

Specification for Solar Inverter

太阳能逆变器规格书

Model (型号) :Q*6248MHG

Document No. 文件编号		Effective Date 生效日	2025/11/25
Revision 版本	01	Pages 页数	12
Approved 批准	Checked 审核	Designed 设计制作	
		罗正文	

Amendment Records

文件修订履历

Rev No. (版本)	Description 修订内容	Amendment Pages 修订页次	Revised By 修订人	Amendment Date 修订日期
01	First Publish 初版发行	/	罗正文	2025/11/25

Techfine	广东泰琪丰电子有限公司 Guangdong Techfine Electronic Co., Ltd.	Document Revision 文件版本:01
DATE 日期: 2025/11/25		Page 页面 : 共 12 页 第 3 页

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1 . Preface (前言)

This Product Specification describes the technique requirements and precaution notes of Specification for Solar Inverter to be supplied to customer by Guangdong Techfine Electronic Co., Ltd.

本标准规范描述了广东泰琪丰电子有限公司生产的太阳能逆变器的技术要求和注意事项。

Note 1. This Product Specification is generally only a descriptive reference for the product, and does not make or imply a guarantee of the performance or quality of the product.The design/specifications of the machine are subject to modification without prior notice.Please contact Techfine for the latest information.

注释 1. 本标准规范一般仅是产品的描述性参考，并不构成或暗示对产品性能或质量的保证。机器的设计/规格如有更改，恕不另行通知。请联系 Techfine 获取最新信息。

2 . Description (说明)

2.1 Product 产品 : Solar Inverter 太阳能逆变器

2.2 Product Model 产品型号 : Q*6248MHG

2.3 Designation 名称 :

Q* 6248MHG

① ②③④⑤⑥

Item 项目	Note. 注释
①	The letter "Q*" defines Name of Product Series. "Q*"代表产品系列的名称。
②	The letter "62" defines Rated AC Output Power. "62"代表额定交流输出功率为 6200 W。
③	The letter "48" defines System Operating Voltage. "48"代表系统工作电压为 48 VDC。
④	The letter "M" defines Solar Controller. "M"代表太阳能控制器为 MPPT 控制器。
⑤	The letter "H" defines Controller High-voltage Version. "H"代表控制器高压版。
⑥	The letter "G" defines Support For Grid-Tie Operation. "G"代表具备并网运行。

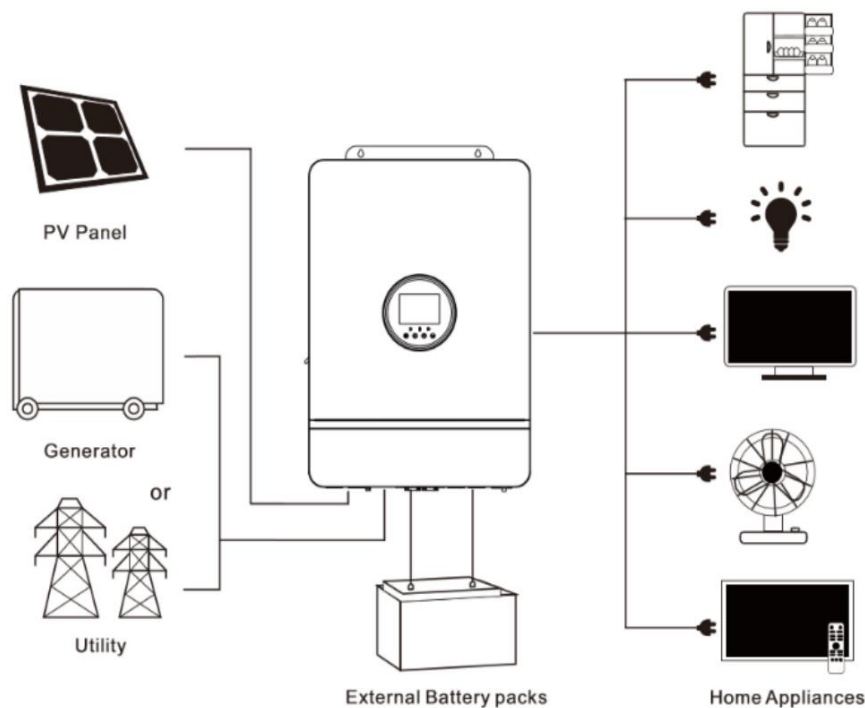
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3 . System architecture (系统架构)

The following figure shows the system application scenarios of the product. A complete system consists of the following parts: 下图显示了该产品的系统应用场景。一个完整的系统由以下部分组成：

- 1.PV Panel: light energy can be converted into DC energy, which can be charged by the inverter, or directly converted into AC power to power the load. 光伏组件：将光能转换为直流电能，可通过逆变器为电池充电，或直接逆变为交流电，为负载供电。
2. Utility or generator: connected to the AC input, can charge the battery while supplying the load. The system can also generally operate without mains power or generators when the cells and photovoltaic modules power the load. 市电或发电机：与交流电输入相连，可以在供应负载的同时为电池充电。当电池和光伏组件为负载供电时，该系统一般也可以在没有市电或发电机的情况下运行。
- 3.Battery: The function of the battery is to ensure the normal power supply of the system load in the case of insufficient photovoltaic and no mains power. 蓄电池：蓄电池的作用是在光伏不足和没有市电的情况下保证系统负载的正常供电。
4. Home Appliances: Various home and office loads, including refrigerators, lamps, televisions, fans, air conditioners, and other AC loads. 家庭负载：可以连接各种家庭和办公室负载，包括冰箱、灯具、电视、风扇、空调和其他交流负载。
5. Inverter: Energy conversion device for the entire system. 逆变器：整个系统的能量转换装置。

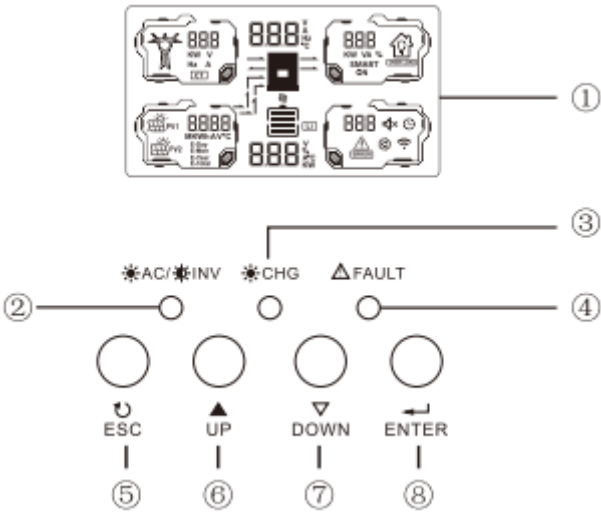
The actual application scenario determines the specific system wiring mode 实际应用场景决定了具体的系统布线



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4 . Product Appearance (产品外观)

4.1 LCD Screen (液晶显示屏)



Item 项目	Name 名称
①	LCD display 液晶显示器
②	AC Mode Indicator 市电指示灯/ Inverter Mode Indicator 逆变指示灯
③	Charging Indicator 充电指示灯
④	Alarming Indicator 报警指示灯
⑤	ESC 退出
⑥	UP 向上键
⑦	DOWN 向下键
⑧	ENTER 确认键

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5 . Working Condition (工作条件)

Q* series is limited to indoor use (protection level IP21). Before choosing a work location, please consider the following factors: Q*系列仅限于室内使用（防护等级 IP21），在选择工作地点之前，请用户考虑以下几点因素：

- Proper temperature(inverter can operate in the indoor environment of -10℃~50℃,but the ideal operating temperature is 0℃~25℃). 合适的温度(逆变器可在-10℃~50℃的室内环境中工作，但理想的工作温度为 0℃~25℃)。
- The installation height of the equipment should be easy for operation and maintenance, ensure that the equipment indicators, all labels are easy to view, and the terminals are easy to operate. 设备安装高度需便于操作维护，确保设备指示灯、所有标签便于查看，接线端子易于操作。
- The installation space shall meet the requirements of equipment ventilation and heat dissipation and the requirements of operation space. 安装空间需达到设备通风散热要求及操作空间要求。
- The protection level of the equipment meets the indoor installation, and the installation environment temperature and humidity shall be within the suitable range.设备防护等级满足室内安装，安装环境温湿度需在适合范围内。
- The installation position should be accessible to children and not installed in easy to touch positions. There may be high temperature on the surface of the equipment to prevent burns. Ensure that the equipment is installed horizontally and is not tilted or inverted. 安装位置需避开儿童可接触的范围，且避免安装在易触碰的位置。设备运行时表面可能存在高温，以防发生烫伤。确保设备水平安装，不可倾斜、倒置。
- The operating life and service life of the inverter are related to the working temperature. Energy storage units shall be installed at a temperature equal to or better than the ambient temperature.逆变器的运行寿命和使用寿命与工作温度有关。储能装置应安装在等于或优于环境温度的温度下。



6 . Storage Condition (储存环境)

- Place in a dust-free,dry and ventilated place.Keep away from corrosive gases and liquids.放置于无尘、干燥、通风处。远离腐蚀性气体和液体。 Ambient Temperature for storage:-15℃~60℃,20%-95%(no condensation). 储存的环境温度：-15℃~60℃，20%-95%无冷凝

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7 . Product Introduction (产品简介)

Q* series is a highly integrated solar inverter featuring a unified architecture design that combines photovoltaic power conversion, energy storage management, and grid-interactive charging capabilities in a single solution, delivering pure sinusoidal AC output.Utilizing a DSP-based control system with advanced algorithms, it offers high-speed response capability, exceptional reliability, and compliance with industrial standards.

Q*系列是一款高度集成化的太阳能逆变器，采用一体化架构设计，集光伏发电转换、储能管理及电网交互充电功能于一体，交流正弦波输出。它采用 DSP 控制，通过先进的控制算法，具有高响应速度、可靠性和工业标准的特点。

Features 特点

☆High power density patch design, the same power cost-effective, small volume.

高功率密度贴片设计，同功率性价比高，体积小。

☆Comprehensive 360° protection system (including short circuit, over-current, over-under voltage, overload, etc.) integrated with intuitive alarm functions ensures safe operation through sophisticated real-time protection and automatic switching mechanisms, enabling reliable unattended operation.

提供 360°全方位保护（包括短路、过电流、过欠压、过载等）与人性化报警功能，通过完善的在线保护及自动切换机制确保系统安全运行，实现无人值守。

☆Precise total load current detection through external Current Transformers (CTs) enables high-precision grid current control and protection.

通过外置电流互感器(CT)精准检测总负载电流，实现高精度并网电流控制与保护。

☆Features battery to grid feed in capability.

具备电池能量并网卖电功能。

☆Features grid peak shaving capability.

具备电网削峰功能。

Equipped with RS485 interface for BMS communication and RS232 interface for operational data monitoring, with compatibility for WIFI remote monitoring.

配备 RS485 接口，用于 BMS 通讯； 配备 RS232 接口，用于监控运行数据，兼容 WIFI 远程监控。

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8 . Product Parameter (产品参数)

Model 型号	Q*6248MHG		
Input 输入	Input Sources 输入制式		L+N+PE
	Rated Input Voltage 额定输入电压		220/230/240Vac
	Voltage Range 电压范围		90-280Vac±3V (APP Mode 正常模式) 170-280Vac±3V (UPS Mode UPS 模式)
	Frequency 频率范围		50Hz/60Hz(Auto Adaptive 自适应)
Output 输出	Output Voltage 输出电压		220/230/240Vac±5%
	Output Frequency 输出频率		50/60Hz±0.1%
	Output Waveform 输出波形		Pure Sine Wave (纯正弦波)
	Rated Capacity 额定功率	Battery Inverter 电池逆变	6200W
		PV Inverter 光伏逆变	6200W
	Peak Power 峰值功率		12400VA
	Over Load Ability 过载能力		Battery Mode 电池模式 : 11s@110%~150% Load;2s@150%~200% Load;400ms@> 200% Load
	Peak Efficiency(battery Mode) 峰值效率 (电池模式)		>94%
Grid-Tie Operation 并网运行	Output Voltage 输出电压		220/230/240Vac
	Output Current 输出电流		26.9A
	Grid-Tie Voltage Range 馈入电网电压范围		100-280Vac
	Grid-Tie Frequency Range 馈入电网频率范围		49-51/59-61±1Hz
	功率因数范围		>0.99
	最大转换效率 (DC/AC)		98%
Display 显示	LCD Screen 液晶显示屏		Display Running Mode/Loads/Input Output etc 可显示运行模式/负载/输入/输出等

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Model 型号	Q*6248MHG			
Battery 电池	Battery Voltage 额定电压		48Vdc	
	Adjustable 可设	Constant Charging Voltage 恒压充电电压	56.4Vdc	
		Floating Charging Voltage 浮充充电电压	54Vdc	
Chargers 充电器	PV Charging Mode PV 充电方式		MPPT	
	MAX PV Input Power PV 最大输入功率		8500W	
	MAX PV input voltage 最大光伏输入电压		500Vdc	
	MPPT Tracking Range MPPT 跟踪范围		60~450Vdc	
	Best PV voltage 最佳 Vmp 电压		360~430Vdc	
	MAX Rated PV Input Current 最大额定 PV 输入电流		27A	
	MAX Pulse PV Input Current 最大脉冲 PV 输入电流		36A	
	MAX PV Charging Current 最大 PV 充电电流		120A	
	MAX AC Charging Current 最大市电充电电流		100A	
	MAX Charging Current 最大充电电流		120A	
Interface 接口	RS232		Baud Rate 2400 波特率 2400	
	Communication Port 扩展插槽通讯接口		Lithium Battery BMS Communication Card,Wifi Card. 锂电池 BMS 通信卡、WIFI 卡等	
	Parallel Connect Interface 并机接口		No With Parallel 无并机功能	
Environmen ts 环境参数	Operating Temperature 运行环境温度		-10~50℃	
	Humidity 运行环境湿度		20%~95%(Non-condensing) (无凝露)	
	Storage Temperature 储存温度		-15~60℃	
	Altitude 海拔高度		The altitude should not exceed 1000m. Above 1000m, derating applies, with a maximum of 4000m, referring to IEC110040. 海拔高度不应超过 1000m ,1000m 以上降额 ,最高 4000m , 参考 IEC110040	
	Noise 噪音		≤50db	

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9 . Precautions and Safety Instructions (安全守则)

Follow the warnings and instructions indicated in the product and accompanying printed matter.
请遵守产品和随附印刷品中的警告和说明。

The previous power supply must be disconnected before wiring.After the input power is cut off,there will still be high voltage inside the Inverter supply. Do not open the chassis to touch the internal components,to avoid injury to the operator and the product.

接线前必须断开原电源。在输入电源被切断后，逆变器电源内部仍会有高压。请勿打开机箱接触内部部件，以免对操作人员和产品造成伤害。

The installed cables must meet the requirements.Please do not overload the cables,Avoid fire and electric shock accidents.
安装的线缆必须符合要求。请勿使电缆过载，以免发生火灾和触电事故。

10 . Warranty (质量保证)

The warranty period of Solar Inverter is made according to business contract. However, even though the problem occurs within this period, Techfine won’ t replace a new Solar Inverter for free as long as the problem is not due to the failure of Techfine manufacturing process or is due to customer’ s abuse or misuse.

自出货之日起，太阳能逆变器的保质期按业务合同规定。然而，即使问题发生在这段时间内，只要问题不是由于泰琪丰公司制造工艺问题或由于客户滥用或误用造成的质量问题，泰琪丰公司不承诺免费更换新的太阳能逆变器。

The Company shall not be liable for any damage caused by: 本公司对以下原因造成的损害不承担责任：

- 1.Damage caused by improper use or use in the wrong place. 因使用不当或在错误地点使用而造成的损坏。
2. The open-circuit voltage of the photovoltaic module exceeds the maximum allowable voltage. 光伏组件的开路电压超过最大允许电压。
3. Damage caused by the operating temperature exceeding the limit operating temperature range 工作温度超过限制的工作温度范围而造成的损坏。
4. Unauthorized personnel shall remove and repair the inverter. 未经授权的人员对逆变器进行拆卸和维修。
5. Damage caused by force majeure: damage during transportation or handling of the inverter. 不可抗力造成的损坏：在运输或处理逆变器过程中的损坏。

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11 . Consultation (技术咨询)

As to the obscurity, contact the following:

Address: Guangdong Techfine Electronic Co., Ltd.—No. 6 Foluo Road, Luo Village, Shishan Town, Nanhai District, Foshan City

Tel No.:

Fax No.:

Website:

如有疑问，请按以下方式咨询：

厂址：广东泰琪丰电子有限公司 - 佛山市南海区狮山镇罗村佛罗路 6 号

电话：

传真：

网址：