

# Bidirectional Power Module Specification

TPS-BM9016K5TIF





### 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: AC to DC 94%, DC to AC 92%
- Bidirectional high PF >0.99, low THDi <5%
- Bidirectional switch with seamless voltage, meeting the fast response requirements of test equipment
- Strong adaptability, adapt to unstable grids and harsh environments, no derating at 45°C
- Modular design, intelligent expansion, automatic parallel operation
- Perfect fault protection function
- Designed to comply with IEC62477-1 and EN55032 standards
- Can pass UL, CE, TUV certification

### Applications

- Battery module testing
- Cells formed in series
- Power bidirectional testing
- Energy recyclable power aging

### Profile

#### TPS-BM Three-phase MV 90V AC-DC BPM

TPS-BM three-phase medium voltage bidirectional power module 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 also provides high performances such as high reliability, strong adaptability of grids and environments, bidirectional seamless switching without voltage difference, high efficiency, high power density, high PF, low THDi, intelligent and so on.

### Specification

Product Model			TPS-BM9016K5TIF
AC to DC Direction	Rated Output Capacity		16500W
	AC Input	Wiring Mode	3Ph+PE
		Rated Voltage	380/400/415VAC
		Voltage Range	342~456VAC, full load; 323~342VAC, derating to 80%
		Frequency Range	50/60±5Hz adaptive control
		Input Current	≤32A
		THDi	<5% @380VAC, full load, power grid THDu ≤2%
		PF	0.99 @380VAC, full load, power grid THDu ≤2%
	DC Output	Rated Voltage	90VDC
		Rated Current	183.4A
		Voltage Accuracy	±1%
		Ripple Voltage	1.5V
		Peak Efficiency	94%

DC to AC Direction	Rated Input Capacity		15000W
	DC Input	Rated Voltage <sup>①</sup>	90VDC
		Rated Current	166.7A
	AC Output	Voltage Range	342~456VAC, full load; 323~342VAC, derating to 80%
		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	92%
Complete Machine	System	Power Direction	Bidirectional high frequency isolation
		Cooling System	Forced air cooling, intelligent control
		Air Flow	Front inlet and rear outlet ( front: fan; rear: terminal )
		Expandability	8
		Non-balance of Current Sharing	< 5%
	Environment	Operation Temperature <sup>②</sup>	-10°C~45°C full load, 45°C~60°C power derating to 80%
		Storage Temperature	-40°C~70°C
		Relative Humidity	5~95% (no condensing)
		Operation Altitude	0~1000m; 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

### Note:

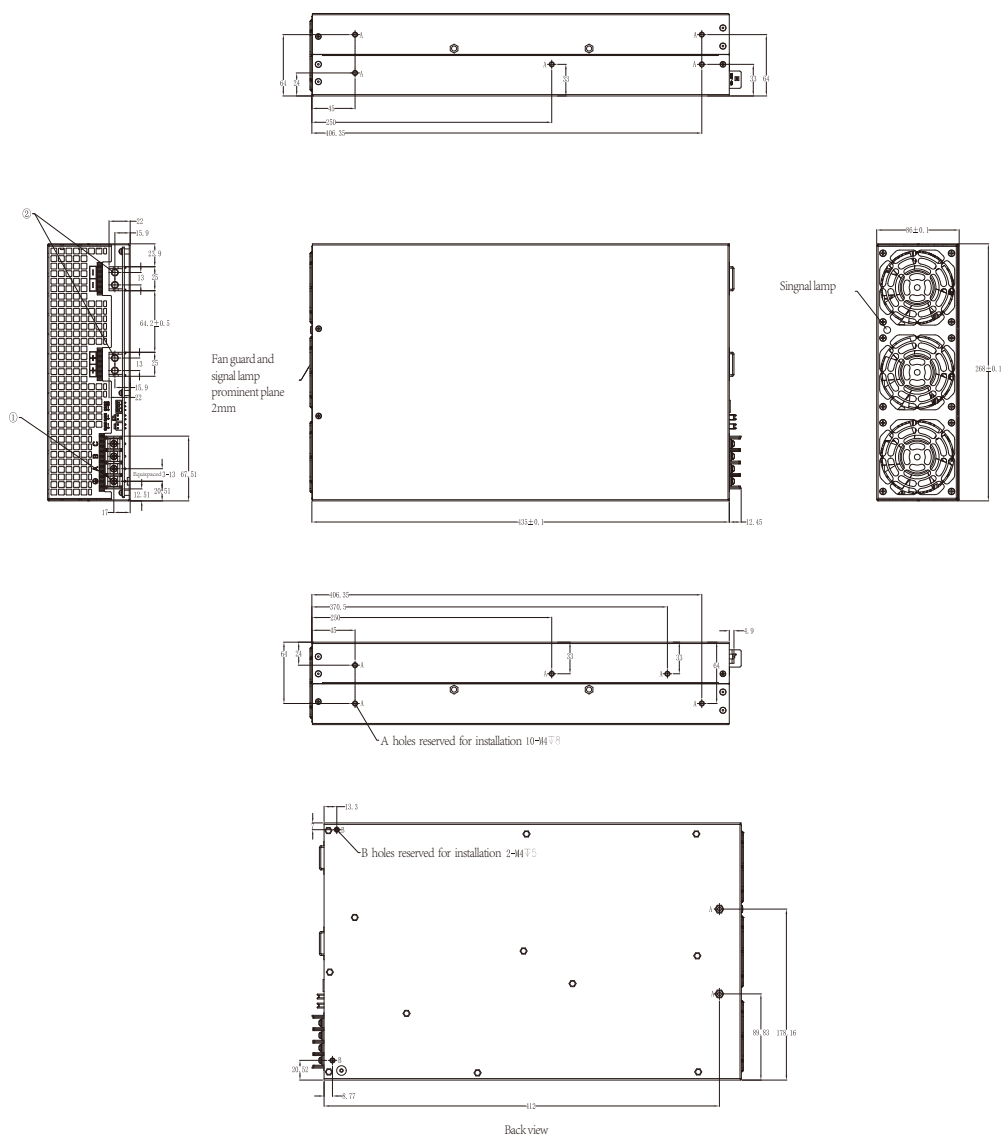
- ① DC side voltage exceeding 150VDC will cause power failure
- ② Shut down due to over temperature after overload



This electronic device must not be disposed of in the household waste at the end of its service life. For your return, there are free collection points for electrical appliances and, if necessary, additional points of acceptance for the reuse of the devices in your area. The addresses can be obtained from your city or communal administration. If the old electrical or electronic device contains personal data, you are responsible for deleting it before you return it. Further information: [www.elektrogesetz.de](http://www.elektrogesetz.de)


## Dimension

### • TPS-BM9016K5TIF Installation Structure



- Identification explanation


2-M4 $\nabla$ 5


 Hole depth 5mm  
 Metric thread size  
 Total 2

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	4pcs	2N·M
①	Input terminal fastening screw	Cross recessed pan head flat washer combination screw	M4X8.5	4pcs	1.5N·M

- 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 (▽) . Otherwise it will cause damage to the equipment.

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			