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V0.3

R6 series

ROOFTOP SOLAR INVERTER

user manual

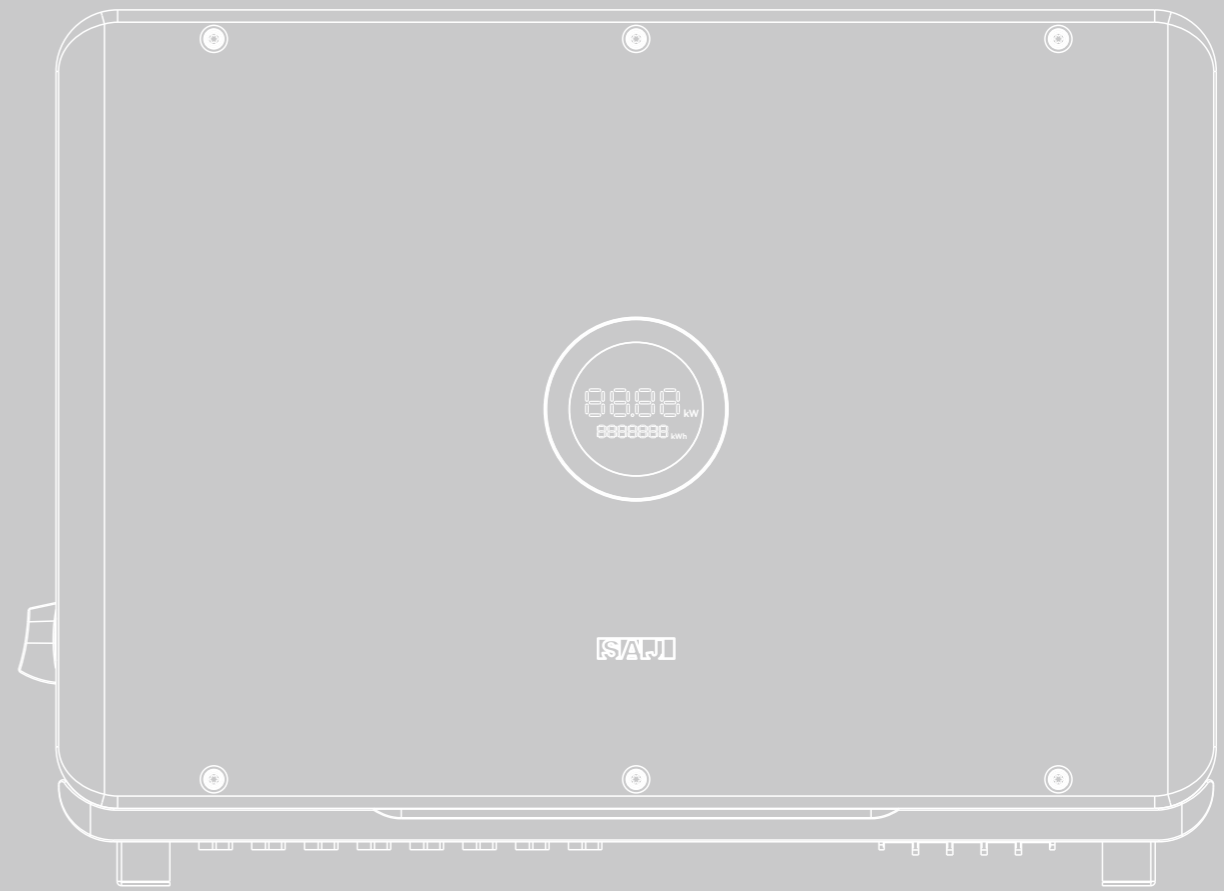


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1.

SAFETY precautions



1.1 Scope of Application

This User Manual describes instructions and detailed procedures for installing, operating, maintaining, and troubleshooting of the following SAJ on-grid inverters:

R6-15K-T2-32, R6-17K-T2-32, R6-20K-T2-32, R6-22K-T2-32, R6-25K-T2-32
 R6-25K-T3-32, R6-30K-T3-32, R6-33K-T3-32, R6-36K-T3-32
 R6-40K-T4-32, R6-50K-T4-32

Please keep this manual all time available in case of emergency.

1.2 Safety

1.2.1 Safety Instructions



DANGER

· DANGER indicates a hazardous situation, which, if not avoided, will result in death or serious injury.



WARNING

· WARNING indicates a hazardous situation, which, if not avoided, can result in death or serious injury or moderate injury.



CAUTION





· CAUTION indicates a hazardous condition, which, if not avoided, can result in minor or moderate injury.




NOTICE

· NOTICE indicates a situation that can result in potential damage, if not avoided.


1.2.2 Explanations of Symbols

Symbol	Description
	Dangerous electrical voltage This device is directly connected to public grid, thus all work to the inverter shall only be carried out by qualified personnel.
	Danger to life due to high electrical voltage! There might be residual currents in inverter because of large capacitors. Wait 5 minutes before you remove the front lid.
	Notice, danger! This is directly connected with electricity generators and public grid.
	Danger of hot surface The components inside the inverter will release a lot of heat during operation. Do not touch metal plate housing during operating.
	An error has occurred Please go to Chapter 6 "Troubleshooting" to remedy the error.
	This device SHALL NOT be disposed of in residential waste Please go to Chapter 7 "Recycling and Disposal" for proper treatments.
	Without Transformer This inverter does not use transformer for the isolation function.
	CE Mark With CE mark & the inverter fulfills the basic requirements of the Guideline Governing Low-Voltage and Electro-magnetic Compatibility.
	CQC Mark The inverter complies with the safety instructions from China's Quality Center.
 <small>ATTENTION! Risk of electric shock! Only authorized personnel are allowed to do disassembly, modification or maintenance. Any resulting defect or damage (device/person) is not covered by SAJ guaranty.</small>	No unauthorized perforations or modifications Any unauthorized perforations or modifications are strictly forbidden, if any defect or damage (device/person) occurred, SAJ shall not take any responsibility for it.

1.2.3 Safety Instructions

 **DANGER**


- There is possibility of dying due to electrical shock and high voltage.
- Do not touch the operating component of the inverter; it might result in burning or death.
- To prevent risk of electric shock during installation and maintenance, please make sure that all AC and DC terminals are plugged out.
- Do not touch the surface of the inverter while the housing is wet, otherwise, it might cause electrical shock.
- Do not stay close to the inverter while there are severe weather conditions including storm, lightning, etc.
- Before opening the housing, the SAJ inverter must be disconnected from the grid and PV generator; you must wait for at least five minutes to let the energy storage capacitors completely discharged after disconnecting from power source.

 **WARNING**

- The installation, service, recycling and disposal of the inverters must be performed by qualified personnel only in compliance with national and local standards and regulations.
- Any unauthorized actions including modification of product functionality of any form may cause lethal hazard to the operator, third parties, the units or their property. SAJ is not responsible for the loss and these warranty claims.
- The SAJ inverter must only be operated with PV generator. Do not connect any other source of energy to the SAJ inverter.
- Be sure that the PV generator and inverter are well grounded in order to protect properties and persons.

 **CAUTION**

- The solar inverter will become hot during operation. Please do not touch the heat sink or peripheral surface during or shortly after operation.
- Risk of damage due to improper modifications.

 **NOTICE**

- Public utility only.
- The solar inverter is designed to feed AC power directly to the public utility power grid; do not connect AC output of the inverter to any private AC equipment.

2.

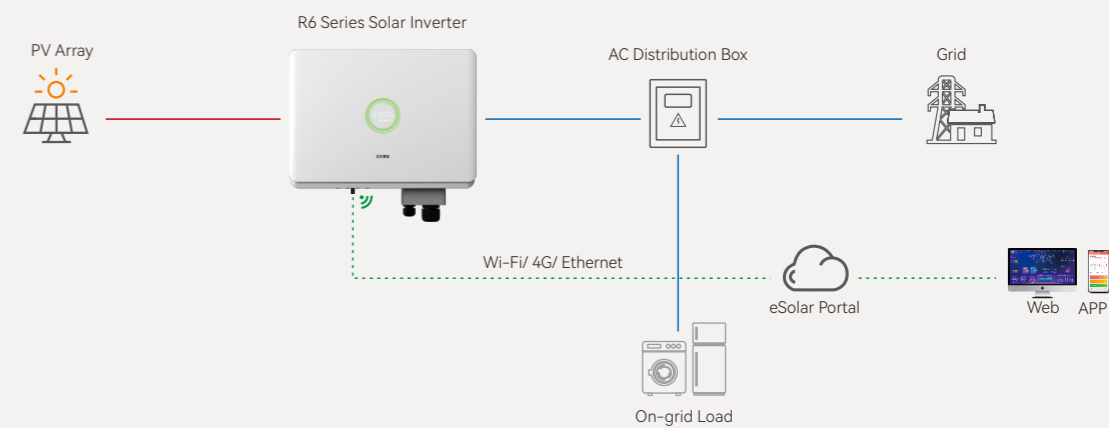
PRODUCT
overview

R6 series

R6-XK-TX-32 products are grid-tied three phase inverters without transformers, and the inverters are important components of grid-tied solar power systems.

The R6 inverter converts the DC generated by solar panels into AC which is in accordance with the requirements of public grid and send the AC into the grid, Figure 2.1 shows the structural diagram of the typical application system.

Figure 2.1
System overview



2.1 Specification for Product Model

R6 - XK - TX - 32
 ① ② ③ ④

- ① R6 represents for product name.
- ② XK represents rated power XkW of inverter, for example 4K means 4kW.
- ③ T means three phase; X represents the inverter has the function of X MPP trackers.
- ④ 32 means that max. DC input current of per MPP tracker is 32A

2.2 Appearance

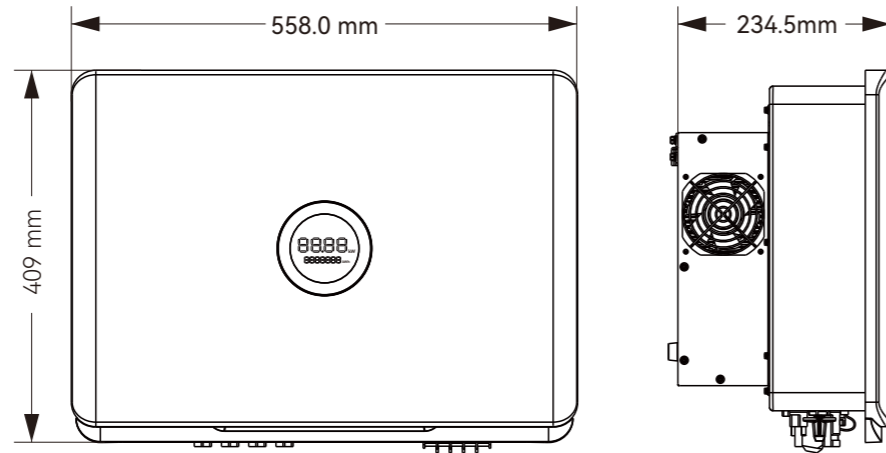


Figure 2.2
 Dimensions of
 R6-15K/17K/20K/22K/25K-T2-32

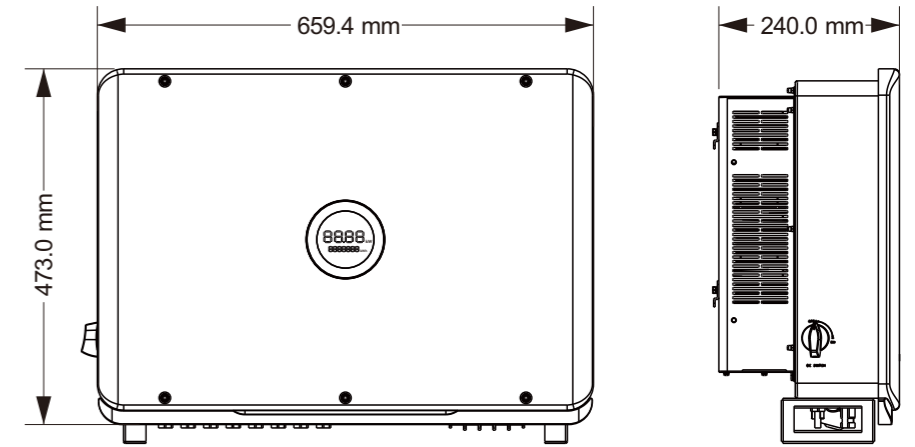


Figure 2.3
 Dimensions of
 R6-25K/30K/33K/36K-T3-32

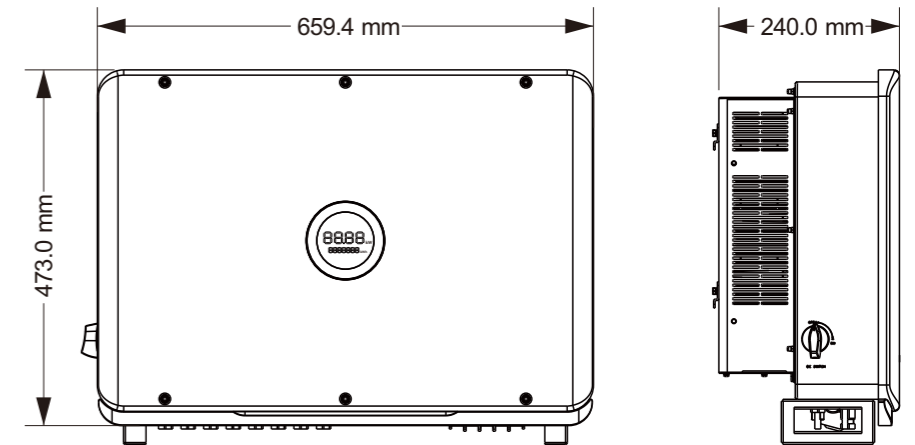


Figure 2.4
 Dimensions of
 R6-40K/50K-T4-32

2.3 Datasheet

R6-15K/17K/20K/22K/25K-T2-32

Model	R6-15K-T2-32	R6-17K-T2-32	R6-20K-T2-32	R6-22K-T2-32	R6-25K-T2-32
Input (DC)					
Max. PV Array Power [Wp]@STC	22500	25500	30000	33000	37500
Max. Input Voltage [V]	1100				
MPP Voltage Range [V]	180-1000				
Nominal Input Voltage [V]	600				
Start-up Voltage [V]	200				
Max. Input Current [A]	32/32				
Max. Short-Circuit Current[A]	38.4/38.4				
Number of MPP Trackers	2				
Number of Strings per MPP Tracker	2/2				
Output (AC)					
Rated AC Output Power [W]	15000	17000	20000	22000	25000
Max. AC Output Power [VA] *1	16500	18700	22000	24200	27500
Rated AC Output Current [A]@230Vac	21.7	24.6	29	31.9	36.2
Max. AC Output Current [A]	25.0	28.3	33.3	36.7	41.7
Nominal AC Voltage/ Range [V]	3L+N+PE, 220/380, 230/400, 240/415; 180-280/312-485				
Nominal AC Grid Frequency/ Range [Hz]	50, 60/44-55, 54-65				
Total Distortion Harmonic [THDi]	< 3%				
Power Factor	0.8 leading ~ 0.8 lagging				
Feed-in Phases/AC Connection Phases	3/3				
Efficiency					
Max. Efficiency	98.8%				
Euro Efficiency	98.5%				
Protection					
DCI Monitoring	Integrated				
GFCI Monitoring	Integrated				
Grid Monitoring	Integrated				
AC Grounding Detection	Integrated				
AC Short-Circuit Protection	Integrated				
DC Insulation Resistance Detection	Integrated				
DC Surge Protection	Type III				
AC Surge Protection	Type III				

Model	R6-15K-T2-32	R6-17K-T2-32	R6-20K-T2-32	R6-22K-T2-32	R6-25K-T2-32
Anti-islanding Protection	AFD				
AFCI Protection	Optional				
Interface					
AC Connection	Terminal Block				
DC Connection	MC4				
Display	LED+APP (Bluetooth)				
Communication Port	RS232(USB)+RS485(RJ45)+DRM(RJ45)				
Communication Mode	Wi-Fi/Ethernet/4G				
Load Monitoring	24/7 (Optional)				
General Data					
Topology	Transformerless				
Nighttime Power Consumption [W]	<0.6				
Operating Temperature Range	-40°C ~ +60°C				
Cooling Method	intelligent fan Cooling				
Ambient Humidity	0% ~ 100% non-condensing				
Max. Operating Altitude [m]	4000m (>3000m power derating)				
Noise [dBA]	<50				
Ingress Protection	IP65				
Mounting	Rear Panel				
Dimensions [H*W*D] [mm]	409*558*234				
Weight [kg]	23.7				
Warranty [Year]	5 (Standard)/10/15/20/25 (Optional)				
Certifications	IEC/EN62109-1/2, EN61000-6-1/2/3/4, IEC61683, IEC60068-2, IEC62116, IEC61727, PEA/MEA, VDE0126-1-1/A1, CEI 0-21, VDE-AR-N 4105, AS/NZS4777.2, CQC NB/T 32004, G98/G99, NBR 16149, NBR 16150, C10/11, RD1669, UNE206006, UNE206007, EN50438				

R6-25/30K/33K/36K-T3-32, R6-40K/50K-T4-32

Model	R6-25K-T3-32	R6-30K-T3-32	R6-33K-T3-32	R6-36K-T3-32	R6-40K-T4-32	R6-50K-T4-32
Input (DC)						
Max. PV Array Power [Wp]@STC	37500	45000	49500	54000	60000	75000
Max. Input Voltage [V]	1100					
MPP Voltage Range [V]	180-1000					
Nominal Input Voltage [V]	600					
Start-up Voltage [V]	200					
Max. Input Current [A]	32/32/32			32/32/32/32		
Max. Short-Circuit Current[A]	38.4/38.4/38.4			38.4/38.4/38.4/38.4		
Number of MPP Trackers	3			4		
Number of Strings per MPP Tracker	2/2/2			2/2/2/2		
Output (AC)						
Rated AC Output Power [W]	25000	30000	33000	36000	40000	50000
Max. AC Output Power [VA] *1	27500	33000	36300	39600	44000	50000
Rated AC Output Current [A]@230Vac	37.9	43.5	47.8	52.2	58	72.5
Max. AC Output Current [A]	41.7	50	55	60	66.7	75.8
Nominal AC Voltage/ Range [V]	3L+N+PE, 220/380, 230/400, 240/415; 180-280/312-485					
Nominal AC Grid Frequency/ Range [Hz]	50, 60/44-55, 54-65					
Total Distortion Harmonic [THDi]	< 3%					
Power Factor	0.8 leading ~ 0.8 lagging					
Feed-in Phases/AC Connection Phases	3/3					
Efficiency						
Max. Efficiency	98.8%					
Euro Efficiency	98.5%					
Protection						
DCI Monitoring	Integrated					
GFCI Monitoring	Integrated					
Grid Monitoring	Integrated					
AC Grounding Detection	Integrated					
AC Short-Circuit Protection	Integrated					
DC Insulation Resistance Detection	Integrated					
DC Surge Protection	Type II					
AC Surge Protection	Type III					



Model	R6-25K-T3-32	R6-30K-T3-32	R6-33K-T3-32	R6-36K-T3-32	R6-40K-T4-32	R6-50K-T4-32
Anti-islanding Protection	AFD					
AFCI Protection	Optional					
Interface						
AC Connection	Terminal Block					
DC Connection	MC4					
Display	LED+APP (Bluetooth)					
Communication Port	Rs232(USB)+RS485(RJ45)+DRM(RJ45)					
Communication Mode	Wi-Fi/Ethernet/4G					
Load Monitoring	24/7 (Optional)					
General Data						
Topology	Transformerless					
Nighttime Power Consumption [W]	<0.6					
Operating Temperature Range	-40°C ~ +60°C					
Cooling Method	intelligent fan Cooling					
Ambient Humidity	0% ~ 100% non-condensing					
Max. Operating Altitude [m]	4000m (>3000m power derating)					
Noise [dBA]	<50					
Ingress Protection	IP65					
Mounting	Rear Panel					
Dimensions [H*W*D] [mm]	473*659.4*240					
Weight [kg]	35.5			37		37.5
Warranty [Year]	5 (Standard)/10/15/20/25 (Optional)					
Certifications	IEC/EN62109-1/2, EN61000-6-1/2/3/4, IEC61683, IEC60068-2, IEC62116, IEC61727, PEA/MEA, VDE0126-1-1/A1, CEI 0-21, VDE-AR-N 4105, AS/NZS4777.2, CQC NB/T 32004, G98/G99, NBR 16149, NBR 16150, C10/11, RD1669, UNE206006, UNE206007, EN50438					

3.

INSTALLATION instruction



3.1 The Determination of the Installation Position

 DANGER
<ul style="list-style-type: none"> · Dangerous to life due to potential fire or electricity shock. · Do not install the inverter near any inflammable or explosive items. · This inverter will be directly connected with HIGH VOLTAGE power generation device; the installation must be performed by qualified personnel only in compliance with national and local standards and regulations.
 NOTICE
<ul style="list-style-type: none"> · This equipment meets the pollution degree II. · Inappropriate or the harmonized installation environment may jeopardize the life span of the inverter. · Installation directly exposed under intensive sunlight is not recommended. · The installation site must be well ventilated.

The equipment employs intelligent fan Cooling, and it can be installed indoor or outdoor.
 (1) Do not expose the inverter to direct solar irradiation as this could cause power derating due to overheating.

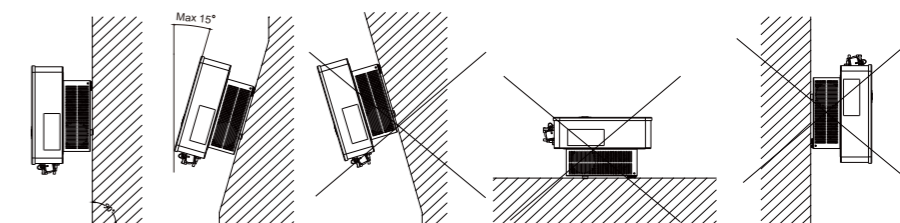


Figure 3.1
Mounting Method

(2) Mount vertically or tilted backwards by max. 15°. Never install the inverter tilted forwards, sideways, horizontally or upside down.

(3) Install the inverter at eye level for convenience when checking the LCD display and possible maintenance activities.

(4) When mounting the inverter, please consider the solidness of wall for inverter, including accessories. Please ensure the Rear Panel mount tightly.

To make sure the installation spot is suitably ventilated, if multiple SAJ on-grid solar inverters are installed same area.

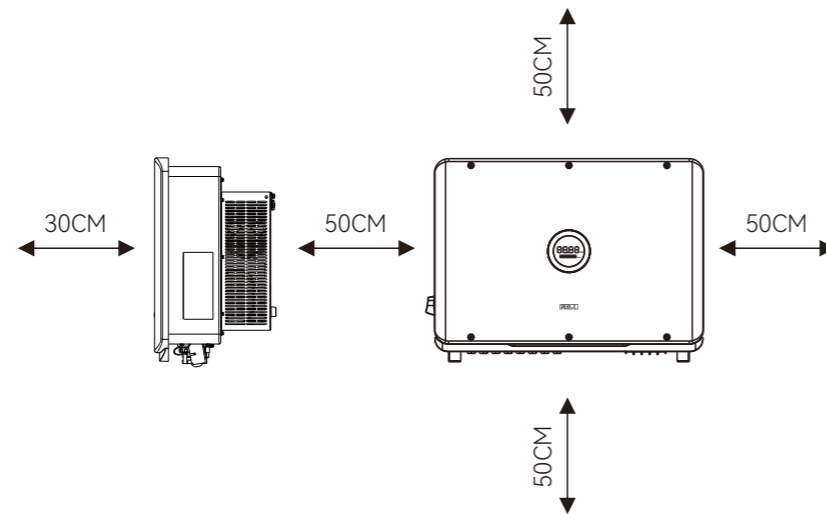
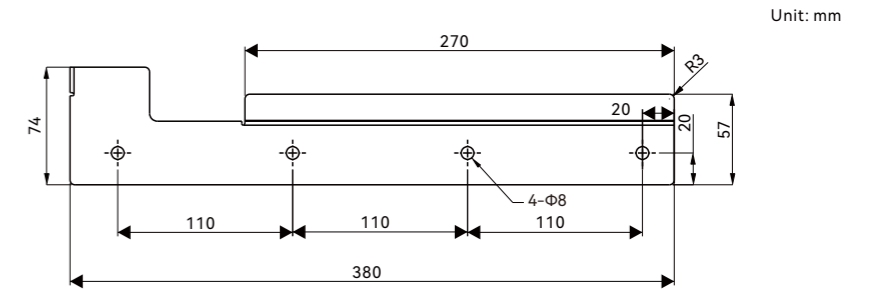


Figure 3.2
Minimum Clearance

3.2 Mounting Procedure

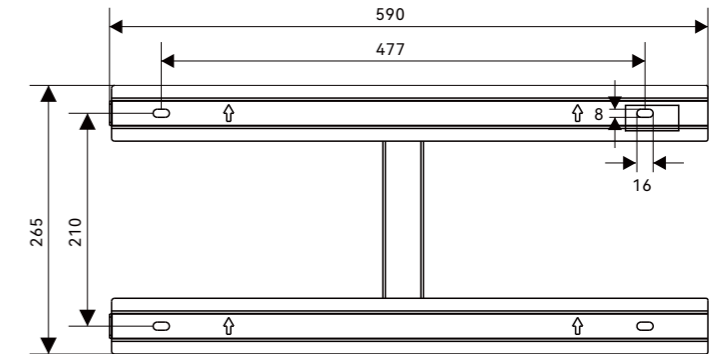
Figure 3.3
Dimensions of rear panel of
R6-15K/17K/20K/22K/25K-T2-32

(1) Mark the Positions of the Drill Holes of the Rear Panel
The mounting position should be marked as shown in Figure 3.3& Figure 3.4.



Unit: mm

Figure 3.4
Dimensions of rear panel of
R6-25K/30K/33K/36-T3-32, R6-40K/50K-T4-32



(2) Drill Holes and Place the Expansion Tubes

Drill 4 holes in the wall (in conformity with position marked in Figure 3.5 & Figure 3.6), and then place expansion tubes in the holes using a rubber mallet.

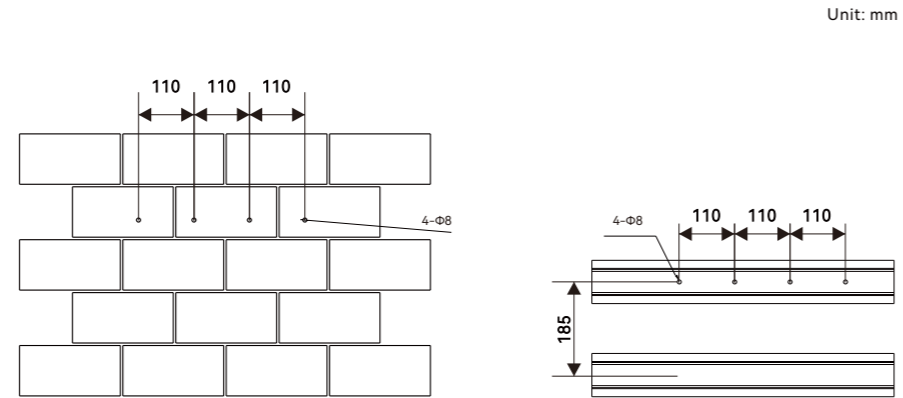


Figure 3.5
Drill holes' dimensions of
R6-15K/17K/20K/22K/25K-T2-32

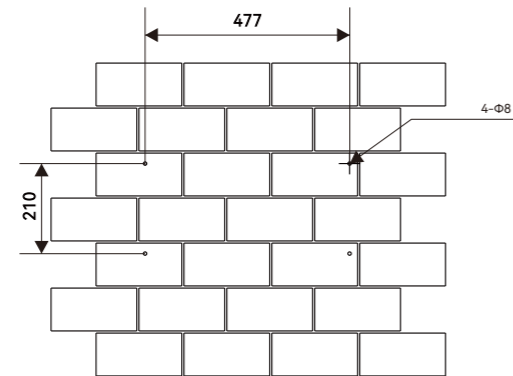


Figure 3.6
Drill holes' dimensions of
R6-25K/30K/33K/36K-T3-32, R6-40K/50K-T4-32

(3) Secure the Screws and the Rear Panel

The panels should be secured onto the mounting position by screws as shown in Figure 3.7.

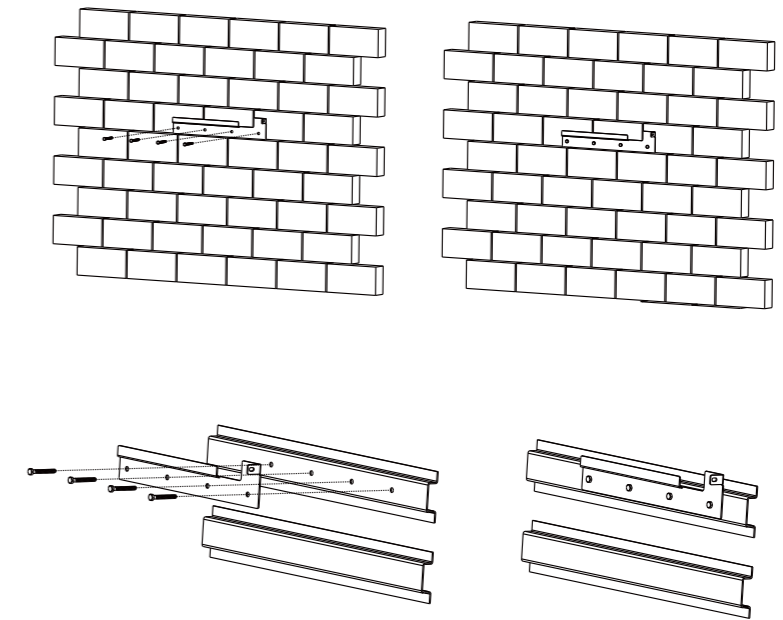


Figure 3.7
Mount the rear panel

(4) Mount the Inverter

Carefully mount the inverter to the rear panel as shown in Figure 3.8 and 3.9, Make sure that the rear part of the equipment is closely mounted to the rear panel.

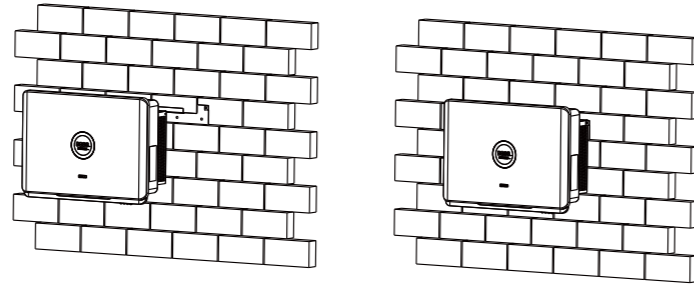


Figure 3.8
Mount inverter

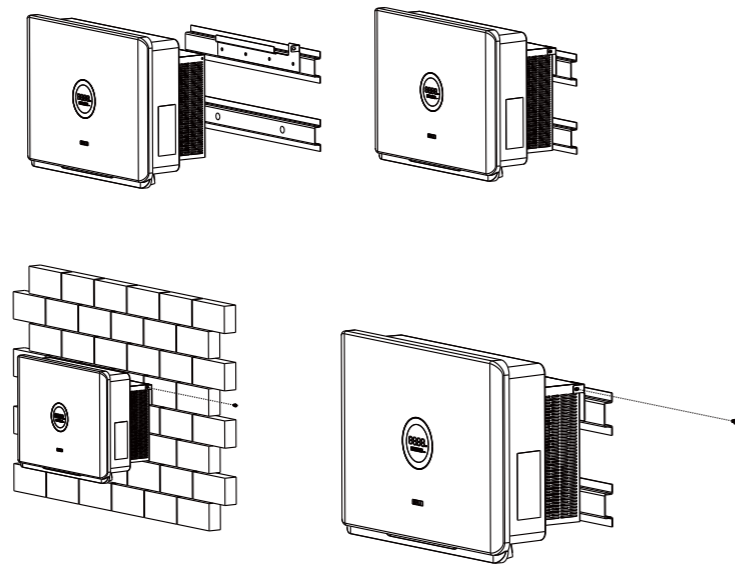
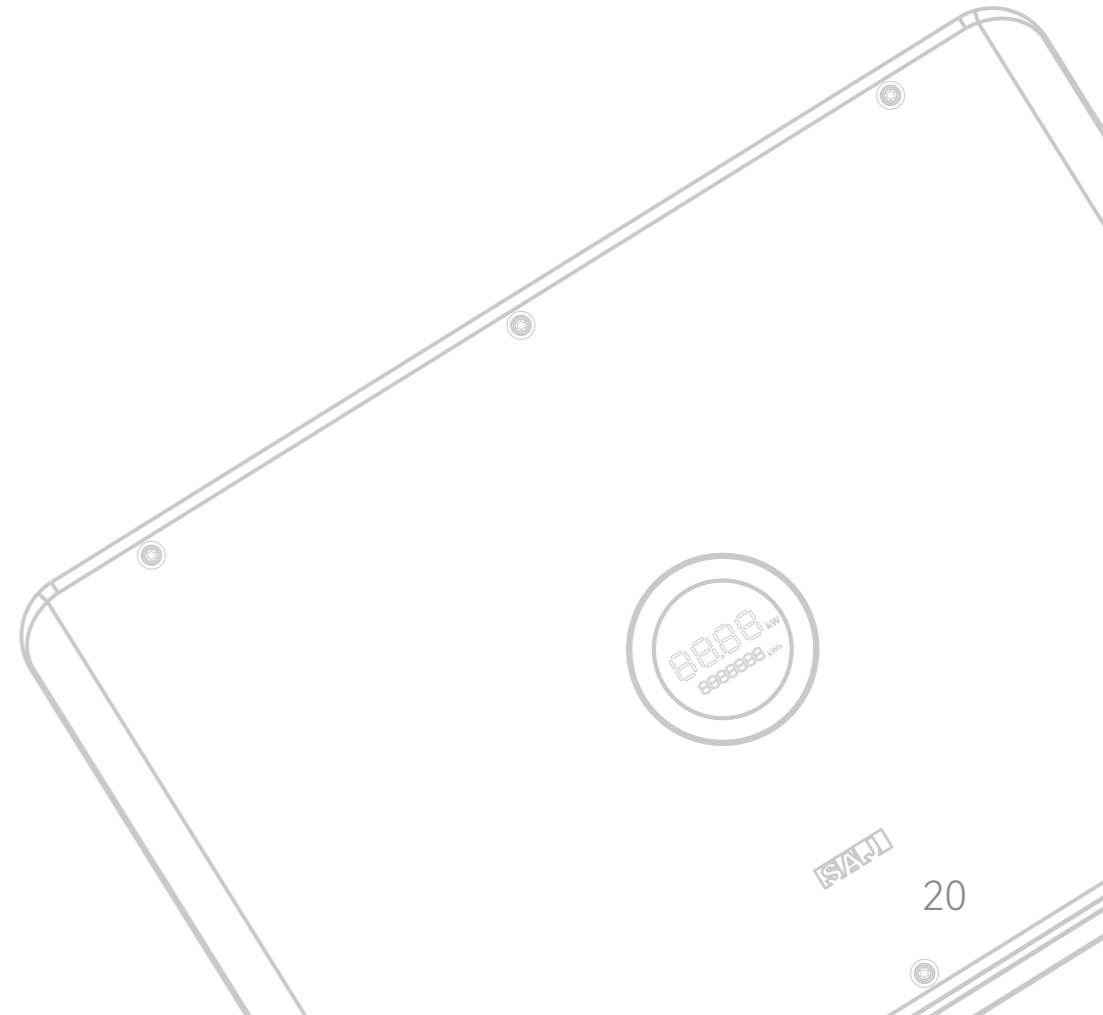


Figure 3.9
Fasten the inverter and
hanging panel with screws



4.

ELECTRICAL connection



4.1 Safety Instruction

Electrical connection must only be operated on by professional technicians. Please keep in mind that the inverter is a bi-power supply equipment. Before connection, necessary protective equipment must be employed by technicians including insulating gloves, insulating shoes and safety helmet.

⚠ DANGER

- Dangerous to life due to potential fire or electricity shock.
- When power-on, the equipment should in conformity with national rules and regulations.
- The direct connection between the inverter and high voltage power systems must be operated by qualified technicians in accordance with local and national power grid standards and regulations.
- The PV arrays will produce lethal high voltage when exposed to sunlight.

🔔 NOTICE

- Electrical connection should in conformity with proper stipulations, such as stipulations for cross-sectional area of conductors, fuse and ground protection.
- The overvoltage category on DC input port is , on AC output port is .

4.2 Specifications for Electrical Interface

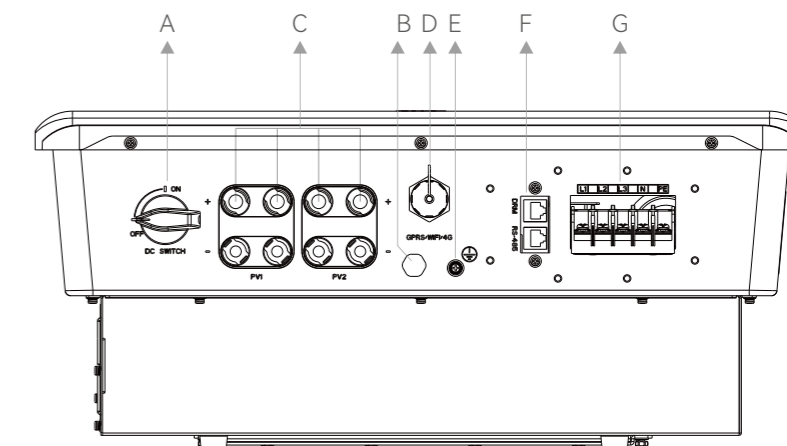


Figure 4.1
Electrical interface of
R6-15K/17K/20K/22K/25K-T2-32

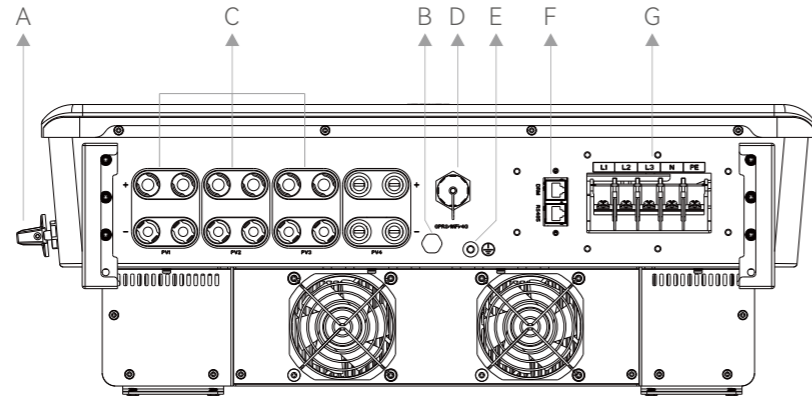


Figure 4.2
Electrical interface of
R6-25K/30K/33K/36K-T3-32

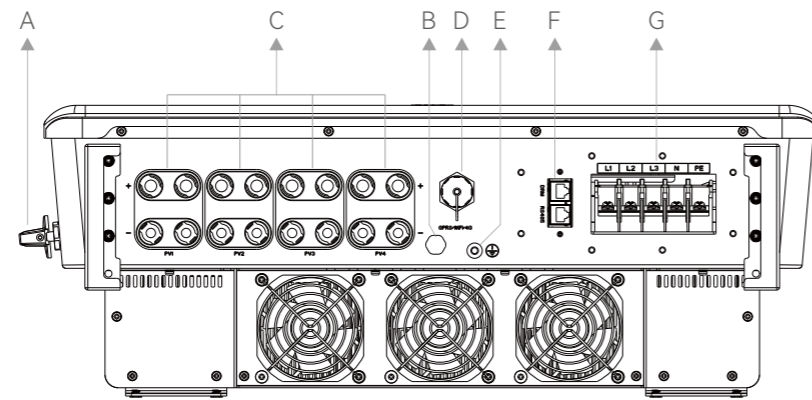


Figure 4.3
Electrical interface of
R6-40K/50K-T4-32

Code	Name
A	DC Switch
B	Decompression Valves
C	DC Input
D	RS232 Communication
E	Ground Connection
F	RS485 Communication+DRM
G	Terminal Block

Table 4.1
Specifications for interface

4.3 AC Connection

Table 4.2
Recommended power grid connecting
cable specification

Type	Cross-sectional area of cables (mm ²)	
	Scope	Recommended value
R6-15K/17K/20K/22K/25K-T2-32	10.0-16.0	16.0
R6-25K/30K/33K/36K-T3-32	16.0-35.0	25.0
R6-40K/50K-T4-32	16.0-35.0	25.0

If the grid-connection distance is too far, please select AC cable with larger diameter as per the actual condition.

(1)Ground of the inverter. After penetrating the external hex head screw through OT terminal of the grounding line, screw in the grounding port of enclosure of the inverter in clockwise direction and make sure it's screwed up tightly.

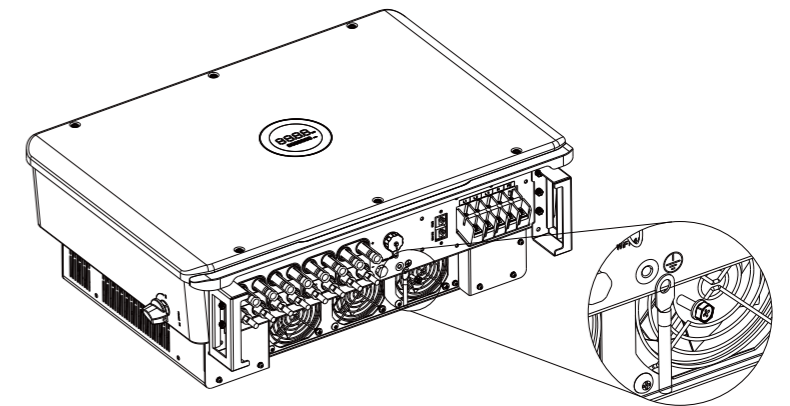


Figure 4.4
Inverter ground protection

(2) Screw off the screws at the AC output wire cover and take out the cover. Penetrate the AC cable of which the insulation layers has been peeled off through the AC waterproof locking screw hole of the cover. Lock L1 wire, L2 wire, L3 wire, N wire and PE wire tightly as per the marked connection positions on the interface board.

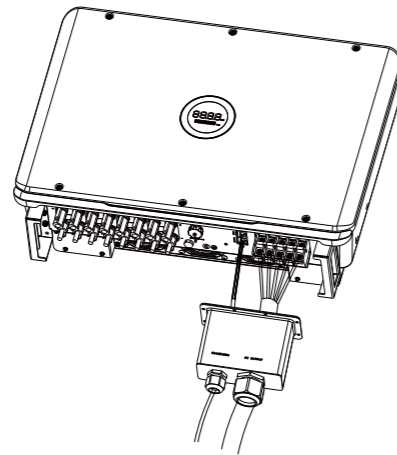


Figure 4.5
Connect cable

(3) After fixing the cover at the AC output wire terminal with screws, tighten up the AC waterproof nut.

4.4 DC Side Connection

Cross-sectional area of cables (mm ²)		Outside diameter of the cables (mm)
Scope	Recommended value	
4.0~6.0	4.0	4.2~5.3

Table 4.3
Recommended specifications of DC cables

DC connector is made up of one positive connector and one negative connector

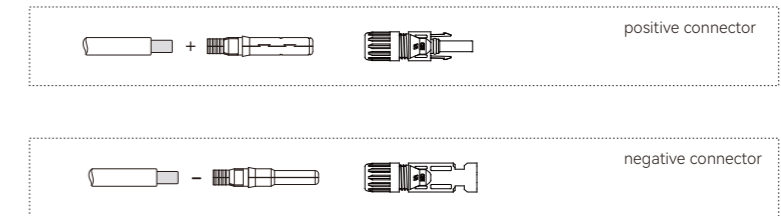


Figure 4.6
Positive and negative connectors

NOTICE

- Please place the connector separately after unpacking in order to avoid confusion for connection of cables.
- Please connect the positive connector to the positive side of the solar panels, and connect the negative connector to the negative side of the solar side. Be sure to connect them in right position.

Connecting Procedures:

(1) Use specified strip tool to strip the insulated enclosure of the positive and negative cables with appropriate length (8-10mm).

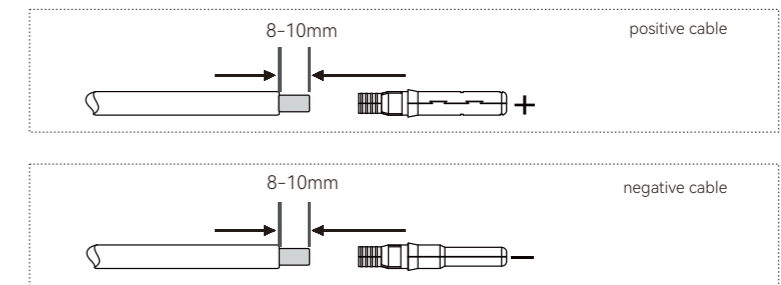


Figure 4.7
Connecting Cables

- (2) Feed the positive and negative cables into corresponding lock screws and crimp them tightly with a wire crimper. Make sure that the withdrawal force of the pressed cable is larger than 400N.
- (3) Plug in the pressed positive and negative cables into relevant insulated enclosure, a “click” sound should be heard when the contact cable assembly is seated correctly.
- (4) Fasten the lock screws on positive and negative connectors into corresponding insulated enclosure and make them tight.
- (5) Connect the positive and negative connectors into positive and negative DC input terminals of the inverter, a “click” sound should be heard when the contact cable assembly is seated correctly.

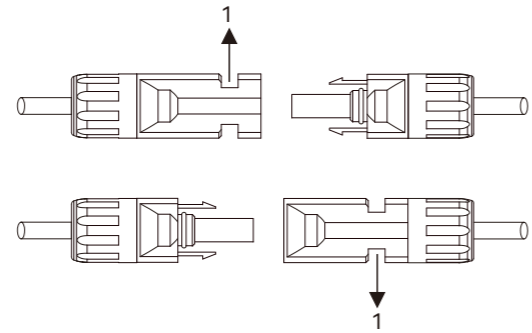


Figure 4.8
Connect the Inverter

1. Connection Port

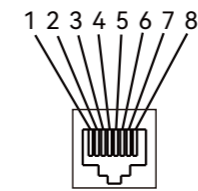
NOTICE
<ul style="list-style-type: none"> · Before insert the connector into DC input terminal of the inverter, please make sure that the DC switch of the inverter is OFF. · Please use the original terminal to install.

4.5 Communication Connection

R6 inverter is standardly equipped with a RS485 interface and a RS232 interface.

Figure 4.9
RS485 pin

Table 4.4
RS485 pin port definition



Pin Number	Description	Effect
1	NC	
2	GND_W	Ground wire
3	+7V_W	Power supply
4	NC	
5	NC	
6	NC	
7	RS485-A	Transmission RS485 differential signal
8	RS485-B	Transmission RS485 differential signal

Figure 4.10
RS232 pin

Table 4.5
USB pin port definition



Pin Number	Description	Effect
1	+7V	Power supply
2	RS-232 TX	Send data
3	RS-232 RX	Receive data
4	GND	Ground wire

(1) USB interface could be externally connected with eSolar AIO3 module, for operation in details please refer to eSolar AIO3 module Quick Installation Guide in www.saj-electric.com

(2) USB interface could be externally connected with eSolar 4G module, for operation in details please refer to eSolar 4G module Quick Installation Guide in www.saj-electric.com

(3) USB interface could be externally connected with eSolar WiFi module, for operation in details please refer to eSolar WiFi module Quick Installation Guide in www.saj-electric.com

5.

DEBUGGING instructions



5.1 Introduction of HMI (Human-Machine Interface)

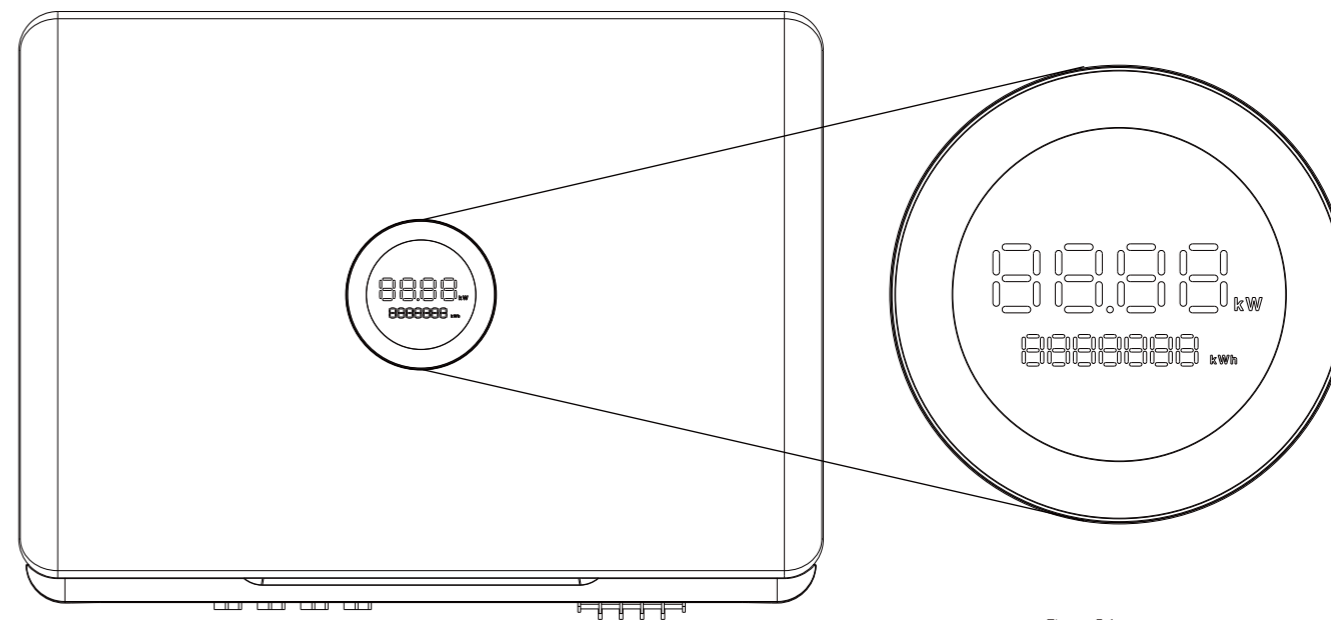


Figure 5.1
Human-Machine Interface

Talbe 5.1
Interface description

Display	Status	Description	
Ring Light	○	Solid Green	The inverter is in normal on-grid state
		Breathing Mode	The inverter is in the initialization or waiting state
	○	Solid Red	An error occurs
		Breathing Mode	Software is upgrading in the inverter
	○	OFF	Power off
LED Panel 1	8888. / E036	Current power (kW) / Error code	
LED Panel 2	888888 kWh	Total yield (kWh)	

5.2 Monitoring Operation

- R6 series products could be monitored through eSolar APP.
- This equipment is standardly equipped with a USB interface which could transfer AIO3/4G module and Wi-Fi module to monitor running state of the equipment.

5.2.1 APP Introduction

eSolar could achieve communication with the equipment via Bluetooth, Cellular network and Wi-Fi and it is an APP for nearby and remote monitoring.

Download APP

Installers using iOS system could search for "eSolar O&M" in App Store and download this App. Installers using Android system could search for "eSolar O&M" in Google play and download this App.

For iOS / Android system, Installers could visit SAJ official website: www.saj-electric.cn and scan the QR code to download "eSolar O&M" APP.

Account---Please use the installer account to login.

Note: For the end user, please download and install the "eSolar Air" APP and log in to the APP or SAJ official website to register your account.

5.2.2 Nearby Monitoring

Bluetooth connection

After installing the eSolar AIO3/4G/WiFi module, the mobile phone could be directly connected with the inverter via Bluetooth.

Connection setting

Step 1
Log in eSolar O&M APP.

Step 2
Choose "User" interface
→ choose "Remote control".

Step 3
Choose connection way as
"Bluetooth" → choose "next step".

Please choose ways of connection

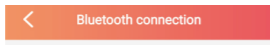
Bluetooth WiFi Cloud

Tips:
(1)Please turn on the inverter and mobile phone bluetooth;
(2)Determine the connection of the communication module;

NEXT STEP

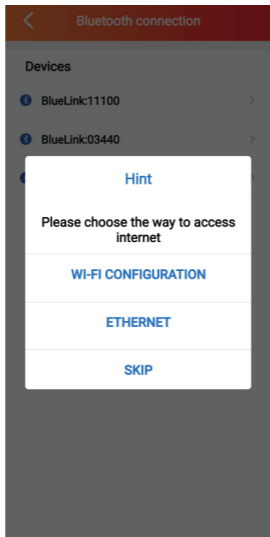
Step 4

Search for equipment → click the Bluetooth name matched with the inverter.



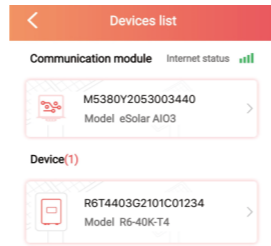
Step 5

Select the configuration method of the module network connection.



Step 6

Connect successfully → set country and grid code for first start-up → after inverter start, users can view inverter's information.

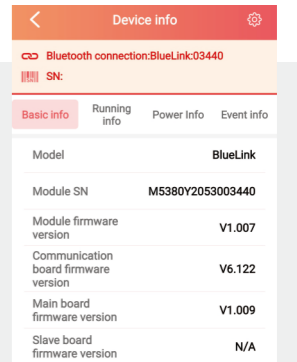


Equipment information

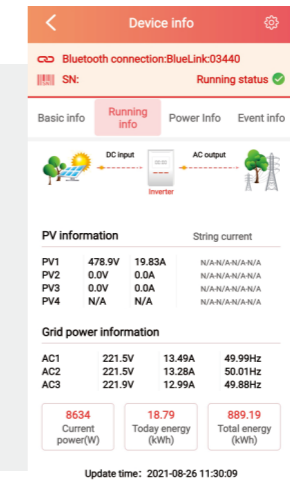
Connection way, running state, basic information, running information, Power information and events information of the communication of the inverter could be checked.


Step 1: Click "Basic info"

Inverter model, Module SN code, Module firmware version, Communication board firmware version, Main board firmware version, Slave board firmware version could be checked.



Basic info	
Bluetooth connection:	BlueLink:03440
SN:	
Model	BlueLink
Module SN	M5380Y2053003440
Module firmware version	V1.007
Communication board firmware version	V6.122
Main board firmware version	V1.009
Slave board firmware version	N/A



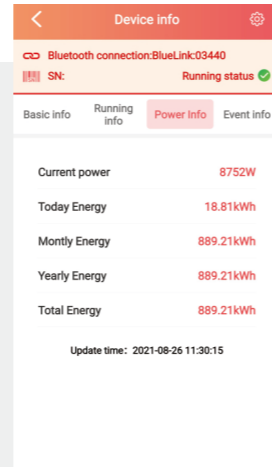
Running info			
			
PV information		String current	
PV1	478.9V 19.83A	N/A/N/A/N/A	
PV2	0.0V 0.0A	N/A/N/A/N/A	
PV3	0.0V 0.0A	N/A/N/A/N/A	
PV4	N/A N/A	N/A/N/A/N/A	
Grid power information			
AC1	221.5V	13.49A	49.99Hz
AC2	221.5V	13.28A	50.01Hz
AC3	221.9V	12.99A	49.88Hz
8634	18.79	899.19	
Current power(W)	Today energy (kWh)	Total energy (kWh)	
Update time: 2021-08-26 11:30:09			

Step 2: Click "Running info"

PV information (voltage and current at PV terminal), Grid power information (voltage, current and frequency at AC terminal), etc.

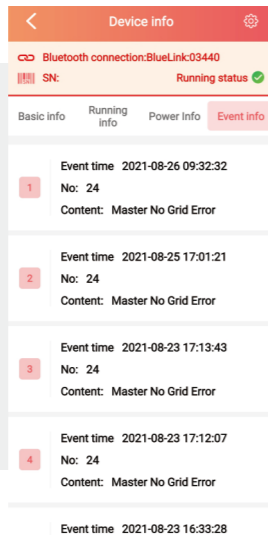
Step 3: Click "Power info"

Current power, today energy, monthly energy, yearly energy, total energy could be checked.



5.2.3 Remote Monitoring

- (1) Connect the internet via the eSolar AIO3 module and upload the inverter data onto the server and customers could monitor running information of the inverter remotely via the eSolar Web Portal or their mobile customer terminals.
- (2) Connect the internet via the eSolar 4G module and upload the inverter data onto the server and customers could monitor running information of the inverter remotely via the eSolar Web Portal or their mobile customer terminals.
- (3) Connect the internet via the eSolar WiFi module and upload the inverter data onto the server and customers could monitor running information of the inverter remotely via the eSolar Web Portal or their mobile customer terminals.



Step 4: Click "Event info"

Time of the events, events sequence number (referring to fault codes details in Chapter 7 Fault Codes and Common Troubleshooting) and events content of the faults of the inverter could be checked.



Fault Code & Troubleshooting



Error Code	Explanation
01	Master Relay Error
02	Master EEPROM Error
03	Master Temperature High Error
04	Master Temperature Low Error
05	Master Lost Communication
06	Master GFCI Device Error
07	Master DCI Device Error
08	Master Current Sensor Error
09/11/13	Master Phase1/ Phase2/ Phase3 Voltage High
10/12/14	Master Phase1/ Phase2/ Phase3 Voltage Low
15	Master Voltage 10Mins High
18	Master Grid Frequency High
19	Master Grid Frequency Low
24	Master No Grid Error
27	Master GFCI Error
28/29/30	Master Phase1/ Phase2/ Phase3 DCI Error
31	Master ISO Error
32	Master Bus Voltage Balance Error
33	Master Bus Voltage High
34	Master Bus Voltage Low
35	Master Grid Phase Error
36	Master PV Voltage High Error
37	Master Islanding Error
38	Master HW Bus Voltage High
39	Master HW PV Current High
41	Master HW Inv Current High
44	Master Grid NE Voltage Error
45/46/47/48	Master Fan1/Fan2/Fan3/Fan4 Error

Talbe 6.1
Error Code

Error Code	Explanation
49	Lost Communication between DSP and PowerMeter
81	Lost Communication
83	Master Arc Device Error
84	Master PV Input Error
85	Authority expires
86	Master DRM0 Error
87	Master Arc Error

General troubleshooting methods for inverter are as follows:

Fault Information	Troubleshooting
Relay Error	If this error occurs frequently, please contact your distributor or call SAJ technical support.
Storer Error	If this error occurs frequently, please contact your distributor or call SAJ technical support.
High Temperature Error	Check whether the radiator is blocked, whether the inverter is in too high or too low temperature, if the above mentioned is in normal, please contact your distributor or call SAJ technical support.
Master Lost Communication	If this error occurs frequently, please contact your distributor or call SAJ technical support.
GFCI Devices Error	If this error occurs frequently, please contact your distributor or call SAJ technical support.
DCI Devices Error	If this error occurs frequently, please contact your distributor or call SAJ technical support.
Current Sensor Error	If this error occurs frequently, please contact your distributor or call SAJ technical support.
AC Voltage Error	<ul style="list-style-type: none"> · Check the volt. of the grid · Check the connection between the inverter and the grid. · Check the settings of the on-grid standards of the inverter. · If the volt. of the grid is higher than the volt. regulated by local grid, please inquire the local grid workers whether they can adjust the volt. at the feed point or change the value of the regulated volt. · If the volt. of the grid is in regulated range as allowed and LCD still in this error, please contact your distributor or call SAJ technical support.

Talbe 6.2
Troubleshooting

Fault Information	Troubleshooting
Frequency Error	Check the setting of country and check the frequency of the local grid. If the above mentioned are in normal, please contact your distributor or call SAJ technical support.
Grid Lost Error	Check the connection status between the AC side of the inverter and the grid, if the above mentioned are in normal, please contact your distributor or call SAJ technical support.
GFCI Error	Check the insulation resistance of the positive side and negative side of the solar panel; check whether the inverter is in wet environment; check the grounding of the inverter. If the above mentioned are in normal, please contact your distributor or call SAJ technical support.
DCI Error	If this error exists always, please contact your distributor or call SAJ technical support.
ISO Error	Check the insulation resistance of the positive side and negative side of the solar panel; check whether the inverter is in wet environment; check whether the grounding of the inverter is loose or not. If the above mentioned are in normal, please contact your distributor or call SAJ technical support.
Overcurrent	Check the connection status between the inverter and the grid and test whether the volt. of the grid is stable or not, if the above mentioned are in normal, please contact your distributor or call SAJ technical support.
Over Bus Voltage	Check the settings of the solar panel. SAJ designer can help you. If the above mentioned are in normal, please contact your distributor or call SAJ technical support.
PV Overcurrent	If this error always exists, please contact your distributor or call SAJ technical support.
PV Voltage Fault	Check the settings of the solar panel. SAJ designer can help you. If the above mentioned are in normal, please contact your distributor or call SAJ technical support.
Lost Communication	Check the connection of communication cables between control board and display board. If the above mentioned are in normal, please contact your distributor or call SAJ technical support.
Null line-to-earth voltage fault	Check if connection of the AC output grounding terminal is stable and reliable. If the content mentioned as above is normal, please contact your distributor or call SAJ technical support.

7.

Recycling & Disposal



This device should not be disposed as residential waste. An Inverter that has reached the end of its life and is not required to be returned to your dealer, it must be disposed carefully by an approved collection and recycling facility in your area.