

Bidirectional Power Module Specification

TPS-BM142250/TPS-BM142400/TPS-BM142650





Features

- 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 93.5%, DC to AC 86%
- Bidirectional high PF >0.99, low THDi <5%
- Fast switching time <10ms between rectifier mode and inverter mode
- Excellent EMC, meeting EN55032 and other international standards
- 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
- Can pass UL, CE, TUV certification

Applications

- Cell formation and testing
- Power bidirectional testing
- Energy recyclable power aging

Profile

TPS-BM Single-phase LV AC-DC BPM

TPS-BM single-phase AC-DC BPM realizes bidirectional conversion of energy flow, and adopts mature soft switching technology, advanced control algorithm and excellent manufacturing. The module provides high performances such as high reliability, strong adaptability of grids and environments, less than 10ms of bidirectional switching, high efficiency, high power density, high PF, low THDi, intelligence.

Specification

Product Model		TPS-BM142250SIR	TPS-BM142400SI	TPS-BM142650SI(R)	
AC To DC Direction	Rated Output Capacity	2250W	2400W	2650W	
	AC Input	Wiring Mode	L+N+PE		
		Rated Voltage	220/230/240VAC		
		Voltage Range	176~264VAC		
		Frequency Range	50/60 ± 5Hz adaptive control		
		Input Current	≤15A	≤15A	≤17A
		THDi	<5% @220VAC, full load, power grid THDu ≤2%		
		PF	0.99 @220VAC, full load, power grid THDu ≤2%		
	DC Output	Rated Voltage	14VDC	14VDC	14VDC
		Rated Current	161A	171A	189A
Voltage Accuracy		0.5%			
Ripple Voltage		500mV	500mV	500mV	
Peak Efficiency		93.5%	91.5%	91.5%	

DC To AC Direction	Rated Input Capacity		1575W	1680W	1855W
	DC Input	Rated Voltage ^①	15VDC	15VDC	15VDC
		Rated Current	105A	112A	123.7A
	AC Output	Voltage Range	176~264VAC		
		Frequency Range	50/60 ± 5Hz adaptive control		
		THDi	<5% @220VAC, full load, power grid THDu ≤ 2%		
		PF	0.99 @220VAC, full load, power grid THDu ≤ 2%		
		Peak Efficiency	88%	88.5%	86%
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 8 units connected in parallel		
		Non-balance of Current Sharing	<5%		
	Environment	Operation Temperature ^②	10°C~45°C full load, 45°C~55°C power derating to 90% , 55°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	AC to DC: Blue DC to AC: Green Fault: Red		
	Mechanical	Size(W*H*D)	141mm*44mm*285mm		
		Weight	≤ 2.4kg		

Note:

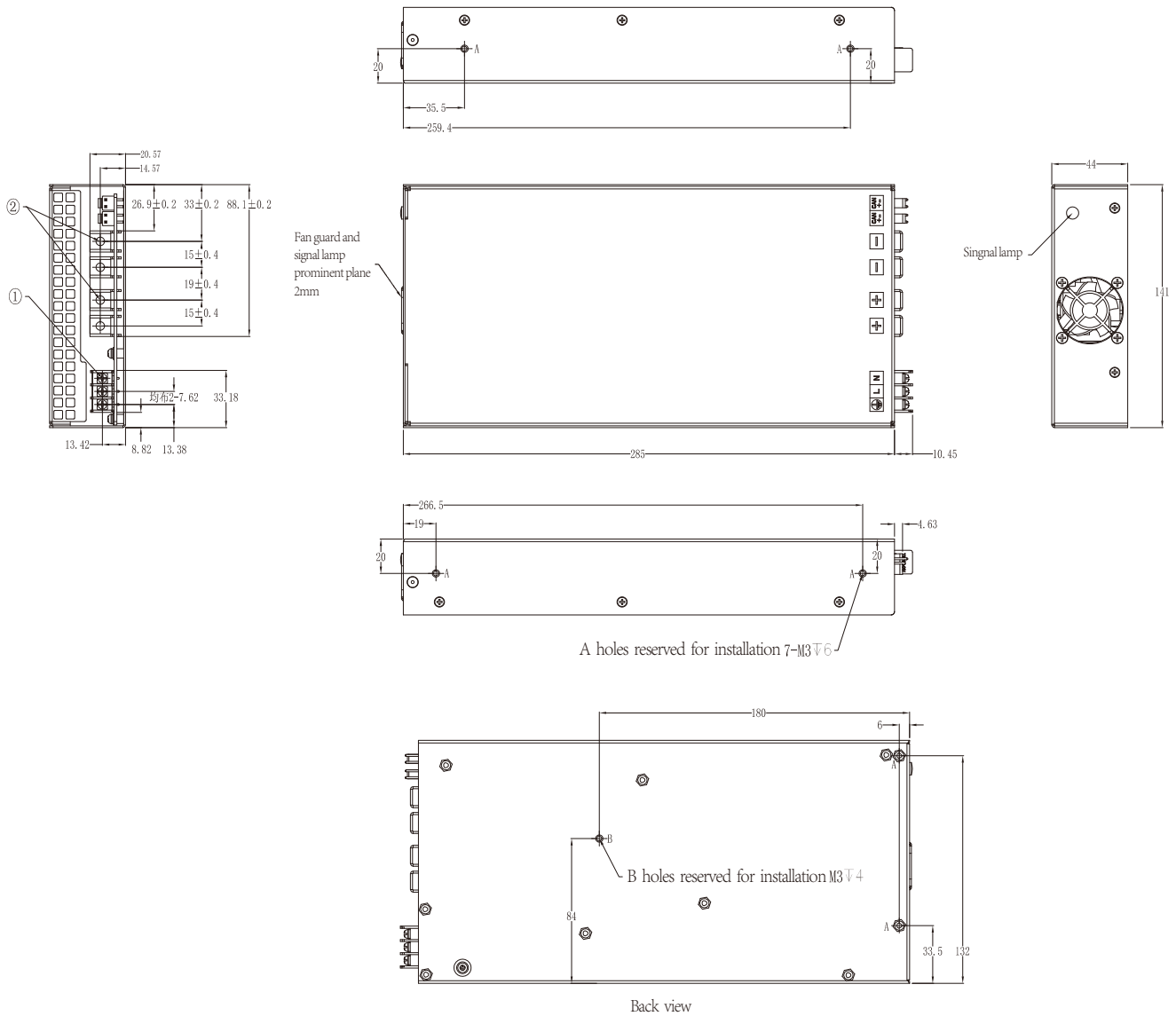
- ① DC side voltage exceeding 25VDC will cause power failure
- ② Shut down due to over temperature after overload



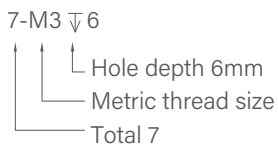
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Dimension

• TPS-BM142650SI(R) Installation Structure



• Identification explanation



• 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 (T). 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	M5X12	4pcs	1.5N·M
①	Input terminal fastening screw	Cross recessed pan head flat washer combination screw	M3X5.5	3pcs	1.5N·M

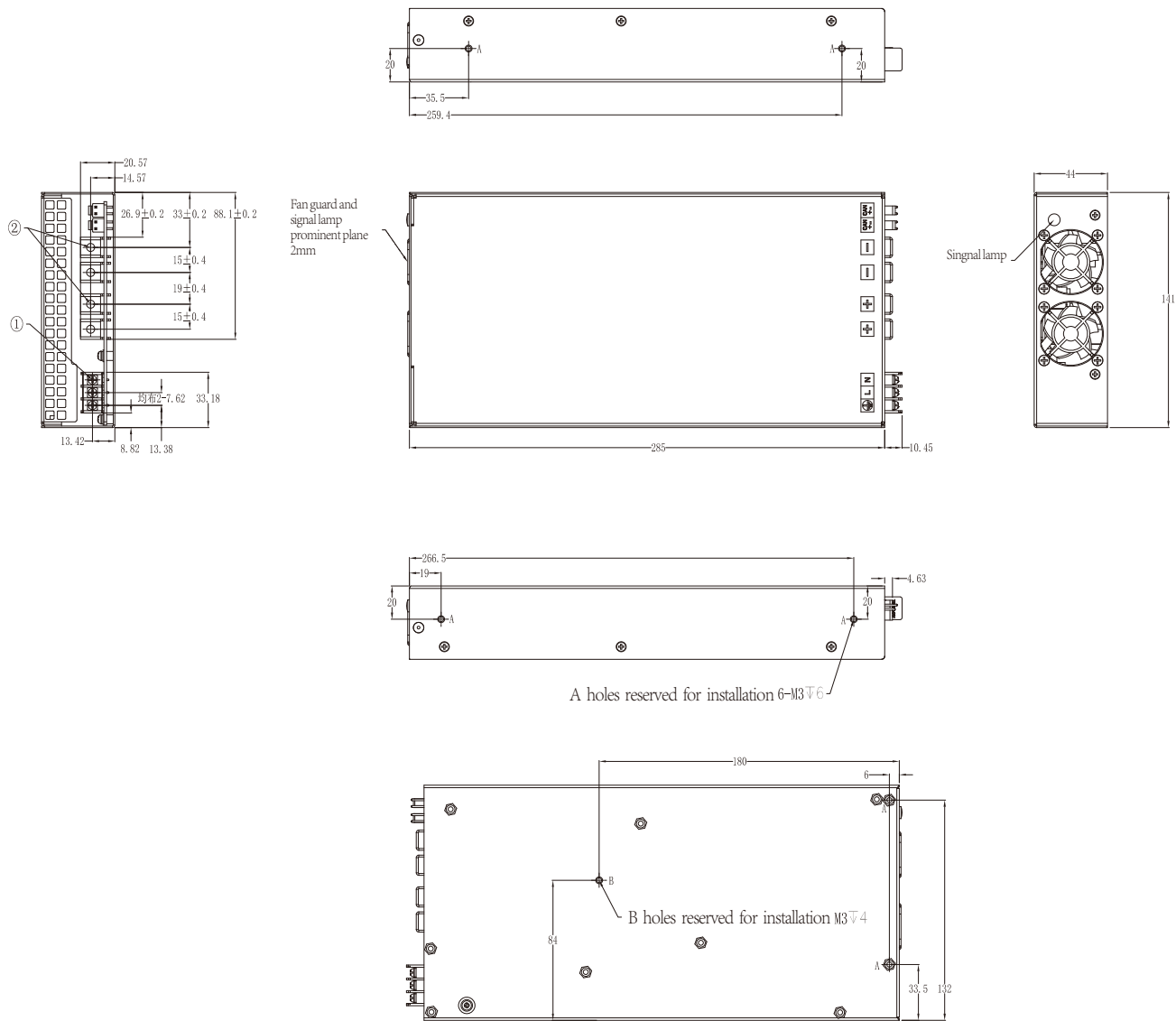
Dimensional tolerance (GB1804-M level)	0.5-6	±0.1	Unit	Proportion	Projection identification
	6-30	±0.2			
	30-120	±0.3			
	>120	±0.5			

mm

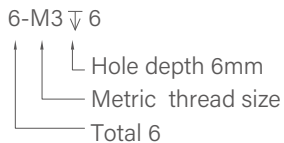
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Dimension

• TBM14-2250SIR/TBM14-2400SI Installation structure



• Identification explanation



• 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.

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	M5X12	4pcs	1.5N·M
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