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Specification for Solar Inverter Power

太阳能逆变器规格书

Model(型号):G*11048SMH

Document No. 文件编号		Effective Date 生效日	2024/12/20
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		罗正文	

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Amendment Records

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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: G*11048SMH

2.3 Designation 名称:

G* 11048SMH

① ②③④⑤⑥

Item项目	Note. 注释
①	The letter "G*" defines Name of Product Series. "G*"代表产品系列的名称。
②	The letter "110" defines Rated AC Output Power. "110"代表额定交流输出功率为11000 W。
③	The letter "48" defines System Operating Voltage. "48"代表系统工作电压为48 VDC。
④	The letter "S" defines Enhanced Version. "S"代表增强版。
⑤	The letter "M" defines Solar Controller. "M"代表太阳能控制器为MPPT控制器。
⑥	The letter "H" defines High-Voltage Version. "H"代表高压版。

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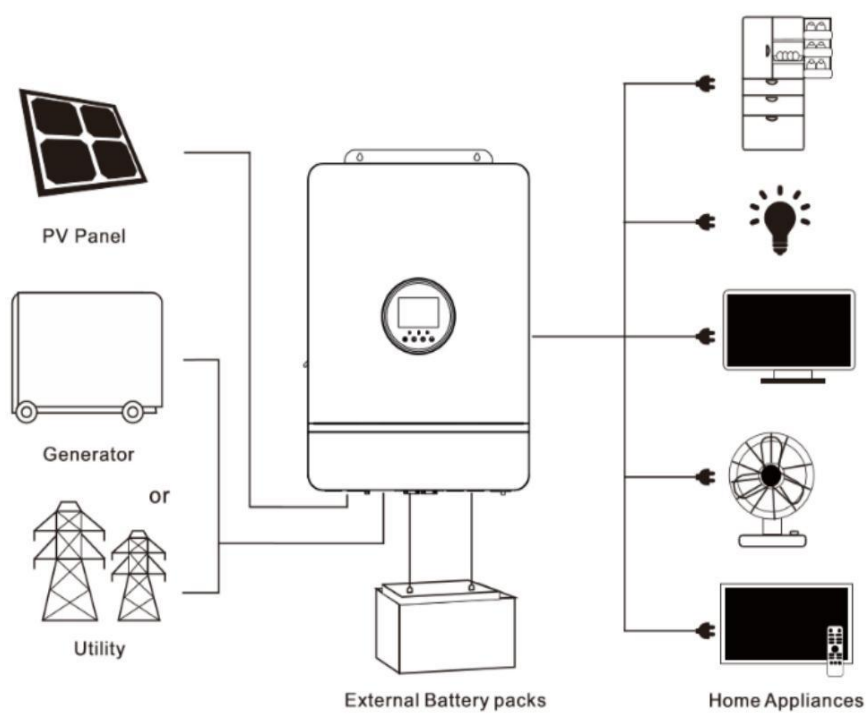
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3. System architecture(系统架构)

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方式。



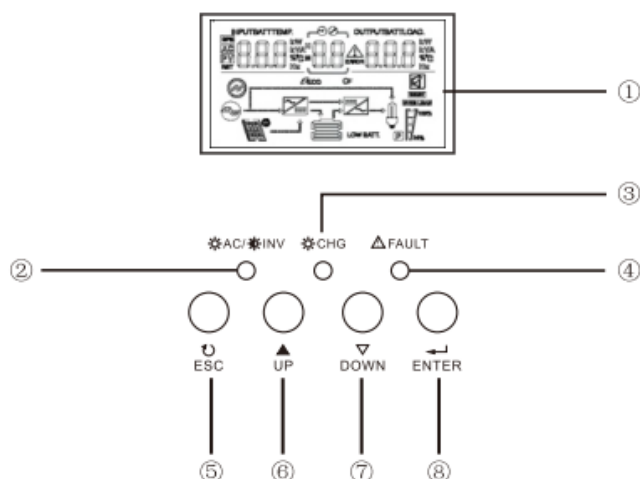
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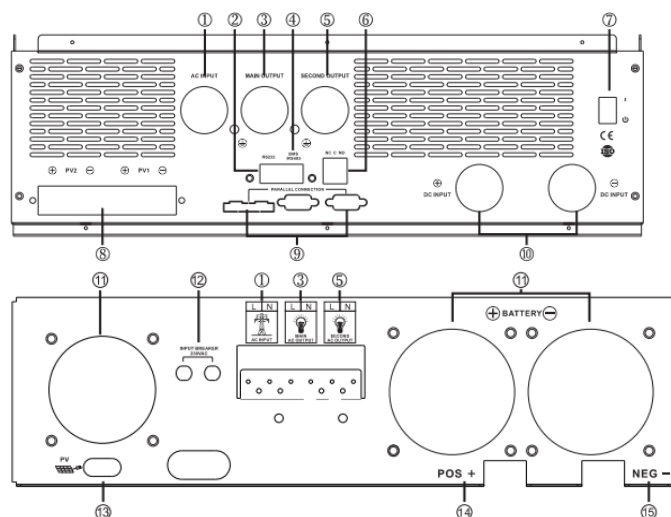
Item项目	Name名称
①	LCD display 液晶显示器
②	AC Mode Indicator 市电指示灯/ Inverter Mode Indicator 逆变指示灯
③	Charging Indicator 充电指示灯
④	Alarming Indicator 报警指示灯
⑤	ESC 退出
⑥	UP 向上键
⑦	DOWN 向下键
⑧	ENTER 确认键

4. Product Appearance(产品外观)

4.1 LCD Screen(液晶显示屏)



4.2 Back Panel(后板)



Item项目	Name名称	Item项目	Name名称
①	AC Input 交流输入	②	RS232 Communication Port RS232通信端口
③	Main output 交流主输出	④	BMS/RS485 Communication Port BMS/RS485通信端口
⑤	Second Output 交流第二输出	⑥	Dry Contact 干接点
⑦	Power ON/OFF Switch 电源开关	⑧	Solar Panel Input 太阳能板输入
⑨	Parallel connection 并机端口	⑩	Battery Input 电池输入
⑪	Fan 风扇	⑫	Input Protect 输入无熔丝开关
⑬	PV Input 光伏输入	⑭	Battery Terminal Positive 正极电池端子
⑮	Battery Terminal Negative 负极电池端子	⑯	Output ground wire 输出接地端子

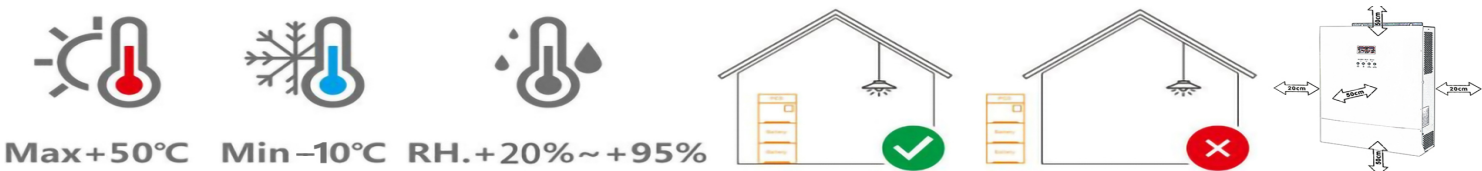
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5. Working Condition(工作条件)

G* series is limited to indoor use (protection level IP20). Before choosing a work location, please consider the following factors: G*系列仅限于室内使用(防护等级IP20), 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°C~50°C,but the ideal operating temperature is 0°C~25°C). 合适的温度(逆变器可在-10°C~50°C的室内环境中工作, 但理想的工作温度为0°C~25°C)。
- 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°C~60°C,20%-95%(no condensation). 储存的环境温度:-15°C~60°C, 20%-95%无冷凝

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7. Product Introduction(产品简介)

G* series is a new type of photovoltaic energy storage inverter control inverter integrating photovoltaic energy storage & mains charging and energy storage, with ac sine wave output. It uses the DSP control, through the advanced control algorithm, with high response speed, reliability, and industrial standard characteristics.

G*系列是一种集光伏储能&市电充电和储能于一体的新型光伏储能逆变控制逆变器，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。

☆Support connection of multiple types of energy storage batteries, including lead-acid batteries and lithium-ion batteries.

支持铅酸电池和锂离子电池等多种类型的储能电池的连接。

☆LCD large screen dynamic flow chart design, easy to understand the system data and running state.

LCD大屏幕动态流程图设计，便于了解系统数据和运行状态。

☆360-degree protection with complete short-circuit protection, over-current protection, over-under-voltage protection, over-load protection and other functions.

360°保护，具有完整的短路保护、过电流保护、过欠压保护、过载保护等功能。

☆User-friendly alarm function and comprehensive online protection feature ensure safe operation of the system during use, with automatic switching for unattended operation.

人性化的报警功能和完善的在线保护功能，确保系统在使用中的安全运行，自动切换，可实现无人值守。

☆Stable performance,Security and Reliable,long service life.

性能稳定，安全可靠，使用寿命长。

☆Pure sinusoidal output, strong load capacity, low noise, high conversion efficiency.

输出纯正弦波，带载能力强，工作噪声低，转换效率高。

☆With its own BMS communication function, no additional cost. Communicate with BMS board using 485; compatible generator self-start, RS232 communication and WIFI.

自带BMS通讯功能，无需额外增加成本。使用485方式与BMS板通讯；兼容发电机自启、RS232通讯、WIFI。

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8. Product Parameter(产品参数)

Model型号	G*11048SMH		
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 Range 频率范围		50/60Hz(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	11000W
		PV Inverter 光伏逆变	12000W
	Peak Power 峰值功率		22000VA
	Over Load Ability 过载能力		Battery Mode电池模式: 11s@110%~150% Load;2s@150%~200% Load;400ms@>200% Load
Grid-Tie Operation 并网运行	Transfer Time(adjustable) 切换时间(可设)		Computers计算机(UPS Mode UPS模式)10ms Appliance家用电器(APP Mode APP模式)20ms.
	Output Voltage 输出电压		220/230/240Vac
	Output Current 输出电流		47.8A
	Grid-Tie Voltage Range 馈入电网电压范围		195-253Vac
	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%	

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Model型号	G*11048SMH		
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*2
	MAX PV Input Power PV最大输入功率		7500W*2
	Maximum PV Input Voltage 最大光伏输入电压		500Vdc
	Maximum PV Input Current 最大光伏输入电流		27A/27A
	MPPT Tracking Range MPPT跟踪范围		90~450Vdc
	Best PV Voltage 最佳Vmp电压		360~430Vdc
	MAX PV Charging Current 最大PV充电电流		150A
	MAX AC Charging Current 最大市电充电电流		150A
	MAX Charging Current 最大充电电流		150A
Display 显示	LCD Display LCD显示		Display Running Mode/Loads/Input Output etc 可显示 运行模式/负载/输入/输出等
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, Dry Contact. 锂电池BMS通信卡、WIFI卡、干接点卡等
	Parallel Connect Interface 并机接口		With Parallel(Grid-Tie) 并机(网)功能
Environment s环境参数	Operating Temperature 运行环境温度		-10℃~50℃
	Operating 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 IEC62040.海拔高度不应超过1000m, 1000m以上降额, 最 高4000m, 参考IEC62040
	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:
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传真:
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