TOTAL POWER SOLUTIONS

Bidirecitonal Power Module Specification

TPS-BM70053KTIF-S

TPS Company Video on Youtube
https://youtu.be/DTcA-IU2NWA

TPS-BM70053KTIF-S
Bidirecitonal Power Module Specification

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 96%, DC to AC 95%
- Bidirectional high PF >0.99, low THDi <5%
- Bidirectional fast swtiching time<2ms
- Strong adaptability, adapt to unstable grids and harsh environments, no derating at 45℃
- 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 PACK aging
- The cells are formed in series
- Energy recyclable power aging

Profile

TPS-BM Three-phase HV 700V AC-DC Seamless Switching BPM

TPS-BM three-phase high voltage 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 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, intelligence.

Specification

Product Model			TPS-BM70053KTIF-S
AC to DC Direction	Rated Output Capacity		53000W
	AC Input	Input Mode	3Ph+PE
		Rated Voltage	380/400/415VAC
		Voltage Range	342-460VAC, Full load; 304-342VAC, derating to 80%
		Frequency Range	50/60±5Hz adaptive control
		Input Current	94A Max
		THDi	<5% @400VAC, full load, power grid THDu ≤2%
		PF	0.99 @400VAC, full load, power grid THDu ≤2%
	DC Output	Rated Voltage	700VDC
		Rated Current	75.8A
		Voltage Accuracy	＜1%
		Ripple Voltage	⩽2%
		Peak Efficiency	96.0%@400VAC

DC to AC Direction	Rated Input Capacity		53000W
	DC Input	Rated Voltage	700VDC
		Rated Current	75.8A
	AC Output	Voltage Range	342-460VAC, Full load; 304-342VAC, derating to 80%
		Frequency Range	50/60±5Hz adaptive control
		THDi	<5% @400VAC, full load, power grid THDu ⩽2%
		PF	0.99 @400VAC, full load, power grid THDu ⩽2%
		Peak Efficiency	95.0%@400VAC
Complete Machine	System	Power Direction	Bidirectional
		Isolation Method	High-frequency isolation
		Cooling System	Forced air cooling, intelligent control
		Air Flow	Forward and rear air outlet (Front: fan side; Rear: Terminal face)
		Expandability	20
		Concatenation	-
		Non-balance of Current Sharing	＜5%
	Environment	Operation Temperature	-10°C~45°C full load, 45°C~60°C capacity derating to 80%①
		Storage Temperature	-40°C~70°C
		Relative Humidity	5~95% (no condesing)
		Operation Altitude	< 2000m full load; 2000m~3000m, Each 100m increase in altitude, output power decrease by 1%
	Interface	Indicator Lamp	Peration: Green, Alarm: Flashing Red, Fault: Red
		Communication	CAN/RS485
	Mechanical	Size (W*H*D)	435mm*86mm*600mm (Handle not included) 440mm*85mm*550mm(Handle included)
		Weight	⩽23kg

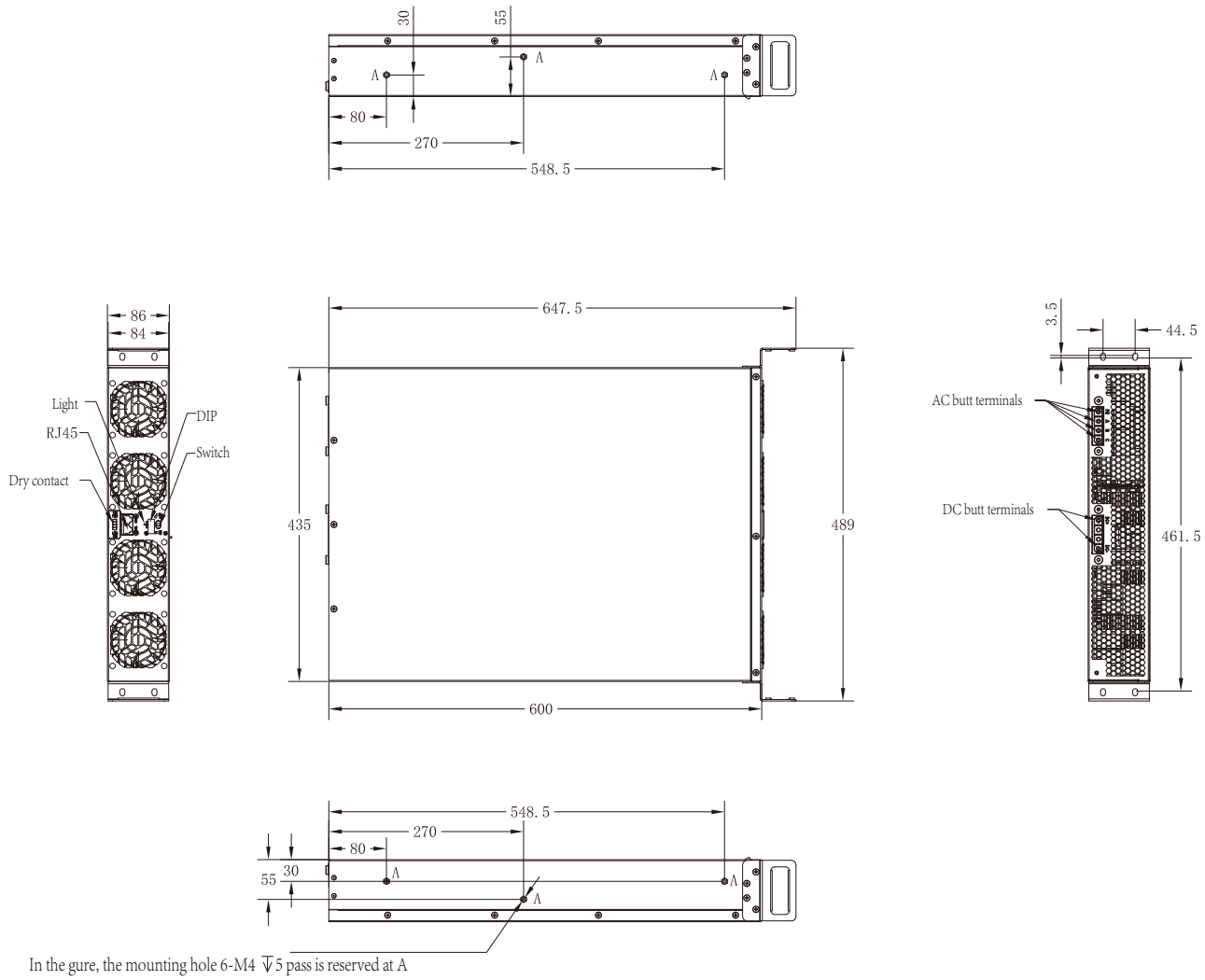
Note:

① Shut down due to over temperatuer afer 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 an be obtained from your city or cummunal administration. If the old electrical or electronic device contains personal data, you are esponsible for deleting it before you return it. Further information: www.elektrogesetz.de

Dimension

- TPS-BM70053KTIF-S Installation Structure



- Identification explanation

6-M4↧5

- The hole is 5mm deep
- Metric thread size
- There are 6 locations in total

- Warning

1.The length of the reserved hole mounting screw must not exceed the hole depth(↧) in the figure, otherwise it will cause damage to the device.

Dimensional tolerance (GB1804-M grade)	0.5~6	±0.1	Unit	Proportion	Projection ID
	6~30	±0.2	mm	/	
	30~120	±0.3			
	>120	±0.5			

Security considerations

Statement

In the event of any of the following situations , TEP is not responsible.

- Operate in harsh environments (power grid, input voltage, temperature, humidity, etc.) beyond those described in this manual.
- Any installation and use environment that exceeds the provisions of relevant international standards.
- Remove the cover without authorization, change the product or modify the software code.
- Equipment damage caused by abnormal natural environment.

Safe

- Do not place the device in an environment with flammable, explosive gas or smoke, large amounts of infrared radiation, organic solvents, and corrosive gases.
- Do not use water to clean internal or external electrical components of the device.
- Do not connect the safety Ultra Low Voltage (SELV) circuit terminal to the communication Network voltage (TNV) circuit terminal.
- Do not wear watches, bracelets, rings and other conductive objects on the wrist during operation.
- Special insulation tools must be used during operation.
- Torque wrench should be used to fix the screws, and double check with red and blue marks. After the installation personnel confirm that the screws are tightly screwed, paint a blue mark on the screws. After the inspectors confirm the tightening, paint red marks.
- Use an electric meter to measure the voltage at the contact point before touching any conductor surface or terminal to ensure that there is no voltage at the contact point or that the voltage is within the predicted range.

Equipment operating environment

- When the RMS of the mains voltage exceeds 475VAC, the power module may be damaged.
- When the DC input voltage exceeds 900VDC, the power module may be damaged.
- Avoid use in the following places:
  Avoid working in an environment containing flammable gas, corrosive gas, abnormal vibration and impact.
  Avoid working in an unsealed environment near the ocean (0 ~ 3.7km), indoor or semi-indoor environment with uncontrolled temperature and humidity.
  Avoid working in an environment containing large amounts of metal dust.
  Avoid working in salt spray environments.