

# Bidirectional Power Module Specification

TPS-BM1512KTIF/TPS-BM1613K6TIF





### Features

- AC three-phase without neutral line, no neutral line current
- Three-phase AC-DC bidirectional isolation and energy flow, reliable inverter in grid-connected system
- Mature and excellent soft switching technology, more reliable and efficient
- High efficiency in both directions, saving energy consumption expenses for customers
- Bidirectional high PF >0.99, low THDi <5%
- Bidirectional switch with seamless voltage, meeting the fast response requirements of test equipment
- Excellent EMC, meeting EN55032 and other international standards
- Strong adaptability, adapts to unstable grids and harsh environments, no derating at 45°C
- Modular design, intelligent expansion, automatic parallel operation
- Perfect fault protection function
- Can pass UL, CE, TUV certification

### Applications

- Cell formation and test equipment
- Power bidirectional test equipment
- Energy recyclable power aging equipment

### Profile

#### TPS-BM Three-phase LV AC-DC BPM

TPS-BM three-phase AC-DC BPM adopts advanced three-phase none neutral line technology to realize AC-DC bidirectional energy conversion in three-phase system, completely solves the problem of neutral line current in the power system. The mature soft switching technology is also adopted. The module provides high performances such as high reliability, strong adaptability of grids and environments, bidirectional seamless switching without voltage difference, high efficiency, low THDi, high PF, high power density.

### Specification

Product Model			TPS-BM1512KTIF	TPS-BM1613K6TIF
AC To DC Direction	Rated Output Capacity		12000W	13600W
	AC Input	Wiring Mode	3Ph+PE	
		Rated Voltage	380/400/415VAC	
		Voltage Range	323~456VAC	
		Frequency Range	50/60 ± 5Hz adaptive control	
		Input Current	≤ 24A	≤ 27A
		THDi	<5% @480VAC, full load, power grid THDu ≤ 2%	
		PF	0.99 @480VAC, full load, power grid THDu ≤ 2%	
	DC Output	Rated Voltage	15VDC	16VDC
		Rated Current	800A	850A
		Voltage Accuracy	1%	
		Ripple Voltage	1V	
		Peak Efficiency	91%@415VAC	91%@415VAC

		Rated Input Capacity	9600W	9500W
AC To DC Direction	DC Input	Rated Voltage <sup>①</sup>	15VDC	16VDC
		Rated Current	640A	593.8A
	AC Output	Voltage Range	323~456VAC	
		Frequency Range	50/60 ± 5Hz adaptive control	
		THDi	<5% @380VAC, full load, power grid THDu ≤ 2%	
		PF	0.99 @380VAC, full load, power grid THDu ≤ 2%	
		Peak Efficiency	90.5%@415VAC	90.5%@415VAC
Complete Machine	System	Power Direction	Bidirectional	
		Isolation Method	High frequency isolation	
		Cooling System	Forced air cooling, intelligent control	
		Air Flow	Default: Front inlet and rear outlet, R type: Rear inlet and front outlet(front: fan; rear: terminal)	
		Expandability	Up to 4 units connected in parallel	
		Non-balance of Current Sharing	< 5%	
	Environment	Operation Temperature <sup>②</sup>	-10°C~45°C full load, 45°C~50°C power derating to 90% , 50°C~60°C power derating to 80%	
		Storage Temperature	-40°C~70°C	
		Relative Humidity	5~95%(no condensing)	
		Operation Altitude	<1000m; 1000m~3000m, power derating 1% per 100m rising	
	Interface	Indicator Lamp	Operation: Blue      Fault: Red	
		Communication	CAN	
	Mechanical	Size(W*H*D)	268mm*86mm*435mm	
		Weight	≤ 10kg	≤ 10.5kg

**Note:**

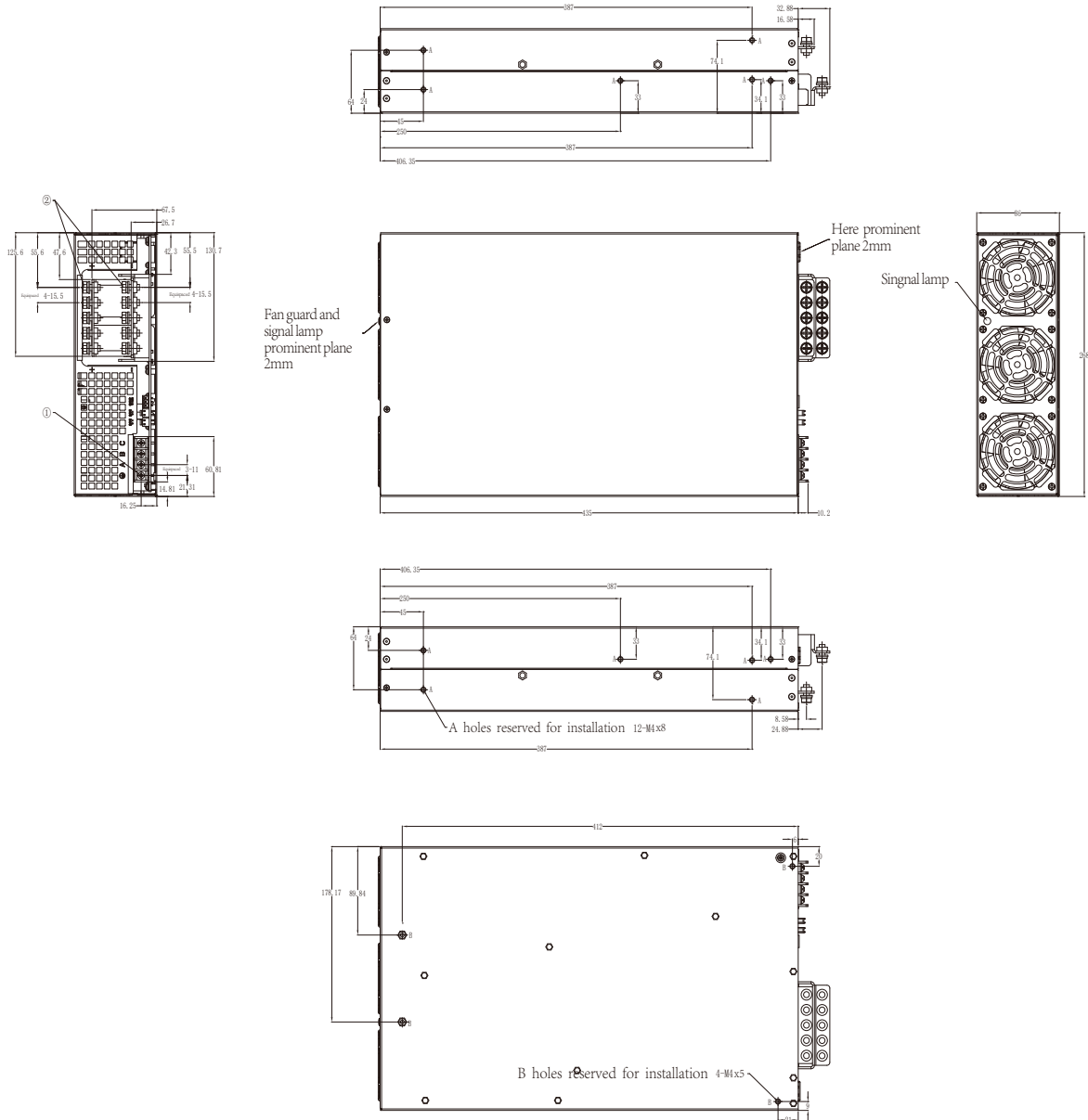
- ① DC side voltage exceeding 20VDC will cause power failure
- ② Shut down due to over temperature after overload



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### Dimension

#### • TPS-BM1512KTIF/TPS-BM1613K6TIF Installation Structure



#### • Identification explanation

4-M4  $\nabla$  5

↑ Hole depth 5mm  
 ↑ Metric thread size  
 Total 4

#### • Warning

1. The length of the screw shall not exceed the depth of the hole in the drawing when the screw is installed at the reserved hole position ( $\nabla$ ). Otherwise it will cause damage to the equipment.

Serial number	Type	Name	Specification	Quantity	Tightening torque
②	Output terminal fastening screws	GB907413-88 series cross slot hexagon head spring flat washer combination screws	M6X12	10pcs	7N·M
①	Input terminal fastening screw	Cross recessed pan head flat washer combination screw	M4X8.5	4pcs	1.5N·M

Dimensional tolerance (GB1804-M level)	0.5~6	±0.1	Unit	Proportion	Projection identification
	6~30	±0.2	mm	1:1	
	30~120	±0.3			
	>120	±0.5			