with the manufacturer's instructions.

Product Characteristic Curve

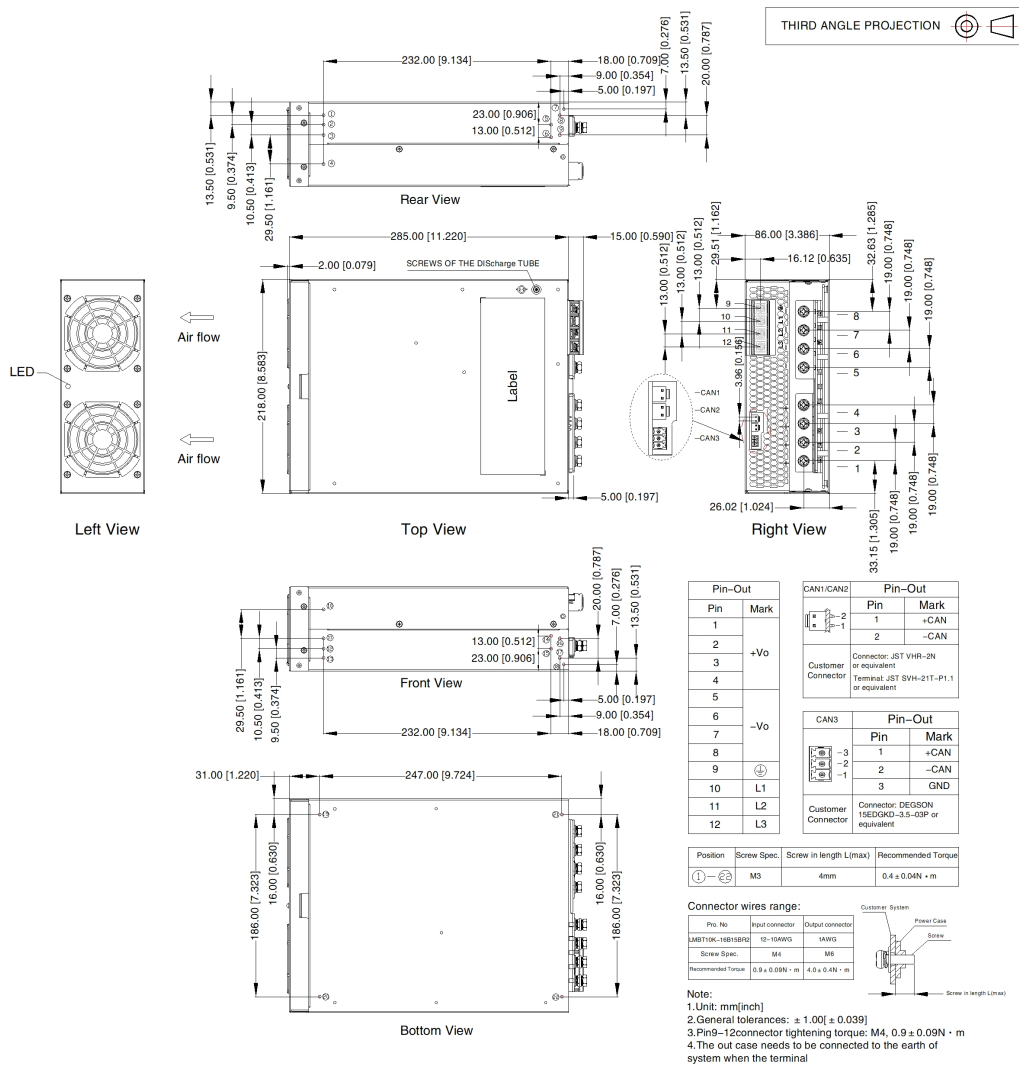




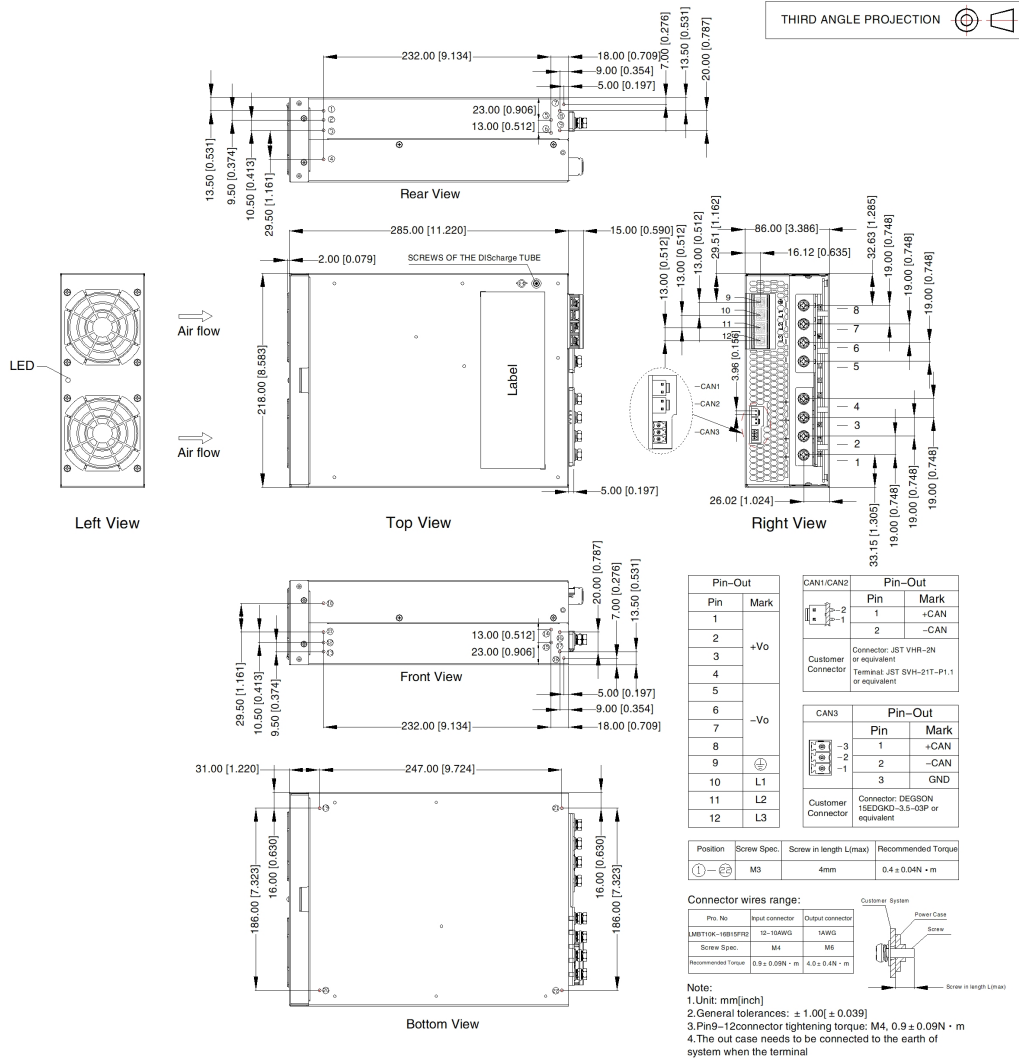
Note: 1. The input voltage described by the above curve is line voltage;
 2. This product is suitable for use in natural air-cooled environments. If used in closed environments, please consult MORNSUN FAE.

Dimensions and Recommended Layout

LMBT10K-16B15BR2



LMBT10K-16B15FR2



Note:

- For additional information on Product Packaging please refer to www.mornsun-power.com. Packaging bag number: 58220914;
- 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;
- 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 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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