EnergyConcerns.

Empowering your future, together.

Solar PV System

OWNER'S MANUAL

Addressed to:
County Bridge Club
67 Saint Oswalds Road, Leicester
LE3, UK

Presented By

Energy Concerns LTD

01164976782

www.energyconcernsltd.co.uk

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CONTACT INFORMATION

Installation Company: Energy Concerns LTD

Address: 10 heawood way, leicester LE3 3TJ

Phone: 01164976782

Lead Installer of Your PV System: Todd Stephens

Accreditation: MCS, LEVEL 3 NVQ ELECTRICIAN

SAFETY INFORMATION

A rooftop PV system can produce hundreds or thousands of watts of power at any given time, which can be extremely dangerous and even fatal. There are several important precautions that must be followed by the Owners of the PV system for their own safety.

Avoid touching the panels and do not put pressure on them. They might break or produce an electrical shock.

Do not attempt to carry out any kind of electrical maintenance or repair work on or near your system.

Please make sure that only certified personnel should undertake any electrical or repair work on the systems.

This manual is in accordance with the Clean Energy Council requirements. In addition to important safety information, it sets out details of your PV system, estimated system performance, warranty information, maintenance requirements, commission reports, etc.

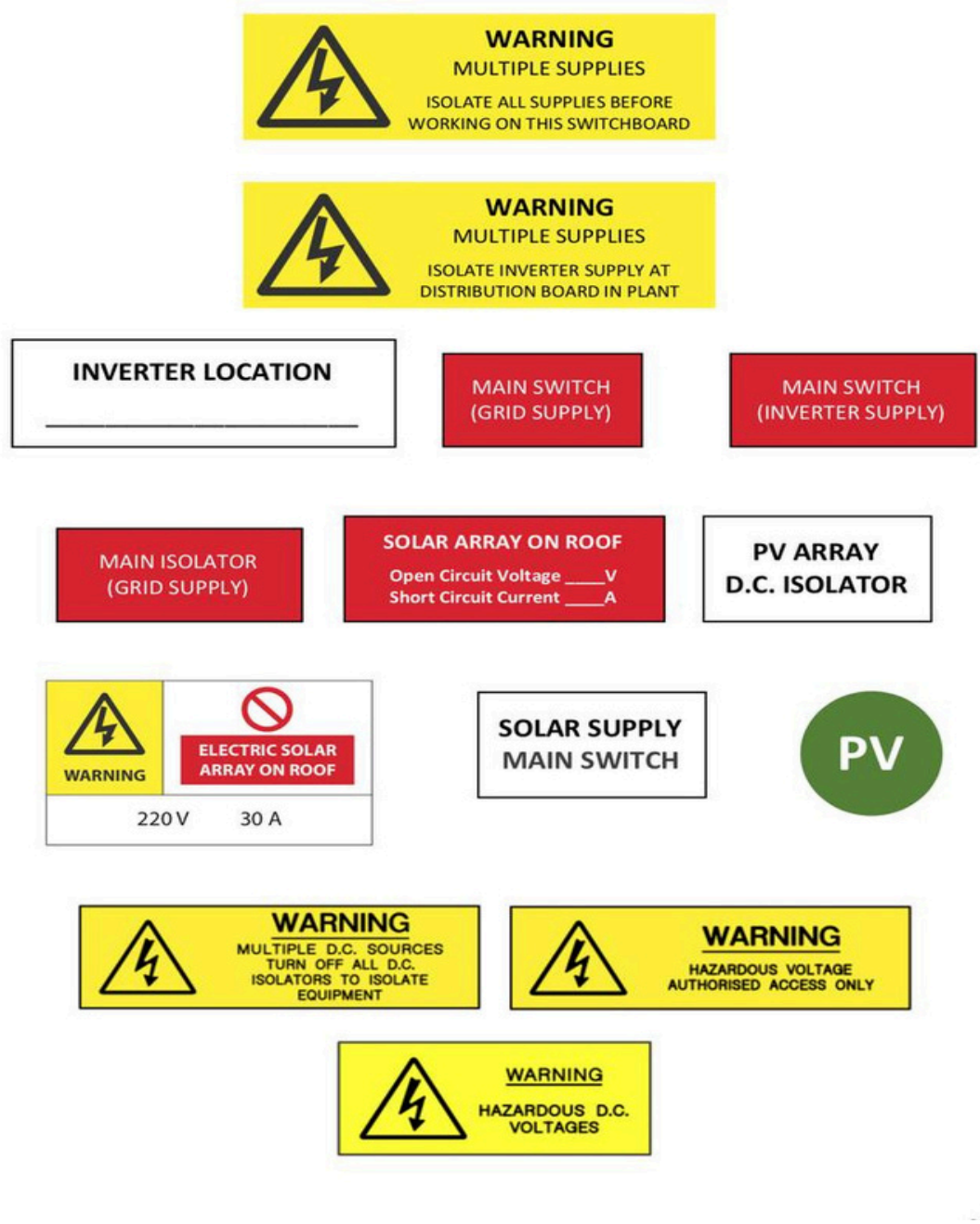
It is strongly recommended that any kind of maintenance or system upgrades be carried out by Energy Concerns LTD or, if unavailable, another qualified or accredited installation company.

Your installed system contains signage including warnings, information on open-circuit and closed-circuit voltages, equipment location details and system shutdown procedure.

It is strongly recommended that you acquaint yourself with the signage.

This manual is only for grid-connected PV systems without any battery storage.

IMPORTANT SIGNS



LIST OF EQUIPMENT SUPPLIED & WARRANTIES

Product	SKU	Manufacturer	Specification	Quantity	Warranties
PV Panel	TSM-500NEG18R.28	Trina Solar Co., Ltd.	500 Watts	75	Product: 25 Years Performance: 30 Years
Inverter	SigenStor EC 25.0TP	Sigenergy	25.000 kW	1	Product: 10 Years
Battery	SigenStor BAT 8.0	Sigenergy	8.06 kWh	3	Product: 10 Years

YOUR PV SYSTEM

How Solar PV System Works:

In a grid connected system without battery storage, the PV system works in 4 broad steps:

1. The sun radiations falling on the PV modules generate DC electricity.
2. A DC to AC solar inverter converts the energy generated by the modules into AC, typically 230V at 50Hz (depending on the country and use) which is suitable for the household appliances.
3. The AC output of the inverter is used to power household appliances.
4. Surplus electricity is fed into the main grid.

Components of Rooftop Grid Connected System

Solar Panels

The primary component of a PV system, solar panels generate DC electricity from the sunlight that falls on the modules. They will generate electricity even when the panels are not directly receiving sunlight (clouds, shadow, etc.) and therefore it is important to not touch them directly. The rating output of a solar panel is given in Watts. This is the maximum possible power that a panel can generate in ideal STC conditions.

Solar Inverter

Inverter is a power electronic device that converts DC electricity to AC. The electricity produced by solar (PV) panels is DC (direct current) whereas the household appliances require AC (Alternate current) supply. The inverter is used to convert the DC supply generated by the solar panels to AC that can be used by the household appliances and the surplus can be fed back into the main grid. The type of inverter varies based on the type of system (AC coupled, DC coupled, off-grid, etc).

Solar Array Mounting Structure

Solar panels are connected into arrays and mounted on rigid structures facing the direction of the Sun (southwards for locations in northern hemisphere and northwards for locations in southern hemisphere). There are several different mounting structures out of which rooftop systems are the most common. They can be broadly divided into three types:

1. Sloped Roof Mounting System: These systems require some type of penetration or anchoring into the roof. This could be attaching to rafters or directly to the decking.

2. Flat Roof Mounting System: Mainly seen in commercial and industrial roofs, flat roof mounitng system are also common in residential apartments that have a flat roof. This includes roofs with a slight tilt, but not as much as sloped residential roofs. Flat roof systems are usually ballasted with a few penetrations.

3. Solar Shingles (BIPV): Solar Shingles are a part of Building Integrated PV (BIPV) systems (buildings that have solar PV system integrated into its structure). They are gaining traction because of increased focus on aesthetics. They do not need any mounting system because they are integrated as a part of the roof.

Miscellaneous

Other components of your system includes cabling, junction box, conduits, connectors, switches, etc. These components comprise all the things needed to connect each element of a PV system together safely and securely. Like any other specialised technology, there are several components and tools involved in the proper installation of a safe and effective PV system.

Battery Storage (for battery-integrated systems only)

Battery storage systems provide the ability to store excess energy generated by solar PV panels for later use. This helps in offsetting electricity demand for use during times when solar PV is not generating energy. Batteries can also charge themselves through the grid during off-peak hours and supply energy to the house during peak hours, saving costs. While some batteries come with inbuilt inverters, other batteries may need an extra inverter for charging/supplying load and/or a charge controller for directly charging through the PV panels. Batteries are expensive and needs special maintenance as described in the maintenance section of this Owner's Manual.

Solar Charge Controller (for battery integrated systems only)

If batteries are connected directly with the PV panels, they must have a charge controllers attached. Solar charge controller regulates the amount of current the PV panels feed into the battery storage. In addition to their primary function of preventing overcharging of the batteries, charge controllers also acts as a valve and blocks stored current from leaking back into the PV panels during times of no generation.

SYSTEM PERFORMANCE ESTIMATE

System Size	**37.5 kW**
Estimated Daily Energy Generated	**83 kWh**
Estimated Annual Energy Generated	**30158 kWh**

System Size refers to the total power output by the PV panels under ideal sunlight and temperature conditions. The system size is calculated by multiplying the number of PV panels installed with the nominal power output of each panel.

Estimated Annual Energy Generated is the best guess of the total energy generated by your system in a year based on the panel orientation and the location's irradiation.

Table: Estimated daily kWh production of your system.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Shading Factor - Percentage Output versus Full Sun Estimate (including all factors)	72%	83%	91%	96%	99%	100%	100%	100%	99%	99%	95%	84%
Estimated Daily kWh Production (including all factors)	19.74	38.74	70.57	107.05	138.01	151.52	145.94	123.13	89.54	55.66	30.21	18.68

SHUTDOWN PROCEDURE

PV panels can produce electrical current even when the system is not operating and therefore it must always be treated as live. As a result, even when a system has been shut down, parts of the system may be electrically live. Caution must be exercised while handling these systems.

1. Switch off AC isolator (RED) located by the Inverter.
2. Switch off DC isolator (BLACK) located by the Inverter.

WARNING: Do not open plug and socket connectors or PV array DC isolator under no load.

WARNING: PV array DC isolator do no de-energize the PV array and array cabling.

STARTUP PROCEDURE

Start-up procedure is the reverse of the shutdown procedure.

1. Switch on DC isolator (BLACK) located by the inverter.
2. Switch on AC isolator (RED) located by the inverter.

Actions During Earth Fault:

All PV systems with an array peak power of less than 240 kWp at STC are required to have a compliant Earth Fault Alarm system. An earth fault alarm is a safety requirement that detects whenever there is a fault or short-circuit between the DC circuit(s) of a PV system and ground (earth).

Respond immediately to the alarm with the following actions:

1. Follow the shutdown procedure given above.

2. Do not touch the panels or other conductive parts (such as metal, cables, etc.) of the system to avoid shocks caused by leakage currents.

3. Contact Energy Concerns LTD or, if unavailable, another accredited installer. You may also call your area's electrical authority.

MAINTENANCE

A properly designed and installed PV system can have fault free operation for several years. Like any other hardware, performing normal upkeep and inspection of PV system components will help guarantee its performance and reduce disruptions due to component failure. It is important to know that all kind of maintenance and repair work should be carried out by Energy Concerns LTD, or, if unavailable, another accredited installer.

GRID CONNECTED SYSTEM

When operating correctly, Solar power systems can be overall considered safe. Nevertheless, there are some system components that can be potentially dangerous hazards. These include solar modules, batteries, etc. Since the grid voltage at residential level is set at 240V AC single phase, a grid-connected solar system operates at the same voltage level. Even though 240V AC power is dangerous and fatal when live exposed wires/terminals are touched, it is generally safe when properly insulated and kept in good working condition. Any maintenance work that require low voltage (LV) wiring must be undertaken by a certified electrician or contractor. The owner of the system MUST NOT undertake any maintenance to LV wiring systems or the output terminals of equipment that produces low voltage (LV) or above. It is also the duty of the owner to accustom themselves with the danger and warning signs and pay special attention when around system components that carry these signs.

WARNING: The maintenance details provided below are for knowledge purposes only. Other than visual inspections, please make sure that any kind of maintenance on your system should be carried out by Energy Concerns LTD , or, if unavailable, another accredited organisation only.

A typical grid connected system includes:

- PV Modules
- Inverter
- BOS equipment- including switching equipment, meters and system wiring.

PV MODULES

There are several reasons a PV panel may not output expected power. These include shading, dirt on the panels, cracks, improper connections, etc. A combination of different solar panels is called a solar array. If the output of one module is limited by the factors stated above, that affected module may limit the text output of the whole array even when other modules aren't affected by the loss mechanisms above. This is in contrast to the common assumption that PV systems are maintenance-free. Nevertheless, with occasional inspections and maintenance, the performance of all the solar modules and thereby the whole system can be assured.

The primary maintenance work for solar modules is the cleaning of the glass panel to remove the dirt that might have accumulated on its surface. In most cases, cleaning is only required during the long dry periods where there is no rain to naturally clean the modules. To remove a layer of dust and dirt from the modules, the panels are simply washed with water. If the modules have thick dirt on the surface that is not getting removed by normal washing, a sponge and warm water can be used. Use of any detergent or compounds is not recommended.

After cleaning all the modules, a visual inspection of the PV system can help finding any defects on the modules including cracks, discolouration, chips, etc. In case any defects are found, their location should be noted in the logbook provided. This would help in monitoring the system and whether the defects affect the system output in the future. In most of the cases the module output will not be affected, but such defects should not be ignored. If defects on the modules have worsened, you may inform and discuss with Energy Concerns LTD.

During the inspection of the solar arrays and modules by the certified personnel, the inspection of the array mounting frame should also be carried out. Special attention should be paid to items such as array mounting bolts. Checks should be carried out to ensure that the frame and modules are firmly secured.

WARNING: Your system modules are located on a roof and therefore there is a risk of falling. Make sure that the maintenance is only carried out by certified personnels and are wearing some form of fall protection equipment (eg. harness or scaffolding).

INVERTER

Unlike modules, inverters generally require very little maintenance but special attention must be paid when performing maintenance on other parts of the system:

- Keep the inverters clean and properly covered.
- Minimise the possibility of dirt and dust being blown over the equipment - If required, clean with dry cloth.
- Make sure that the inverter system is not infested by insects or rodents.
- Check inverter operation by monitoring the LED indicator, meter or other displays on the inverter.

BALANCE OF SYSTEMS (BOS)

As stated earlier, these items include wiring, junction box, meter, etc that are paramount for the system connectivity and operation. They generally require minimum maintenance but when maintenance work is being conducted on other parts of the system then the following should be undertaken:

- Make sure that all cables/conduits and interconnections are mechanically secure.
- Verify proper operation of all switches and circuit breakers.
- Confirm that the meters are operating properly.

Normally modern PV modules use "plug" cables for interconnection in the array and because of roof mounts these are often hidden behind. Therefore visually inspecting them is not feasible. The only cables that can be inspected are the ones going from the array to the inverter or the inverter to the switchboard.

BATTERY STORAGE

(Battery integrated systems only)

Battery systems are a serious safety risk if incorrectly installed or not properly maintained. They can lead to:

- electric shock
- ash burns
- re-explosion
- exposure to hazardous chemicals

Therefore it is paramount to avoid clutter around the battery. Do not keep anything near or on top of the battery bank other than the safety equipment required for the maintenance of the battery. Plenty of ventilation in the battery enclosure and the room must be ensured at all times.

WARNING: Before any maintenance is carried out on the battery system, it is extremely important that the battery storage is isolated from the system and is shut down.
The specified battery shutdown procedure mentioned in this owner's manual or the sign installed on site must be followed. During maintenance, some of the things that the certified personnel must ensure includes:

- Battery system terminals should be free of dirt and electrolyte.
- Ensuring electrical terminals are set to correct torque settings.
- Ensuring battery accommodation integrity is maintained (eg. not damaged, free from debris/ rubbish; and, access is not obstructed).
- Ensure proper functioning of over-current and isolation devices.
- Check charge and discharge parameters are correctly set.
- Ensure correct ventilation has been provided and is maintained.
- Check cable mechanical support, protection and penetration is maintained

Any maintenance conducted and discrepancy must be noted in the logbook provided.

MAINTENANCE SCHEDULE

The table below shows the maintenance frequency based on activity.

Activity	Frequency Monthly
Visual inspection (modules, battery, inverter, cabling)	Monthly
Site	Quarterly
Clean Modules	Quarterly or depending on site and condition
Battery Maintenance	Quarterly
Check mechanical integrity of the array structure and PV modules	Annually
Check all cabling for mechanical damage	Annually
Check output voltage and current of each string of the array and compare to the expected output under the existing conditions.	Annually
Check electrical wiring for loose connections	Annually
Check the operation of the PV array DC isolator Note: System Shutdown procedure must be followed	Annually
Check overall wiring installation and integrity	5 years

NOTE: Based on several factors, it is possible that your system might need extra maintenance or repairs. Please contact Energy Concerns LTD for more information.

SOLAR ARRAY LOG BOOK

The following logbook must be maintained for all maintenance procedures carried out on this system. Please print and maintain a hard copy of this logbook.

Date	Name	Cleaned Module	Array Structure OK	Array Cabling Mechanical	Array Cabling Electrical	Output Voltage	Output Current	PV Array DC Isolator	Comments/ Action Taken
		☐	☐	☐	☐	V	A	☐	
		☐	☐	☐	☐	V	A	☐	
		☐	☐	☐	☐	V	A	☐	
		☐	☐	☐	☐	V	A	☐	
		☐	☐	☐	☐	V	A	☐	
		☐	☐	☐	☐	V	A	☐	
		☐	☐	☐	☐	V	A	☐	
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		☐	☐	☐	☐	V	A	☐	
		☐	☐	☐	☐	V	A	☐	
		☐	☐	☐	☐	V	A	☐	
		☐	☐	☐	☐	V	A	☐	
		☐	☐	☐	☐	V	A	☐	
		☐	☐	☐	☐	V	A	☐	

INVERTER LOG BOOK

Date	Name	Cleaned Inverter	No Insects	Cable OK	Inverter Operating Correctly	Comments
		☐	☐	☐	☐	
		☐	☐	☐	☐	
		☐	☐	☐	☐	
		☐	☐	☐	☐	
		☐	☐	☐	☐	
		☐	☐	☐	☐	
		☐	☐	☐	☐	
		☐	☐	☐	☐	
		☐	☐	☐	☐	
		☐	☐	☐	☐	

BOS LOG BOOK

Date	Name	Cable Connection OK	All Switches and CBs Operating	Meter Operating Correctly	Comments
		☐	☐	☐	
		☐	☐	☐	
		☐	☐	☐	
		☐	☐	☐	
		☐	☐	☐	
		☐	☐	☐	
		☐	☐	☐	
		☐	☐	☐	
		☐	☐	☐	
		☐	☐	☐	

PV Handover Document

PV System Verification Certificate	✓ Initial verification
	☐ Periodic verification

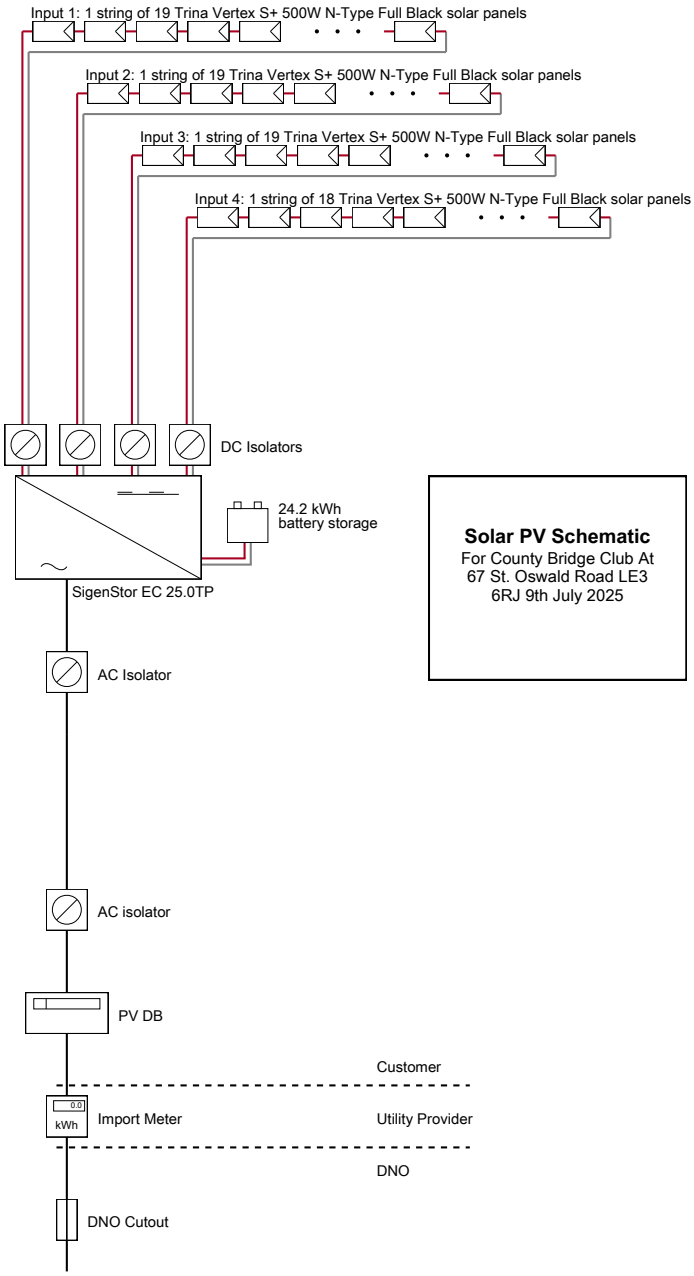
Installation Address County Bridge Club 67 St. Oswald Road Leicester Leicestershire LE3 6RJ	
Client Name: Kenneth Bray	**Test Date:** 28/07/2025

Contractor's details	Energy Concerns 10 Heawood Way Braunstone, Thorpe Astley Leicester Leicestershire LE3 3TJ	01164 972217 info@energyconcernsltd.co.uk
MCS Contact	Telephone: 0333 103 8130 Email: hello@mcscertified.com	

Description of installation (key components installed)	75 x Trina Vertex S+ 500W Panels with SigenStor EC 25.0TP Inverter		
Rated power (kW DC)	37.5kW	**IEC 60364-6 inspection report reference:**	✓
Location	Plant room	**IEC 60364-6 test report reference:**	✓
Estimated system performance (kWh)	30158kWh	**PV array inspection report reference:** (F44A)	✓
Circuits tested	✓	**PV array test report reference:** (F43)	✓

DESIGN, CONSTRUCTION, INSPECTION AND TESTING		
I/we being the person(s) responsible for the design, construction, inspection and testing of the electrical installation (as indicated by the signatures below), particulars of which are described above, having exercised reasonable skill and care when carrying out the design, construction, inspection and testing, hereby certify that the said work for which I/we have been responsible is, to the best of my/our knowledge and belief, in accordance with MCS Installation Standard MIS 3002.		
Signature(s): T. Stephens Name(s): Todd Stephens Date: 28/07/2025 (The extent of liability of the signatory(s) is limited to the work described above)	Next inspection recommended after not more than:	5 Years
	Comments:	

Schematic diagram



Workmanship Warranty

Energy Concerns
10 Heawood Way
Braunstone, Thorpe Astley
Leicester
Leicestershire
LE3 3TJ
01164 972217
info@energyconcernsltd.co.uk

Workmanship Warranty

1. We warrant to you that the installation will be carried out by appropriately qualified and trained personnel. They will use a level of reasonable care and skill as it is reasonable for you to expect. The warranty period for the installation services shall be 5 years from completion of the installation services.

2. If you make a valid claim about our service in accordance with our terms and conditions, we may arrange for the relevant products to be reinstalled by any of our registered or approved installers, or refund to the customer the charge for the relevant part of the installation service (or a proportionate part of such charge).

3. This warranty will only apply:

- If the product has been installed by us and has been properly used and maintained throughout the warranty period;
- If you have informed us of the alleged defect within the warranty period and within a reasonable period of discovery.

4. You will promptly provide all information and support including access to site and services that are reasonably necessary to enable us to evaluate any alleged defect and to perform its obligations under this warranty.

You will ensure that all premises, plant, power, fuel support services and other inputs that you provide for the installation and use of the products are reasonable, are fit for purpose and will be properly used and provided.

5. Any dispute as to whether a defect is covered by this warranty can be handled by the Renewable Energy Consumer Code's Dispute Resolution Process as detailed in section 9.1 of the Renewable Energy Consumer Code.

6. Where we have installed a system in a property that is sold within the warranty period the warranty will pass to the new legal owner of the property. It may not be transferred to or exercised by any third party.

7. This warranty is governed by English law and the English courts or by the law and the courts governing where your property is, if this is outside England or Wales.

8. Most products supplied by us come with the benefit of a manufacturer's product guarantee. Where a claim in respect of any of the products is notified to us by you in accordance with our terms and conditions, we will liaise with the manufacturer and use all reasonable endeavours to secure a replacement of the product (or the part in question), or a refund of the price of the product (or a proportionate part of the price). This warranty does not replace or limit your legal rights to bring a claim against us as the retailer of the goods supplied

Date of Issue: 28.07.2025

Address of installation:
County Bridge Club
67 St. Oswald Road
Leicester
Leicestershire
LE3 6RJ

Shading and Maintenance

Shading Issues

The solar panels we have installed for you have been positioned to gain the maximum amount of sunlight. However, you should be aware that the future growth of trees, large shrubs and their spreading foliage could cause the panels to be shaded, thereby reducing the performance of the system.

You should also consider how any future building work that takes place on your property would affect the shading of the solar panels.

Cleaning and Maintenance

The solar panels themselves are designed to be self-cleaning. However, over a period of time their performance can be affected by a build-up of debris such as leaves, tree sap, and bird matter.

We would recommend that the panels should be cleaned on a yearly basis. This should be carried out by personnel who are suitably qualified to work at height, or with equipment which would enable the cleaning to be carried out from ground level.

You should be aware of nesting birdlife that could affect the proficiency of the panels – it is illegal to tamper with nesting birds, however if you notice any you can opt for protective netting for your panels once the nests have been abandoned, which should prevent any recurrence of the problem.

Should you notice any fall off in the performance of the equipment, please contact us for advice.

MCS Certificate

MCS INSTALLATION CERTIFICATE NO. MCS-02408179-E

CERTIFICATE VERSION 1

07/08/2025

INSTALLER DETAILS

MCS Installer: Energy Concerns Ltd
MCS Certification Number: NAP68367

INSTALLATION DETAILS

Total Installed Capacity (kW): 37.50
Estimated Annual Generation (kWh): 30158.00
Planning Regulations Compliance: Permitted Development Rights
Building Regulations Notification: After The Installation Through A Self Certification Competent Persons Scheme (CPS)

Installer Project Number: County Bridge Club

SITE DETAILS

Address: COUNTY BRIDGE CLUB, 67, ST. OSWALD ROAD, LEICESTER, Leicestershire, LE3 6RJ

Supply MPAN: 1170002102870

Commissioning Date: 28/07/2025

Installed on Pitched Roof? (≥10° and ≤70°):
Not Applicable

PRODUCT DETAILS **TECHNOLOGY TYPE: SOLAR PHOTOVOLTAIC**

MCS PRODUCT NUMBER	PRODUCT MANUFACTURER	MCS CERTIFIED PRODUCT NAME
KIWA 00002/005 IK	Enstall / Esdec	Clickfit EVO Range
BABT8804-125-500W	Trina Solar Co., Ltd.	TSM-500NEG18R.28

MCS INSTALLATION CERTIFICATE NO. MCS-02408179-E

CERTIFICATE VERSION 1

07/08/2025

GENERATION METER DETAILS AND ADDITIONAL INFORMATION

Generation Meter Make(s):
N/A

Generation Meter Model(s):
N/A

Generation Meter Serial Number(s) (MSN):
0

Generation Meter Reading(s) (as commissioning date):
0

Installation Type:
Not Stand Alone

Declared Net Capacity (kW):
25.00

DNO Notification Compliance:
Consent To Connect Obtained Prior To Connection And Commissioning

MCS
CERTIFIED

Building Regulations Compliance Certificate

NAPIT has notified your local authority Building Control of the work detailed on this certificate. The Installer (named below) confirms that the work completed at the address shown below complies with parts 4 & 7 of the Building Regulations

Certificate Delivery Address

County Bridge Club
County Bridge Club
67 St. Oswald Road
LEICESTER
LE3 6RJ

Installation Address

County Bridge Club
67 St. Oswald Road
LEICESTER
LE3 6RJ

Schedule of Work:

Item	Qty	Item	Qty
Install a photovoltaic system - Non-domestic property (microgeneration work)	1		

Certificate Number:	4538403
Completion Date:	27/07/2025
Membership Number:	68367
Installer Name:	Energy Concerns Ltd

This certificate is issued by NAPIT Registration Ltd on behalf of the named installation company in accordance with Regulation 20 of the Building Regulations. Regulation 20(5) states that a certificate given in accordance with this regulation shall be evidence (but not conclusive evidence) that the requirements specified in the certificate have been complied with.

Information for the Householder

Authorised by the Department for Communities and Local Government, NAPIT Registration Limited (NAPIT) provides Competent Persons Registration Schemes for installers who meet the standards of work and competencies within their technical area.

As an approved member of NAPIT, your installer confirms that the installation detailed overleaf complies with parts 4 & 7 of the Building Regulations. You should be aware that not all work is required to be certificated and hence this certificate may only comprise some of the work undertaken for you. If the work you have had done is electrical you should also be provided with an Electrical Installation Certificate as required by the Wiring Regulations (BS7671).

If you are unsure about the quality or suitability of work carried out by your installer, you should, in the first instance attempt to resolve the issue with them. If the issue cannot be resolved with your installer and you wish to make an official complaint, please contact the NAPIT Customer Services department in writing. Further details relating to complaints can be found on the NAPIT website (see www.napit.org.uk).

In the event that the installer is no longer trading and work is found to be non-compliant with the Building Regulations, the following protections are in place for work in dwellings:

1. Microgeneration work will have been subject to a warranty required by the Renewable Energy Consumer Code (see www.recc.org.uk)

2. Work done under Green Deal financing will have been subject to guarantees as required by the Green Deal Code of Practice. (see http://gdorb.decc.gov.uk)

3. Work not covered by items 1 and 2 above, or any other policy put in place by the installer, is subject to the NAPIT Work Quality Guarantee. Under this guarantee, NAPIT will correct non-compliance with the Building Regulations for a period of up to six years from the date of installation (or the period of a product manufacturer's guarantee if this is shorter); provided work was carried out under contract and has been correctly notified to NAPIT. Terms and conditions apply (see www.napit.org.uk).

This Certificate remains the property of NAPIT and must be retained as evidence of compliance with the Building Regulations. In the event of the property being sold or ownership being transferred, please transfer this certificate to the new owner.

G99 Connection Confirmation

PLEASE RETAIN THIS LETTER FOR FUTURE REFERENCE

Energy Concerns Ltd
10 Heawood Way
Thorpe Astley
Leicester
LE3 3TJ

Grange Close
Clover Nook Industrial Estate
ALFRETON
Derbyshire
DE55 4QT
01162 315333
rsander@nationalgrid.co.uk

NGED Reference: 5657528

23/07/2025

Dear Installer,

Confirmation of the Connection at: County Bridge Club 67 St. Oswald Road, Leicester, Leicestershire, LE3 6RJ

This letter confirms the electrical characteristics of the connection and commissioning of the generation installation at the above premises.

This connection will be governed by Section 1 and Section 2 (if whole current metered) or Section 3 (if CT metered) of the National Terms of Connection (NTC's) and the terms of this Connection Confirmation Letter. The NTC's are available to view on the website: www.connectionterms.org.uk

The supply characteristics are detailed below;

Characteristics of the Supply of Electricity	
Maximum Import Capacity:	**41.4kVA**
Maximum Export Capacity:	**25 kW**
Voltage:	**230/400 Volts (Low Voltage)**
Phase:	**Three Phase**
Frequency	**50 Hertz**
Current:	**Alternating:**
Connection Point*	**The outgoing terminals of the Company's fused cut-out**
Acceptable Power Factor for Import Capacity:	**0.95 lag to unity with a reactive power tolerance of 0.92 kVAr**
Acceptable Power Factor for Export Capacity:	**Unity with a reactive power tolerance of 1.25 kVAr**

*Connection Point means the point or points of connection at which electricity may (upon energisation) flow between our distribution system and your installation.

The stated Maximum Import Capacity (MIC) will be fixed for 12 months from the date of this letter unless increased by agreement between us, in which case the increased MIC will be fixed for a further 12 months from the date of the increase.

The stated Maximum Export Capacity (MEC) will be fixed for 12 months from the date of this letter unless increased by agreement between us, in which case the increased MEC will be fixed for a further 12 months from the date of the increase.

Where the MEC is lower than the installed generation size, you will be required to limit capacity via an Export Limitation Scheme (ELS) based on ENA EREC G100.

Generating Equipment

The Company consents to the following generator being directly connected to the Company's Distribution System:

Type of Generation	Generation Unit Identification and/or Nomenciature	Generation Unit Manufacturer, Make & Type	Installed Size of Generation (kW per unit)	No. of Units	No. of Phases	Commissioning Date	Long/Short Term Parallel or Stand-by Generation
Photovoltaic	SIGEN/13320/V2/A1	SIGEN/13320/V2/A1	25	1	Three Phase	23/07/2025	Long Term

The means of connecting and disconnecting the Customer's Generating Plant is shown on the attached drawing.

The Customer's Generator will be run in Parallel mode only. The Customer shall take precautions to ensure that the neutral of the Customer's Generator is not connected to earth.

The Customer's protection and control systems shall be designed, operated and maintained as to safely connect, operate and disconnect the Customer's generating plant in accordance with Energy Networks Association Engineering Recommendation G99, as may be amended from time to time.

Additional Equipment

You may not connect, without our consent, any electrical equipment that may adversely affect the supply of electricity to others and/or cause disturbances outside of acceptable limits to the distribution system. Such equipment includes additional generators and energy storage systems, motors, welders, furnaces, high power appliances, converters (e.g. rectifiers, switch-mode power supplies, uninterruptable power supplies, battery chargers, high frequency induction furnaces and variable speed drives), regulators (e.g. AC heating and lighting controls and other equipment with non-linear voltage / current characteristics (e.g. arc welders and arc furnaces)).

Please notify us should you wish to install any equipment (including any listed above) that may adversely affect electricity supplies to others and/or cause disturbances outside of acceptable limits to the distribution system.

Responsibility Schedule

Ownership responsibilities are in accordance with the table below;

	Responsible Party			
Equipment Number and/or Nomenclature	**Ownership**	**Control**	**Operation**	**Maintenance**
Generation Inverter	Customer	Customer	Customer	Customer
Meter	Supplier/Meter Operator	Supplier/Meter Operator	Supplier/Meter Operator	Supplier/Meter Operator
Fused Cut-Out	DNO	DNO	DNO	DNO

Each Party shall allow the other Party's representatives reasonable access to its Equipment for testing of Protection, Metering and Metering Equipment.

Enduring Terms

Prior to selling or leasing of the above named premises (or otherwise permitting a third party to occupy the premises) it is imperative you ensure that the existence and provisions of this Connection Confirmation Letter are brought to the attention of such third party, particularly with regard to the MIC and MEC. For information, any such third party should note that it may automatically be bound by the provisions of the NTC's.

Should you wish to discuss your connection please contact us using the details provided above.

If the recipient of this Connection Confirmation Letter is not the end user, please provide a copy of this letter to the end user for their retention.

If any information in this Connection Confirmation Letter is incorrect, please notify us within 10 working days of issue.

Yours sincerely

Bec Sander
L And K Design, Plan And Way

DEPOSIT & GUARANTEE PROTECTION

Dear Policy Holder

Please find enclosed your IWA insurance certificate for the contract with the installer named on the certificate.

PLEASE READ THE TERMS AND CONDITIONS STATED IN THE IWA CERTIFICATE.

Once the installation has been completed please visit www.iwa.biz and complete the 'Policy Holder Feedback' form under the customer section. Please note this can only be completed via the website and once you have submitted the form you will not receive any follow up paperwork. Alternatively you can complete and return the registration form part of the Guarantee Insurance.

IMPORTANT: You must keep a copy of your insurance certificate in the event of needing to make a claim.

Kind regards

IWA

18 & 19 Babbage House, Northampton Science Park, Kings Park Road, Northampton, NN3 6LG
t: 01604 654150 f: 01604 570767 www.iwa.biz

DEPOSIT & GUARANTEE PROTECTION

Certificate Number:
XQ/55/0021462

Guarantee Insurance contracts upto £50,000

Underwritten by Acasta European Insurance Company Limited

CUSTOMER NAME Kenneth Bray SUPPLIER'S NAME Energy Concerns Ltd

ADDRESS: County Bridge Club, 67, St. Oswald Road, Leicester, LE3 6RJ

IWA MEMBERSHIP NUMBER: ETL.01.25 CONTRACT VALUE £ £34,505.00 **(MAX £50,000)**

PLEASE REGISTER THE INSURED WORKMANSHIP GUARANTEE (PRINTED INSIDE THIS FORM) ON COMPLETION OF THE CONTRACT, AND AFTER PAYMENT IN FULL TO THE SUPPLIER, BY RETURNING THE REGISTRATION FORM INSIDE ALONG WITH A COPY OF THE SUPPLIER'S CONTRACT TO IWA, 18 & 19 BABBAGE HOUSE, NORTHAMPTON SCIENCE PARK, KINGS PARK ROAD, MOULTON PARK, NORTHAMPTON, NN3 6LG WITHIN 30 DAYS OF CONTRACT COMPLETION. (YOU ARE ADVISED TO KEEP ALL DOCUMENTATION RELATING TO THIS CERTIFICATE AS IT WILL BE REQUIRED IN THE EVENT OF A CLAIM).

keyfacts

Guarantee Insurance Policy Summary

The following summary does not contain the full terms and conditions of the contract which can be found in the policy document opposite. The summary does not form part of your contract of insurance.

About your policy

(1) Insurer:	This insurance policy is underwritten by Acasta European Insurance Company Limited.
(2) Coverage	The insurance gives (i) Guarantee Insurance of the workmanship only. (i) Insurance Guarantee will indemnify the holder of the Insured Guarantee in the event of the supplier under guarantee being unable to undertake any necessary remedial works under the terms of its own long term guarantee due to its cessation of trading. This cover does not widen or increase the cover given by your supplier's workmanship guarantee.The insurance does not cover any items or work that is not contained within the supplier's contract and is limited to the supplier's workmanship only for the period opposite. If the guarantee does not cover a particular matter, then neither shall this insurance. EMERGENCY repairs and repairs for accidental damage are not part of the cover.Any claim in anyway caused by or resulting from COVID-19 both directly or indirectly is excluded from any cover contained within this certificate.
(3) Guarantee Insurance Claims	The insurers have the right to exclude from cover any remedial work carried out without the agreement of IWA. To ensure that you will be insured for the costs of any particular repair, you should always get their approval in writing before proceeding.
(4) Cancellation:	You have a statutory right to cancel this policy within 14 days from the date of commencing this insurance.
(5) Complaints:	If you wish to make a complaint concerning this policy you should contact: IWA, 18 & 19 Babbage House, Northampton Science park, Kings Park Road, Moulton Park, Northampton, NN3 6LG Telephone: 01604 654150 In the event that you remain dissatisfied, you can refer the matter to the Underwriting Manager (Complaints). The contact details are: Acasta European Insurance Company Limited, Unit 1, 124 Irish Town, Gibraltar, GX11 1AA . Finally, if the matter still remains unresolved once all of the above have been contacted, you can then approach: The Financial Ombudsman Service, South Quay Plaza, 183 Marsh Wall, London, E14 9SR to have the matter resolved as against IWA and or Acasta. There are some instances where the Financial Ombudsman Service is unable to consider complaints. This procedure will not prejudice your right to take legal proceedings.
(6) Compensation:	Acasta European Insurance Company Limited is covered by the Financial Services Compensation Scheme (FSCS). The Insurer is covered by the Financial Services Compensation Scheme, established under the Financial Services and Markets Act 2000 (the "Compensation Scheme"). If the Insurer is unable to meet their obligations under this insurance, an insured Person may be entitled to compensation from the Compensation Scheme. Further information about compensation scheme arrangements is available at www.fscs.org.uk and on 020 941 4100 or 0800 678 1100.
(7) Cease, Ceased or ceasing to trade:	Permanently stops carrying on business activity.

GUARANTEE INSURANCE

Underwritten by Acasta European Insurance Company Limited

SCHEDULE
The Insured: Is the Customer named on this certificate

PERIOD OF COVER:
Up to 5 Years, Commencing from date of completion
Excess £250 (Two Hundred & Fifty Pounds) Payable on each and every claim

ASSIGNMENT
This guarantee is transferable to successors in title, providing that they are the owner occupier of the property detailed in this certificate, on payment of a transfer fee to IWA within 30 days of the sale of the property.

LIMIT OF GUARANTEE
The Maximum limit recoverable hereunder at the date of commencement of this Insured Guarantee is £50,000 or the original cost of the installation whichever is the lesser regardless of the number of claims.

THESE ARE THE FULL TERMS AND CONDITIONS

1. In the event of the supplier of the items under guarantee being unable to undertake any necessary remedial works under the terms of its own long term guarantee due to **cessation of trading**, Insurers will indemnify the holder of the Insured Guarantee for the cost of such work, providing that (a) the IWA has been notified within 30 days of the fault first occurring and (b) the Claims Procedure being adhered to. It is understood that cover provided by this Insured Guarantee is limited to the cost of removal, repair, alteration, rectification or remedial work that is required to be undertaken within the terms and conditions of the LONG TERM GUARANTEE issued by the SUPPLIER/IWA MEMBER COMPANY.
2. Insurers will not be liable for any accidental or consequential loss or damage or other expense as a result of the failure of the products or services provided by the SUPPLIER/IWA MEMBER COMPANY.
3. No cover is provided for faults that occurred (whether notified or not) prior to the supplier **ceasing to trade** other than breaches of building regulations which will be covered.
4. No cover is provided for any items or work carried out that is not stated or contained within the supplier's contract.
5. Any claim in anyway caused by or resulting from COVID-19 both directly or indirectly is excluded from any cover contained within this certificate.
6. Whilst every endeavour will be made to replace products on a like for like basis no liability is accepted for aesthetic differences where an exact match can not be supplied
7. No alteration in the terms of this Insured Guarantee nor any endorsement hereon will be held valid unless approved and signed by the Insurers, who may vary the terms upon giving 28 days notice to any party. This Insurance contains the whole and only agreement in relation to its subject matter. It supersedes and extinguishes any prior agreements, representations and or arrangements of any nature or any statements, whether written or oral by any party and it is accepted that they have not been relied upon.
8. This Insured Guarantee does not cover any loss or damage, which at the time of happening is insured and/or protected by, or would, but for the existence of this Insured Guarantee, be insured or protected by any other existing insurances.
9. No cover is provided for any claim that is the consequence of subsidence or earth movement of any kind caused by any reason whatsoever (this would normally be covered by your buildings insurance).
10. No cover is provided for performance or efficiency related Guarantees or Warranties whether given in writing or verbally by the Installer/Supplier or for the provision of feed in tariffs, grants, subsidies, or any other financial payment or incentive by any organisation or person in relation to this contract.
11. No cover is provided where the contract has not been completed in full. Or if the contract is under a finance or loan agreement and you the customer have stopped payments/cancelled your agreement without paying the contract in full. If this is not the case proof or payments i.e. a statement showing payments have continued or that all payments in full have been made is required at the point you file a claim.
12. No cover is provided for service or maintenance guarantees whether written or verbally agreed by the member company. This will not cover any guarantee extension subject to a service or maintenance of the installation whether written or verbally guaranteed by the member company, before or after they have ceased to trade.
13. No cover is provided for discolouration of any product of any kind whether written or verbally agreed by the member company.
14. £250 excess payable on each and every claim.

You must follow the claims procedure which is on the reverse of this form.

PLEASE COMPLETE FORM BELOW AND RETURN TO IWA, 18 & 19 BABBAGE HOUSE, NORTHAMPTON SCIENCE PARK, KINGS PARK ROAD, MOULTON PARK, NORTHAMPTON, NN3 6LG

Registration form

TO BE COMPLETED AND RETURNED ONLY BY THE CUSTOMER

Certificate Number:
XQ/55/0021462

IWA MEMBERSHIP No.

CONTRACT COMPLETION DATE

CUSTOMER'S NAME

TEL NO (HOME)

TEL NO. (WORK)

ADDRESS LINE 1

ADDRESS LINE 2

ADDRESS LINE 3

COUNTY

POST CODE

EMAIL

TO THE BEST OF MY KNOWLEDGE THIS INSTALLATION IS COMPLETED AND THERE ARE NO FAULTS OR SHORTCOMINGS THAT I AM AWARE OF.

I HAVE PAID THE BALANCE IN FULL OF THE CONTRACT PRICE OF £ . TO THE SUPPLIER NAMED IN THE GUARANTEE INSURANCE CERTIFICATE.

I UNDERSTAND THAT MY GUARANTEE INSURANCE IS INTENDED TO DELIVER THE BENEFITS OF MY SUPPLIER'S GUARANTEE IN THE EVENT THAT MY SUPPLIER **CEASES TO TRADE**, AND THAT THEREFORE THE INSURANCE SHOULD ONLY APPLY IN RESPECT OF FAULTS OR MATTERS OF WHICH I BECOME AWARE AFTER MY SUPPLIER HAS **CEASED TO TRADE**. UNTIL SUCH TIME, I SHOULD OBTAIN REDRESS FROM MY SUPPLIER UNDER THE TERMS OF THE SUPPLIER'S GUARANTEE AS SOON AS I AM ABLE.

I HAVE/HAVE NOT COMPLETED THE SATISFACTION SURVEY OVERLEAF AND ADDED ANY COMMENTS I MAY HAVE.

Customer signature.....Date.....

For further information or advice telephone IWA on

01604 654150 9-5pm Mon-Fri.
or e-mail: enquiries@iwa.biz
IWA, 18 & 19 Babbage House, Northampton Science Park,
Kings Park Road, Moulton Park, Northampton, NN3 6LG

Independent Warranty is Authorised and Regulated by the Financial Conduct Authority

CLAIM PROCEDURE

In the event of any claim under this Insured Workmanship Guarantee the Insurers reserve the right to appoint an authorised IWA Member to carry out work and shall not be liable for any work carried out without written authorisation by IWA. This Insured Workmanship Guarantee does not provide any Emergency Service for such works.

In order to make a claim under this Insured Workmanship Guarantee, the Customer must provide the following:

a)Proof the Supplier has ceased to trade if available, if not IWA will determine the trading position of the supplier.
b)A copy of the Supplier's Contract & Guarantee (to establish that the faults are covered within the Supplier's original Guarantee)
c)Proof of payment (Bank/Building society statement, paid invoice or credit card statement)
d)A fully completed IWA Claim Form.

You may obtain a Claim Form either by telephoning, emailing or writing to IWA. 01604 654150 , enquiries@iwa.biz, 18 & 19 Babbage House, Northampton Science park, Kings Park Road, Moulton Park, Northampton, NN3 6LG

Satisfaction Survey

Please answer all the following questions with regard to your installation.

1) Was the service level,	**Good** ☐	**Average** ☐	**Poor** ☐
2) Did the installers arrive on time ?	**Yes** ☐	**No** ☐	
3) Were the Installers clean & tidy ?	**Yes** ☐	**No** ☐	
4) Has the work been fully completed according to your contract?	**Yes** ☐	**No** ☐	
5) What is your age group?	**18-30** ☐	**31-55** ☐	**56+** ☐

Any other comments _____

_____

_____

Your Signature: _____ Date:_____

Guarantee Insurance

Insurance Product Information Document

Company: IWA

Product: Guarantee Insurance

IWA, 18 & 19 Babbage House, Northampton Science Park, Moulton Park, Northampton, NN3 6LG is authorised and regulated by the Financial Conduct Authority.

This Insurance Product Information Document is only intended to provide a summary of the main coverage and exclusions, and is not personalised to your specific individual needs in any way. Complete pre-contractual and contractual information on the product is provided in your policy documentation.

What is this type of insurance?

This insurance provides cover for faults which occur in the event of the supplier ceasing to trade during the Guarantee Period provided the faults are covered by the suppliers original guarantee (maximum up to 5 years).

What is insured?

✓ This insurance will arrange for necessary remedial works required under the terms and conditions of the supplier's own guarantee in the event of the supplier ceasing to trade.

Are there any restrictions on cover?

! Period of cover of the policy is a maximum of up to 5 years from the date of completion or the installer's original guarantee whichever is the lesser period.

! Insurers reserve the right to exclude from cover any remedial works carried out without written consent from IWA.

! The maximum amount recoverable (outlined on the policy) from the date of commencement of the insured guarantee or the original cost of the installation whichever is the lesser regardless of the number of claims made.

What is not insured?

✗ This policy does not cover any accidental or consequential loss or damage.

✗ No cover is provided for subsidence or earth movement.

✗ Any performance or efficiency related guarantees are not covered including feed in tariffs, grants, subsidies or financial incentives or benefits of any kind.

✗ This policy does not provide cover for any service or maintenance packages issued by the supplier.

✗ No cover is provided for discolouration of any product.

✗ This policy does not provide an emergency service for remedial works or repairs.

Where am I covered?

✓ In the United Kingdom

What are my obligations?

- To complete and return the registration form once the installation has been completed or at the point of making a claim.
- Observe the terms, conditions and exclusions of this policy.
- Follow our claims procedure as advised and provide all relevant documentation as requested.
- Maintain all property and take all reasonable steps to minimise the amount payable under this insurance.

When and how do I pay?

There is no fee for this Guarantee Insurance policy as this will be included in the service you have agreed with your contractor.

When does the cover start and end?

This policy will run for a maximum of 5 years from the date of completion of the contract or the installers own guarantee whichever is the lesser period.

How do I cancel the contract?

To cancel the policy, you must contact your supplier as per the terms and conditions of their own contract. As you have not paid a fee for this policy there will be no return of any premiums.

Preliminary

Vertex S+

N-type i-TOPCon

MONOFACIAL DUAL GLASS MODULE

TSM-NEG18R.25 **485-510W**

510W / MAXIMUM POWER OUTPUT

22.9% / MAXIMUM EFFICIENCY

High customer value

- Lower LCOE (levelized cost of energy), reduced BOS (balance of system) cost, shorter payback time
- Designed for compatibility with existing mainstream system components
- High module power, high string power and low voltage design
- Easy to handle and install on roofs with excellent size and light weight

High power up to 510W

- Up to 22.9% module efficiency , on 210 innovation platform
- Patented i-TOPCon technology with continuous efficiency improvement, including contact resistance reduction, rear reflection enhancement and edge quality repairment

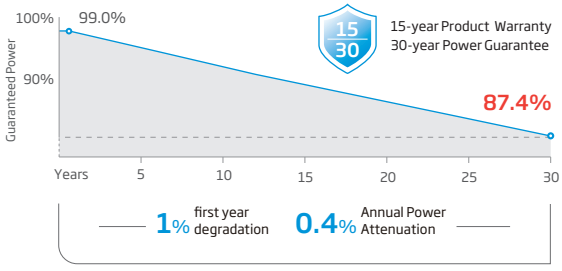
Dual-glass design, high reliability

- Less prone to micro-cracks and scratches on the back during installation
- Applicable in harsh environments such as salt, ammonia, sand, high temperature and high humidity areas with excellent fire rating, weather resistance, salt spray, sand dust, ammonia performance
- Mechanical performance up to 5400 Pa positive load and 2400 Pa negative load

High energy yield

- Excellent low irradiation performance, validated by 3rd party
- Lower temperature coefficient (-0.29%/°C) and operating temperature

Performance Warranty



* Please refer to product warranty for details

Comprehensive Products and System Certificates

IEC61215/IEC61730/IEC61701/IEC62716
ISO 9001: Quality Management System
ISO 14001: Environmental Management System
ISO14064: Greenhouse Gases Emissions Verification
ISO45001: Occupational Health and Safety Management System

Version number: TSM_EN_2024_PA1

Trinasolar

Vertex S+

N-type i-TOPCon MONOFACIAL DUAL GLASS MODULE

ELECTRICAL DATA (STC)

Peak Power Watts-PMAX(Wp)*	485	490	495	500	505	510
Power Tolerance-PMAX(Wp)*	0 ~ +3%					
Maximum Power Voltage-VMPP (V)	32.7	32.9	33.1	33.3	33.5	33.7
Maximum Power Current-IMPP (A)	14.84	14.91	14.97	15.03	15.09	15.14
Open Circuit Voltage-VOC (V)	39.4	39.6	39.8	40.1	40.3	40.6
Short Circuit Current-ISC (A)	15.76	15.80	15.83	15.86	15.89	15.93
Module Efficiency η m (%)	21.8	22.0	22.3	22.5	22.7	22.9

STC: Irrdiance 1000W/m², Cell Temperature 25°C, Air Mass AM1.5. *Measuring tolerance: ±3%.

ELECTRICAL DATA (NOCT)

Peak Power Watts-PMAX(Wp)*	371	375	378	382	386	390
Maximum Power Voltage-VMPP (V)	30.8	31.0	31.3	31.5	31.8	31.9
Maximum Power Current-IMPP (A)	12.02	12.06	12.08	12.11	12.15	12.21
Open Circuit Voltage-VOC (V)	37.4	37.6	37.7	38.0	38.3	38.5
Short Circuit Current-ISC (A)	12.70	12.74	12.76	12.78	12.81	12.84

NOCT: Irradiance at 800W/m², Ambient Temperature 20°C, Wind Speed 1m/s.

TEMPERATURE RATINGS

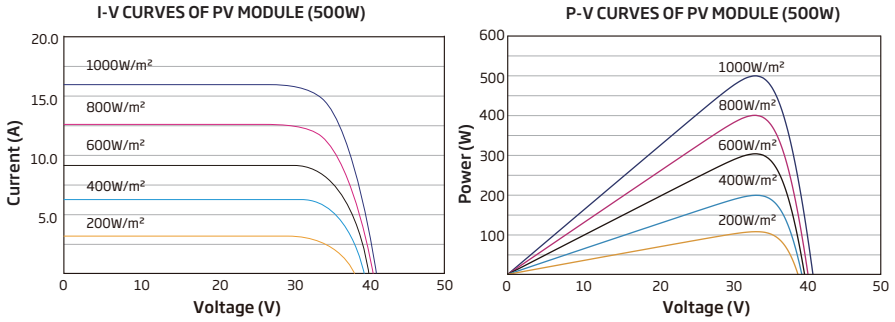
NOCT (Nominal Operating Cell Temperature)	43℃ (±2℃)
Temperature Coefficient of PMAX	- 0.29% /℃
Temperature Coefficient of VOC	- 0.24% /℃
Temperature Coefficient of ISC	0.04% /℃

MAXIMUM RATINGS

Operational Temperature	-40~+85℃
Maximum System Voltage	1500V DC (IEC)
Max Series Fuse Rating	30A

CURVES OF PV MODULE

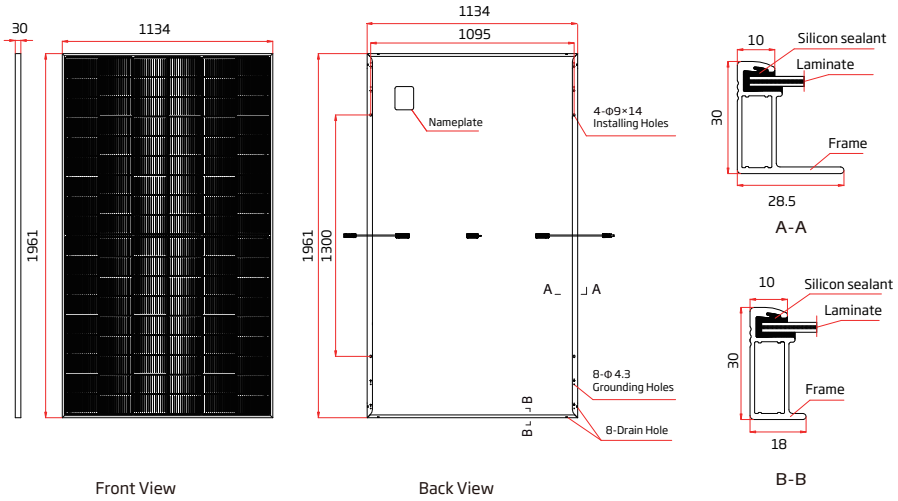
Preliminary



MECHANICAL DATA

Solar Cells	N-type i-TOPCon Monocrystalline
No. of cells	108 cells
Module Dimensions	1961×1134×30 mm (77.20×44.65×1.18 inches)
Weight	23.5 kg (51.8 lb)
Front Glass	1.6mm (0.06inches),High Transmission, AR Coated Heat Strengthened Glass
Back Glass	1.6mm (0.06 inches), Heat Strengthened Glass
Frame	30mm(1.18 inches) Anodized Aluminium Alloy, Black
J-Box	IP 68 rated
Cables	Photovoltaic Technology Cable 4.0mm² (0.006 inches²) Portrait: 350/280 mm(13.78/11.02 inches) Length can be customized
Connector	MC4 EVO2 / TS4 Plus / TS4*
Packaging	Modules per box: 36 pieces Modules per 40' container: 864 pieces

*Please refer to regional datasheet for specified connector.



www.trinasolar.com

CAUTION: READ SAFETY AND INSTALLATION INSTRUCTIONS BEFORE USING THE PRODUCT.

Version number: TSM_EN_2024_PA1

Trinasolar

SIGENERGY

Sigen Energy Controller

5.0 - 25.0 kW Three Phase

- EMS inside for precise control
- Up to 4 MPP. trackers
- Multi-source black start
- On & off-grid compatibility
- IP66 system protection rating

www.sigenergy.com

Sigen Energy Controller 5.0-25.0 kW Three Phase

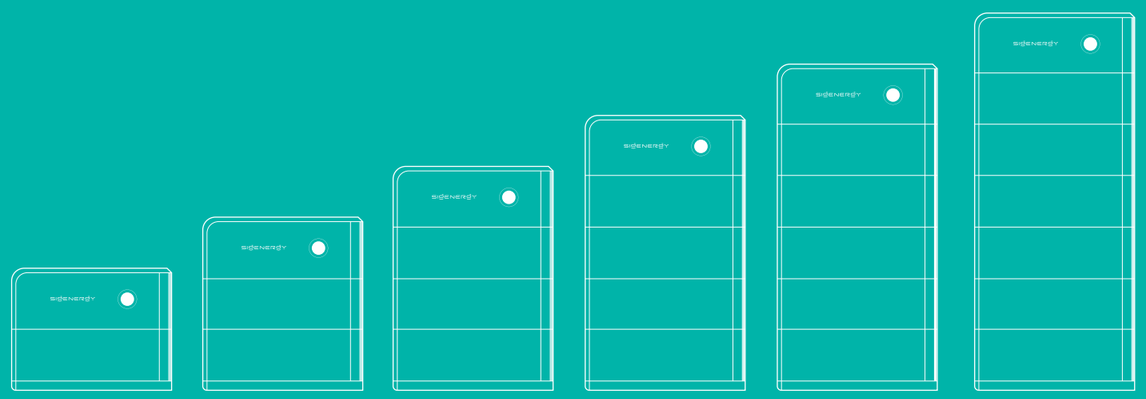
SigenStor EC	5.0 TP	6.0 TP	8.0 TP	10.0 TP	12.0 TP	15.0 TP	17.0 TP	20.0 TP	25.0 TP	Units
DC Input (from PV)										
Max. PV power	8000	9600	12800	16000	19200	24000	27200	32000	40000	W
Max. DC input voltage	1100									V
Nominal DC input voltage	600									V
Start-up voltage	180									V
MPPT voltage range	160 ~ 1000									V
Number of MPP. trackers	2			3			4			
Number of PV strings per MPPT	1									
Max. input current per MPPT	16									A
Max. short-circuit current per MPPT	20									A
AC Output (on-grid)										
Nominal output power	5000	6000	8000	10000	12000	15000	17000	20000	25000	W
Max. output apparent power	5500	6600	8800	11000	13200	16500	18700	22000	27500	VA
Nominal output current	7.6	9.1	12.2	15.2	18.2	22.8	25.8	30.4	38.0	A
Max. output current	8.4	10.0	13.4	16.7	20.1	25.1	28.4	33.4	41.8	A
Nominal output voltage	380 / 400									V
Nominal grid frequency	50 / 60									Hz
Power factor	0.8 leading ~ 0.8 lagging									
Total current harmonic distortion	THDi < 2%									
Efficiency										
Max. efficiency	98.1%	98.2%	98.3%	98.3%	98.3%	98.3%	98.3%	98.3%	98.3%	
European efficiency	96.1%	96.6%	97.1%	97.5%	97.7%	97.9%	97.9%	97.9%	98.0%	
AC Output (backup)										
Peak output power (10 seconds)	7500	9000	12000	15000	18000	22500	25500	30000	30000	W
Nominal output voltage	380 / 400									V
Nominal output frequency	50 / 60									Hz
Power factor	0.8 leading ~ 0.8 lagging									
Total voltage harmonic distortion	THDv < 2%									
Disruption time of backup switch [1]	0									ms
Battery Connection										
Battery module models	SigenStor BAT 5.0 / 8.0									
Number of modules per controller	1 ~ 6									pcs
Battery module voltage range	600 ~ 900									V
Protection										
Safety protection feature	DC reverse polarity protection, Insulation monitoring, Residual current monitoring, Arc fault circuit interrupter [2], AC overcurrent/overvoltage/short-circuit protection. Type II DC/AC surge protection, Anti-islanding protection									
General Data										
Dimensions (W / H / D)	700 / 300 / 260									mm
Weight	36									kg
Storage temperature range	-40 ~ 70									°C
Operating temperature range	-30 ~ 60									°C
Relative humidity range	0% ~ 95%									
Max. operating altitude	4000									m
Cooling	Smart air cooling									
System ingress protection rating	IP66									
Communication	WLAN / Fast Ethernet / RS485 / Sigen CommMod (4G/3G/2G)									
Standard Compliance										
Standard [3]	IEC/EN 62109-1, IEC/EN 62109-2, IEC/EN 61000-6-1, IEC/EN 61000-6-2									

1. This refers to the load-side disruption time, to achieve this functionality Sigen Energy Gateway needs to be used together with Sigen Energy Controller and Sigen Battery. Test conditions: In the open-circuit state of the power grid, the nominal power of the Sigen Energy Controller is higher than the total power of the home loads.
2. This is an optional feature only supported in certain models, please contact Sigenergy for more information.
3. For all standards refer to the certificates category in the Sigenergy website.

Sigen Battery 5.0 / 8.0 kWh

SigenStor BAT	5.0	8.0	Units
Performance Specification			
Battery type	LiFePO4		
Total energy capacity	5.38	8.06	kWh
Usable energy capacity [1]	5.2	7.8	kWh
Battery modules voltage range (single phase system)	300 ~ 600		V
Battery modules voltage range (three phase system)	600 ~ 900		V
Max. charge / discharge power	2500	4000	W
Peak charge / discharge power (10 seconds)	3750	6000	W
General Data			
Weight	55	70	kg
Dimensions (W / H / D)	767 / 270 / 260		mm
Storage temperature range	-25 ~ 60		°C
Operating temperature range	-20 ~ 55		°C
Relative humidity range	5% ~ 95%		
Max. operating altitude	4000		m
Cooling	Natural convection		
System ingress protection rating	IP66		
Installation method	Floor standing / Wall-mounted		
Standard Compliance			
Standard	IEC/EN 60730-1, UN 38.3, IEC/EN 62619, IEC/EN 63056, IEC/EN 62040		

1. Test conditions: 100% depth of discharge, 0.2C rate charge & discharge averagely at 25°C, at the beginning of life.



SigenStor

ENJOY GREEN ENERGY

- Sigen Energy Controller
- Sigen EV DC Charging Module
- Sigen Battery

Let numbers talk
Sigenergy is raising industry standards

15 mins — stackable installation
5 layers — battery protection
280 Ah — long cycle-life battery cell
0 ms — load side disruption
5 mins — fast commissioning
5 layers — system protection
V2X — bi-directional charging
1-click — full system diagnosis

Simple · Versatile · Robust · Intelligent

www.sigenergy.com

Sigen Energy Controller 3.0-6.0 kW Single Phase

SigenStor EC	3.0 SP	3.6 SP	4.0 SP	4.6 SP	5.0 SP	6.0 SP	Units
DC Input (from PV)							
Max. PV power	6000	7360	8000	9200	10000	12000	W
Max. DC input voltage	600						V
Nominal DC input voltage	350						V
Start-up voltage	100						V
MPPT voltage range	50 ~ 550						V
Number of MPP. trackers	2						
Number of PV strings per MPPT	1						
Max. input current per MPPT	16						A
Max. short-circuit current per MPPT	20						A
AC Output (on-grid)							
Nominal output power	3000	3680	4000	4600	5000	6000	W
Max. output apparent power	3300	3680	4400	5000	5500	6600	VA
Nominal output current	13.6	16.0	18.2	20.9	22.7	27.3	A
Max. output current	15.0	16.0	20.0	22.7	25.0	30.0	A
Nominal output voltage	220 / 230 / 240						V
Nominal grid frequency	50 / 60						Hz
Power factor	0.8 leading ~ 0.8 lagging						
Total current harmonic distortion	THDi < 2%						
Efficiency							
Max. efficiency	98.0%						
European efficiency	97.0%	97.1%	97.2%	97.3%	97.4%	97.4%	
AC Output (backup)							
Peak output power (10 seconds)	4500	5520	6000	6900	7500	9000	W
Nominal output voltage	220 / 230 / 240						V
Nominal output frequency	50 / 60						Hz
Power factor	0.8 leading ~ 0.8 lagging						
Total voltage harmonic distortion	THDv < 2%						
Disruption time of backup switch [1]	0						ms
Battery Connection							
Battery module models	SigenStor BAT 5.0 / 8.0						
Number of modules per controller	1 ~ 6						pcs
Battery module voltage range	300 ~ 600						V
Protection							
Safety protection feature	DC ground fault protection, Arc fault circuit interrupter, DC reverse polarity protection, Insulation monitoring, Residual current monitoring, Type II DC/AC surge protection, Anti-islanding protection, AC overcurrent/overvoltage/short-circuit protection.						
General Data							
Dimensions (W / H / D)	700 / 300 / 245						mm
Weight	18						kg
Storage temperature range	-40 ~ 70						°C
Operating temperature range	-30 ~ 60						°C
Relative humidity range	0% ~ 95%						
Max. operating altitude	4000						m
Cooling	Natural convection						
System ingress protection rating	IP66						
Communication	WLAN / Fast Ethernet / RS485 / Sigen CommMod (4G/3G/2G)						
Standard Compliance							
Standard [2]	IEC/EN 62109-1, IEC/EN 62109-2, IEC/EN 62477, IEC/EN 61000-6-1, IEC/EN 61000-6-2						

1. This refers to the load-side disruption time, to achieve this functionality Sigen Energy Gateway needs to be used together with Sigen Energy Controller and Sigen Battery. Test conditions: In the open-circuit state of the power grid, the nominal power of the Sigen Energy Controller is higher than the total power of the home loads.
2. For all standards refer to the certificates category in the Sigenergy website.

Sigen Energy Controller 5.0-25.0 kW Three Phase

SigenStor EC	5.0 TP	6.0 TP	8.0 TP	10.0 TP	12.0 TP	15.0 TP	17.0 TP	20.0 TP	25.0 TP	Units
DC Input (from PV)										
Max. PV power	8000	9600	12800	16000	19200	24000	27200	32000	40000	W
Max. DC input voltage	1100									V
Nominal DC input voltage	600									V
Start-up voltage	180									V
MPPT voltage range	160 ~ 1000									V
Number of MPP. trackers	2			3			4			
Number of PV strings per MPPT	1									
Max. input current per MPPT	16									A
Max. short-circuit current per MPPT	20									A
AC Output (on-grid)										
Nominal output power	5000	6000	8000	10000	12000	15000	17000	20000	25000	W
Max. output apparent power	5500	6600	8800	11000	13200	16500	18700	22000	27500	VA
Nominal output current	7.6	9.1	12.2	15.2	18.2	22.8	25.8	30.4	38.0	A
Max. output current	8.4	10.0	13.4	16.7	20.1	25.1	28.4	33.4	41.8	A
Nominal output voltage	380 / 400									V
Nominal grid frequency	50 / 60									Hz
Power factor	0.8 leading ~ 0.8 lagging									
Total current harmonic distortion	THDi < 2%									
Efficiency										
Max. efficiency	98.1%	98.2%	98.3%	98.3%	98.3%	98.3%	98.3%	98.3%	98.3%	
European efficiency	96.1%	96.6%	97.1%	97.5%	97.7%	97.9%	97.9%	97.9%	98.0%	
AC Output (backup)										
Peak output power (10 seconds)	7500	9000	12000	15000	18000	22500	25500	30000	30000	W
Nominal output voltage	380 / 400									V
Nominal output frequency	50 / 60									Hz
Power factor	0.8 leading ~ 0.8 lagging									
Total voltage harmonic distortion	THDv < 2%									
Disruption time of backup switch [1]	0									ms
Battery Connection										
Battery module models	SigenStor BAT 5.0 / 8.0									
Number of modules per controller	1 ~ 6									pcs
Battery module voltage range	600 ~ 900									V
Protection										
Safety protection feature	DC ground fault protection, Arc fault circuit interrupter, DC reverse polarity protection, Insulation monitoring, Residual current monitoring, Type II DC/AC surge protection, Anti-islanding protection, AC overcurrent/overvoltage/short-circuit protection.									
General Data										
Dimensions (W / H / D)	700 / 300 / 260									mm
Weight	36									kg
Storage temperature range	-40 ~ 70									°C
Operating temperature range	-30 ~ 60									°C
Relative humidity range	0% ~ 95%									
Max. operating altitude	4000									m
Cooling	Smart air cooling									
System ingress protection rating	IP66									
Communication	WLAN / Fast Ethernet / RS485 / Sigen CommMod (4G/3G/2G)									
Standard Compliance										
Standard [2]	IEC/EN 62109-1, IEC/EN 62109-2, IEC/EN 61000-6-1, IEC/EN 61000-6-2									

1. This refers to the load-side disruption time, to achieve this functionality Sigen Energy Gateway needs to be used together with Sigen Energy Controller and Sigen Battery. Test conditions: In the open-circuit state of the power grid, the nominal power of the Sigen Energy Controller is higher than the total power of the home loads.
2. For all standards refer to the certificates category in the Sigenergy website.

GLOBAL LIMITED WARRANTY FOR TRINA SOLAR BRAND CRYSTALLINE SOLAR PHOTOVOLTAIC MODULES

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Global Limited Warranty

Trina Solar Co., Ltd ("Trina Solar") hereby grants the following Global Limited Warranty to the first customer installing (for its own use) (the "Buyer") any of the specified (and no other) brand models of solar photovoltaic modules of Trina Solar listed below and remaining at the original place of installation without having them moved or disassembled after initial installation (the "Products"):

1) Warranted Products

This Global Limited Warranty shall only apply to the following Products:

a) P-type Poly of Back Sheet Products

(i)

TSM-***PA03	TSM-***PA05	TSM-***PA05.05	TSM-***PA05.08	TSM-***PA05A
TSM-***PA05A.05	TSM-***PA05A.08	TSM-***PA14	TSM-***PA14A	TSM-***PA05.002
TSM-***PA05.052	TSM-***PA05.082	TSM-***PC03	TSM-***PC05	TSM-***PC05.01
TSM-***PC05.05	TSM-***PC05.08	TSM-***PC05A	TSM-***PC05A.05	TSM-***PC05A.08
TSM-***PC05B	TSM-***PC05B.05	TSM-***PC05B.08	TSM-***PC14	TSM-***PC14.08
TSM-***PC14A	TSM-***PC05A.002	TSM-***PC05A.052	TSM-***PC05A.082	TSM-***PC05A.003
TSM-***PC14.002	TSM-***PC14.082	TSM-***PC06	TSM-***PC06.08	TSM-***PC05A.08(II)
TSM-***PC14(II)	TSM-***PC14.08(II)	TSM-***PC05A.002(II)	TSM-***PC05A.052(II)	TSM-***PC05A.082(II)
TSM-***PC14.002(II)	TSM-***PC14.082(II)	TSM-***PD05	TSM-***PD05.05	TSM-***PD05.08
TSM-***PD05.50	TSM-***PD05.002	TSM-***PD05.052	TSM-***PD05.082	TSM-***PD14
TSM-***PD14.08	TSM-***PD14.002	TSM-***PD05(II)	TSM-***PD05.05(II)	TSM-***PD05.08(II)
TSM-***PD14(II)	TSM-***PD14.08(II)	TSM-***PD05.00S	TSM-***PD05.05S	TSM-***PD05.08S
TSM-***PD05.05U	TSM-***PD05.08U	TSM-***PD05.00C	TSM-***PD05.05C	TSM-***PD05.08C
TSM-***PD05.00D	TSM-***PD05.05D	TSM-***PD05.08D	TSM-***PD14.00C	TSM-***PE05A
TSM-***PE05A.08	TSM-***PE14A	TSM-***PE14A.08	TSM-***PE05A(II)	TSM-***PE05A.08(II)
TSM-***PE14A(II)	TSM-***PE14A.08(II)	TSM-***PE05H	TSM-***PE05H.08	TSM-***PE14H
TSM-***PE14H.08	TSM-***PD05H	TSM-***PD14H	TSM-***PD05HB.09	TSM-***PE15H
TSM-***PE15H.08	TSM-***PE15H.09	TSM-***PE06H	TSM-***PE06H.08	TSM-***PE06H.09
TSM-***PE15A	TSM-***PE15A.08	TSM-***PE15A.09	TSM-***PE06A	TSM-***PE06A.08
TSM-***PE06A.09	TSM-***PD06H	TSM-***PD06H.05	TSM-***PD06H.08	TSM-***PD06H.09
TSM-***PD15H	TSM-***PD15H.08	TSM-***PD15H.09	TSM-***PC06A	

(ii)

TSM-***PA05.10	TSM-***PA05.15	TSM-***PA05.18	TSM-***PA05A.10	TSM-***PA05A.15
TSM-***PA05A.18	TSM-***PC05.10	TSM-***PC05.15	TSM-***PC05.18	TSM-***PC05A.10
TSM-***PC05A.15	TSM-***PC05A.18	TSM-***PC05A.10(II)	TSM-***PC05A.15(II)	TSM-***PC05A.18 (II)
TSM-***PD05.T0	T TSM-***PD05.T8	TSM-***PD05.10	TSM-***PD05.15	TSM-***PD05.18
TSM-***PD14.T0	TSM-***PD14.T8	TSM-***PD14.10	TSM-***PD14.15	TSM-***PD14.18
TSM-***PD05.T0(II)	TSM-***PD05.T8(II)	TSM-***PD14.T0(II)	TSM-***PD14.T8(II)	TSM-***PE05A.T0
TSM-***PE05A.T8	TSM-***PE05A.T9	TSM-***PE14A.T0	TSM-***PE14A.T8	TSM-***PE14A.T9
TSM-***PE14B.T0	TSM-***PE14B.T8	TSM-***PE14B.T9	TSM-***PE14B.T0(II)	TSM-***PE14B.T8(II)
TSM-***PE14B.T9(II)	TSM-***PE14HB.T0	TSM-***PE14HB.T8	TSM-***PE14HB.T9	TSM-***PE14HB.T0(II)
TSM-***PE14HB.T8(II)	TSM-***PE14HB.T9(II)	TSM-***PE05A.T0(II)	TSM-***PE05A.T8(II)	TSM-***PE05A.T9(II)
TSM-***PE14A.T0(II)	TSM-***PE14A.T8(II)	TSM-***PE14A.T9(II)	TSM-***PE05H.T0	TSM-***PE05H.T8
TSM-***PE05H.T9	TSM-***PE05H.T0(II)	TSM-***PE05H.T8(II)	TSM-***PE05H.T9(II)	TSM-***PE14H.T0
TSM-***PE14H.T8	TSM-***PD05H.T0	TSM-***PD05H.T8	TSM-***PD14H.T0	TSM-***PD14H.T8
TSM-***PD05HB.T9	TSM-***PE15H.T0	TSM-***PE15H.T8	TSM-***PE15H.T9	TSM-***PE06H.T0
TSM-***PE06H.T8	TSM-***PE06H.T9	TSM-***PE06H.T0(II)	TSM-***PE06H.T8(II)	TSM-***PE06H.T9(II)
TSM-***PE15A.T0	TSM-***PE15A.T8	TSM-***PE15A.T9	TSM-***PE06A.T0	TSM-***PE06A.T0
TSM-***PE06A.T8	TSM-***PE06A.T9	TSM-***PD06H.T0	TSM-***PD06H.T8	TSM-***PD06H.T9
TSM-***PD15H.T0	TSM-***PD15H.T8	TSM-***PD15H.T9		

b) P-type Mono PERC of Back Sheet Products

(i)

TSM-***DA01	TSM-***DA01.05	TSM-***DA01A	TSM-***DA01A.05	TSM-***DA01A.08
TSM- ***DA03	TSM-***DA05	TSM-***DA01A.002	TSM-***DA01A.052	TSM-***DA01A.082
TSM-***DC01	TSM-***DC01.01	TSM-***DC01.05	TSM-***DC01A	TSM-***DC01A.05
TSM-***DC01A.08	TSM-***DC03	TSM-***DC05	TSM-***DC80	TSM-***DC80.08
TSM-***DC01A.002	TSM-***DC01A.052	TSM-***DC01A.082	TSM-***DC05A	TSM-***DC05A.05
TSM-***DC05A.08	TSM-***DC05A.002	TSM-***DC05A.052	TSM***DC05A.082	TSM-***DC06
TSM- ***DC06.08	TSM-***DC03A(II)	TSM-***DC03A.05(II)	TSM-***DC03A.08(II)	TSM-***DC05A(II)
TSM-***DC05A.05(II)	TSM-***DC05A.08(II)	TSM-***DC05A.002(II)	TSM-***DC05A.052(II)	TSM-***DC05A.082(II)
TSM-***DC06.08(II)	TSM-***DD05A(II)	TSM-***DD05A.05(II)	TSM-***DD05A.08(II)	TSM-***DD14A(II)
TSM-***DD14A.08(II)	TSM-***DD05A.052(II)	TSM-***DD05A.082(II)	TSM-***DD05A.05S(II)	TSM-***DD05A.08S(II)
TSM-***DD05A.05U(II)	TSM-***DD05A.08U(II)	TSM-***DE05A(II)	TSM-***DE05A.08(II)	TSM-***DE14A(II)
TSM-***DE14A.08(II)	TSM-***DE05H(II)	TSM-***DE05H.08(II)	TSM-***DE14H(II)	TSM-***DE14H.08(II)
TSM-***DD05H(II)	TSM-***DD14H(II)	TSM-***DE06H(II)	TSM-***DE06H.08(II)	TSM-***DE06H.09(II)
TSM-***DE06M(II)	TSM-***DE06M.09(II)	TSM-***DE15H(II)	TSM-***DE15H.08(II)	TSM-***DE15H.09(II)
TSM-***DE15M(II)	TSM-***DE15M.08(II)	TSM-***DE15M.09(II)	TSM-***DE06A(II)	TSM-***DE06A.08(II)
TSM-***DE06A.09(II)	TSM-***DE15A(II)	TSM-***DE15A.08(II)	TSM-***DE15A.09(II)	TSM-***DD15M (II)
TSM-***DD15M.08 (II)	TSM-***DD15M.09 (II)	TSM-***DD06M (II)	TSM-***DD06H (II)	TSM-***DD06H.05 (II)
TSM-***DD06H.08(II)	TSM-***DD15H(II)	TSM-***DD15H.05(II)	TSM-***DD15H.08(II)	TSM-***DE15X(II)
TSM-***PE15H(II)	TSM-***PE06H(II)	TSM-***PE15M(II)	TSM-***PE06M(II)	TSM-***PE17H(II)
TSM-***PE08H(II)	TSM-***PE17M(II)	TSM-***PE08M(II)		

(ii)

TSM-***DA01A.10	TM-***DA01A.15	TSM-***DA01A.18	TSM-***DC01A.10	TSM-***DC01A.15
TSM-***DC01A.18	TSM-***DD05A.T0(II)	TSM-***DD05A.T8(II)	TSM-***DD14A.T0(II)	TSM-***DD14A.T8(II)
TSM-***DE05A.T0(II)	TSM-***DE05A.T8(II)	TSM-***DE05A.T9(II)	TSM-***DE14A.T0(II)	TSM-***DE14A.T8(II)
TSM-***DE14A.T9(II)	TSM-***DE14B.T0(II)	TSM-***DE14B.T8(II)	TSM-***DE14B.T9(II)	TSM-***DE05H.T0(II)
TSM-***DE05H.T8(II)	TSM-***DE14H.T0(II)	TSM-***DE14H.T8(II)	TSM-***DE14H.T9(II)	TSM-***DD05H.T0(II)
TSM-***DD05H.T8(II)	TSM-***DD14H.T0(II)	TSM-***DD14H.T8(II)	TSM-***DE06H.T0(II)	TSM-***DE06H.T8(II)
TSM-***DE06H.T9(II)	TSM-***DE06H.18(II)	TSM-***DE06M.T0(II)	TSM-***DE06M.T8(II)	TSM-***DE06M.T9(II)
TSM-***DD06M.T8(II)	TSM-***DE15H.T0(II)	TSM-***DE15H.T8(II)	TSM-***DE15H.T9(II)	TSM-***DE15M.T0(II)
TSM-***DE15M.T8(II)	TSM-***DE15M.T9(II)	TSM-***DE06A.T0(II)	TSM-***DE06A.T8(II)	TSM-***DE06A.T9(II)
TSM-***DE15A.T0(II)	TSM-***DE15A.T8(II)	TSM-***DE15A.T9(II)	TSM-***DE15B.T0(II)	TSM-***DE15B.T8(II)
TSM-***DE15B.T9(II)	TSM-***DD15M.T0(II)	TSM-***DD15M.T8(II)	TSM-***DD15M.T9(II)	TSM-***DD06M.18(II)
TSM-***DD06M.T0(II)	TSM-***DD06M.T8(II)	TSM-***DD06M.T9(II)	TSM-***DD06H.T0(II)	TSM-***DD06H.T9(II)
TSM-***DD06H.T8(II)	TSM-***DD06H.18(II)	TSM-***DD06A.T0(II)	TSM-***DD06A.T8(II)	TSM-***DD06A.T9(II)
TSM-***DD15A.T0(II)	TSM-***DD15A.T8(II)	TSM-***DD15A.T9(II)	TSM-***PE15H.T0(II)	TSM-***PE06H.T0(II)
TSM-***PE15M.T0(II)	TSM-***PE06M.T0(II)	TSM-***PE17H.T0(II)	TSM-***PE08H.T0(II)	TSM-***PE17M.T0(II)
TSM-***PE08M.T0(II)				

(iii)

TSM-***DD06M.05(II)	TSM-***DE06M.05(II)	TSM-***DE06X.05(II)	TSM-***DD06X.05(II)	TSM-***DE09.05
TSM-***DD09.05	TSM-***DE09.B5	TSM-***DE09R.05	TSM-***DE09R.B5	TSM-***DE09.05W
TSM-***DE09R.05W	TSM-***DE09R.B5W			

(iv)

TSM-***DE08M(II)	TSM-***DD08M(II)	TSM-***DE17M(II)	TSM-***DD17M(II)	TSM-***DE17M.08(II)
TSM-***DD17M.08(II)	TSM-***DE18M(II)	TSM-***DD18M(II)	TSM-***DE21	TSM-***DE21.08
TSM-***DD21	TSM-***DD21.08	TSM-***DE19	TSM-***DE19.08	TSM-***DD19
TSM-***DD19.08	TSM-***DE20	TSM-***DE20.08	TSM-***DD20	TSM-***DD20.08
TSM-***DE18	TSM-***DE18.08	TSM-***DD18	TSM-***DD18.08	TSM-***DD09
TSM-***DE15V(II)	TSM-***DE09	TSM-***DE15MB(II)	TSM-***DE171H(II)	TSM-***DC082H.08(II)
TSM-***DE20.B0	TSM-***DE09.B0	TSM-***DE09R	TSM-***DE09R.B0	TSM-***DE19R
TSM-***DE18M.W(II)	TSM-***DE21.W	TSM-***DE19.W	TSM-***DE20.W	TSM-***DE09R.W
TSM-***DE09R.B0W	TSM-***DE19R.W	TSM-***DE21.70	TSM-***DE19R.70	

(v)

TSM-***DE08M.T0(II),	TSM-***DE17M.T0(II)	TSM-***DD08M.T0(II)	TSM-***DD17M.T0(II)	TSM-***DE08M.T8(II)
TSM-***DE17M.T8(II)	TSM-***DD08M.T8(II)	TSM-***DD17M.T8(II)	TSM-***DE18M.T0(II)	TSM-***DD18M.T0(II)
TSM-***DE18M.T8(II)	TSM-***DD18M.T8(II)			

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TSM-***DE06XC.08(II)	TSM-***DD06XC.08(II)	TSM-***DE09.08	TSM-***DD09.08	TSM-***DD08M.08(II)
TSM-***DE08M.08(II)	TSM-*** DD06M.08(II)	TSM-*** DE06M.08(II)	TSM-***DE18M.08(II)	TSM-***DD18M.08(II)
TSM-***DE09.B8	TSM-***DE09R.08	TSM-***DE09R.B8	TSM-***DE09.08W	TSM-***DE18M.08W(II)
TSM-***DE09R.08W	TSM-***DE09R.B8W			

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TSM-***DE19C

(viii)

TSM-***DE06XC.07(II)	TSM-***DE06XC.05(II)	TSM-***DE09C.07	TSM-***DE09C.05

c) N-type i-TOPCon of Back Sheet Products

(i)

TSM-***NE09RC.05	TSM-***NE09R.05	TSM-***NE09RH.05

(ii)

TSM-***NE19R	TSM-***NE20	TSM-***NE21

(iii)

TSM-***NE19R.70	TSM-***NE21.70

(iv)

TSM-***NE19RC

d) P-type Polycrystalline of Mono-facial Dual Glass Products

(i)

TSM-***PDG5	TSM-***PDG5.07	TSM-***PDG5.50	TSM-***PEG5	TSM-***PEG5.07
TSM-***PEG5.50	TSM-***PEG14	TSM-***PEG14(II)	TSM-***PEG40.40	TSM-***PEG40.47
TSM-***PEG40.07	TSM-***PEG5.40	TSM-***PEG5.47	TSM-***PEG14.40	TSM-***PEG14.47
TSM-***PEG5H	TSM-***PEG14H	TSM-***PEG5H.40	TSM-***PEG5H.07	TSM-***PEG5H.47
TSM-***PEG14H.40	TSM-**PEG14H.07	TSM-***PEG14H.47	TSM-***PEG5H(II)	TSM-***PEG5H.40(II)
TSM-***PEG5H.07(II)	TSM-***PEG5H.47(II)	TSM-***PEG14H(II)	TSM-***PEG14H.40(II)	TSM-***PEG14H.07(II)
TSM-***PEG14H.47(II)	TSM-***PEG15H	TSM-***PEG15	TSM-***PEG15H(II)	TSM-***PEG15(II)
TSM-***PEG6H	TSM-***PEG6	TSM-***PEG6(II)	TSM-***PEG15M(II)	TSM-***PEG6M (II)
TSM-***PEG14.40(II)				

(ii)

TSM-***PEG5.20	TSM-***PEG5.27	TSM-***PEG14.20	TSM-**PEG5H.20	TSM-***PEG5H.27
TSM-***PEG14H.20	TSM-***PEG14H.27	TSM-***PEG5H.20(II)	TSM-***PEG5H.27(II)	TSM-***PEG14H.20(II)
TSM-***PEG14H.27((II)	TSM-***PEG15H.20	TSM-***PEG15.20	TSM-***PEG15H.20(II)	TSM-***PEG15.20(II)
TSM-***PEG6H.20	TSM-***PEG6.20	TSM-***PEG6.20(II)		

e) P-type Mono PERC of Mono-facial Dual Glass Products

(i)

TSM-***DEG40.07(II)	TSM-***DEG5(II)	TSM-***DEG5.07(II)	TSM-***DEG14(II)	TSM-**DEG14.07(II)
TSM-***DEG40.47(II)	TSM-***DEG5.40(II)	TSM-***DEG5.47(II)	TSM-***DEG14.40(II)	TSM-***DEG14.47(II)
TSM-***DEG5H(II)	TSM-***DEG14H(II)	TSM-***DEG5H(II)	TSM-***DEG5H.40(II)	TSM-***DEG5H.07(II)
TSM-***DEG5H.47(II)	TSM-***DEG14H(II)	TSM-***DEG14H.40(II)	TSM-***DEG14H.07(II)	TSM-***DEG14H.47(II)
TSM-***DEG6H(II)	TSM-***DEG6M(II)	TSM-***DDG6M(II)	TSM-***DEG15H(II)	TSM-***DEG15M(II)

TSM-***DDG6H(II) TSM-***DEG6(II) TSM-***DEG15(II)

(ii)

TSM-***DEG14.20(II)	TSM-***DEG5.20(II)	TSM-***DEG5.27(II)	TSM-***DEG5H.20(II)	TSM-***DEG5H.27(II)
TSM-***DEG14H.20(II)	TSM-***DEG14H.27(II)	TSM-***DEG6H.20(II)	TSM-***DEG6M.20(II)	TSM-***DEG15H.20(II)
TSM-***DEG15M.20(II)	TSM-***DDG6M.20(II)	TSM-***DDG6H.20(II)	TSM-***DEG6.20(II)	TSM-***DEG15.20(II)

(iii)

TSM-***DEG8M.20(II)	TSM-***DEG17M.20(II)	TSM-***DEG18M.20(II)	TSM-***DEG9.20	TSM-***DEG9R.B0
TSM-***DEG9R.20	TSM-***DEG9R.B0W	TSM-***DEG9R.20W		

(iv)

TSM-***DEG9.28	TSM-***DEG18M.28(II)	TSM-***DEG9R.B8	TSM-***DEG9R.28	TSM-***DEG9R.28W

f) P-type Mono PERC of Bifacial Dual Glass Products

(i)

TSM-***DEG5C.07(II)	TSM-***DEG14C.07(II),	TSM-***DEG5C(II)	TSM-***DEG14C(II)	TSM-***DEG5HC(II)
TSM-***DEG5HC.07(II)	TSM-***DEG14HC(II)	TSM-***DEG14HC.07(II)	TSM-***DEG15HC(II)	TSM-***DEG15MC(II)
TSM-***DEG6HC(II)	TSM-***DEG6MC(II)	TSM-***DEG15C(II)	TSM-***DEG15C.07(II)	

(ii)

TSM-***DEG5C.27(II)	TSM-***DEG14C.27(II)	TSM-***DEG5C.20(II)	TSM-***DEG14C.20(II)	TSM-***DEG5HC.20(II)
TSM-***DEG5HC.27(II)	TSM-***DEG14HC.20(II)	TSM-***DEG14HC.27(II)	TSM-***DEG15HC.20(II)	TSM-***DEG15MC.20(II)
TSM-***DEG6HC.20(II)	TSM-***DEG6MC.20(II)	TSM-***DEG6C.20(II)	TSM-***DEG6C.20(II)	TSM-***DEG15C(II)
TSM-***DEG15C.20(II)	TSM-***DEG15MC.27(II)			

(iii)

TSM-***DEG8MC.20 (II)	TSM-***DEG17MC.20(II)	TSM-***DEG18MC.20(II)	TSM-*** DEG21C.20	TSM-***DEG21C.28
TSM-***DDG21C.20	TSM-***DDG21C.28	TSM-***DEG19C.20	TSM-***DEG19C.28	TSM-***DDG19C.20
TSM-***DDG19C.28	TSM-***DEG20C.20	TSM-***DEG20C.28	TSM-***DDG20C.20	TSM-***DDG20C.28
TSM-***DEG15VC.20(II)	TSM-*** DEG18C.20	TSM-***DDG18C.20	TSM-***DEG18C.28	TSM-***DDDG18C.28
TSM-***DEG19RC.20	TSM-***DEG18MC.20w(II)	TSM-***DEG21C.20W	TSM-***DEG19C.20W	TSM-***DEG20C.20W
TSM-***DEG18C.20W	TSM-***DEG19RC.20W			

(iv)

TSM-***DEG9C.27	TSM-***DEG9RC.B7	TSM-***DEG9RC.27	TSM-***DEG9RC.27W

g) N-type i-TOPCon of Bifacial Dual Glass Products

(i)

TSM-***NEG16MC(II) TSM-***NEG7MC(II)

(ii)

TSM-***NEG15MC.20(II)	TSM-***NEG16MC.20(II)	TSM-***NEG7MC.20(II)	TSM-***NEG15XC.20(II)	

(iii)

TSM-***NEG19C.20	TSM-***NEG20C.20	TSM-***NEG21C.20	TSM-***NEG19RC.20	TSM-***NEG18C.20
TSM-***NEG9RC.20	TSM-***NEG20C.C0	TSM-***NEG20MC.20	TSM-***NEG21C.B0	

(iv)

TSM-***NEG9C.27	TSM-***NEG9RC.B7	TSM-***NEG9RC.27

(v)

TSM-***NEG21C.70

(vi)

TSM-***NFG19RC.20

(vii)
TSM-***NEG19RC.20K TSM-***NEG20C.20K TSM-***NEG21C.20K

(vii)
TSM-***NEG18RC.27

h) N-type i-TOPCon of Mono-facial Dual Glass Products

(i)
TSM-***NEG9.20 TSM-***NEG9R.B0 TSM-***NEG9R.20 TSM-***NEG19R.20

(ii)
TSM-***NEG9.28 TSM-***NEG9R.B8 TSM-***NEG9R.28 TSM-***NEG18R.20 TSM-***NEG18R.28
TSM-***NEG9R.25 TSM-***NEG18R.25

i) Heterojunction Bifacial Dual Glass Products

(i)
TSM-***HEG21C.20

j) Clamp

(i) Trina Clamp II

Applicable for following Products: TSM-***DE09.B0, TSM-***DE09.B8, TSM-***DE09.B5, TSM-***DE20.B0, TSM-***DE09R.B0, TSM-***DE09R.B5, TSM-***DE09R.B8, TSM-***DEG9R.B0, TSM-***DEG9R.B8, TSM-***DEG9RC.B7, TSM-***NEG9R.B0, TSM-***NEG9R.B8, TSM-***NEG9RC.B7 , TSM-***DE09R.B0W, TSM-***DE09R.B5W, TSM-***DE09R.B8W

(ii) Trina Clamp III

Applicable for following Products: TSM-***DE20, TSM-***DE21, TSM-***DE20.W, TSM-***DE21.W, TSM-***DE21.70, TSM-***NEG21C.70, TSM-***NE21.70

Note: The "***" placeholder stands in each case for the power indication set out in the relevant Product Data Sheet (for example "TSM-600NEG19RC.20").

2) Rules of use and application for Products listed under Sec. 1)

Trina Solar has set out certain rules of use and application for the Products (please see Appendix: *Rules of application for climatic modules*) to ensure the functionality, durability and performance under different climatic circumstances.

Only for Products listed under Sec. 1) d), e), f), g), h), i) can be installed on water surface floating systems; For Products not used in accordance with the rules determined in this Appendix, Trina Solar will not undertake this limited Warranty. Any consequences, risks, losses or damages caused by any violations of the Buyer to the "Rules of application for climatic modules" shall be borne by the Buyer solely.

No.	Environment	Temperature	Relative Humidity	Irradiance kwh/m²
1)	**High temperature and high humidity area**	Annual average temperature ＞ 23℃ Monthly minimum temperature ＞ 18℃	Annual average RH ＞ 70% Monthly minimum average RH ＞ 60%	/

2)	**High temperature difference and high irradiation area**	Desert and gobi region	/	＞1800
3)	**Gelid area（Low irradiation）**	＜-10℃（Monthly minimum temperature）	/	＜1400
4)	**Normal**	Not listed in Nr. 1 to 3 before		

3) Warranty

a) 10-Year Limited Product Warranty

For the Products listed under Sec. 1) d) (i), e) (i), f) (i), g) (i), j) (i) Trina Solar warrants that for a period of ten years commencing on the Warranty Start Date (as defined in Sec. 4)) there will be no defects in material workmanship or manufacture that materially impede the power generation functioning of the Products.

If the Buyer is aware or should have been aware of such design, material, workmanship or manufacturing defects prior to installation of the Products and nevertheless installs the Products without giving Trina Solar the opportunity to correct such defects prior to installation, the Buyer shall bear the additional costs incurred by correcting such defects after installation.

This Limited Product Warranty covers glass breakage provided that there was no external cause of breakage (i.e. only breakage caused by the glass itself or the module is covered).

For Trina Clamp II listed under Sec. 1) j) (i), Trina Solar's warranty is limited to the defects caused by mechanical failures (e.g., shattering, deformation of the Trina Clamp); and regardless of whether such defects substantially impede the performance of the solar modules.

Any deterioration in the appearance of the Products (including, without limitation, any scratches, stains, mechanical wear, rust, mold, deformation or discoloration) or any other changes to the Products which occur after delivery (Incoterms 2020) to the Buyer, do not constitute a defect under this Limited Product Warranty.

b) 12-Year Limited Product Warranty

For the Products listed under Sec.1) a), b) (i), (ii), (iv), (v), (vii), c) (ii), (iii), (iv), d) (ii), e) (ii), (iii), f) (ii), (iii), g) (ii), (iii), (v), (vi), (vii), h) (i) ,i) (i)Trina Solar warrants that for a period of twelve years commencing on the Warranty Start Date (as defined in Sec. 4)) there will be no defects in material, workmanship or manufacture that materially impede the power generation functioning of the Products.

If the Buyer is aware or should have been aware of such design, material, workmanship or manufacturing defects prior to installation of the Products and nevertheless installs the Products without giving Trina Solar the opportunity to correct such defects prior to installation, the Buyer shall bear the additional costs incurred by correcting such defects after installation.

This Limited Product Warranty covers glass breakage provided that there was no external cause of breakage (i.e. only breakage caused by the glass itself or the module is covered).

Any deterioration in the appearance of the Products (including, without limitation, any scratches, stains, mechanical wear, rust, mold, deformation or discoloration) or any other changes to the Products which occur after delivery (Incoterms 2020) to the Buyer, do not constitute a defect under this Limited Product Warranty.

c) 15-Year Limited Product Warranty

For the Products listed under Sec.1) b) (iii), (vi), (viii), (c) (i), (e) (iv), (f) (iv), (g) (iv), (viii), h) (ii) Trina Solar warrants that for a period of fifteen years commencing on the Warranty Start Date (as defined in Sec. 4)) there will be no defects in material, workmanship or manufacture that materially impede the power generation functioning of the Products.

If the Buyer is aware or should have been aware of such design, material, workmanship or manufacturing defects prior to installation of the Products and nevertheless installs the Products without giving Trina Solar the opportunity to correct such defects prior to installation, the Buyer shall bear the additional costs incurred by correcting such defects after installation.

This Limited Product Warranty covers glass breakage provided that there was no external cause of breakage (i.e. only breakage caused by the glass itself or the module is covered).

Any deterioration in the appearance of the Products (including, without limitation, any scratches, stains, mechanical wear, rust, mold, deformation or discoloration) or any other changes to the Products which occur after delivery (Incoterms 2020) to the Buyer, do not constitute a defect under this Limited Product Warranty.

d) 25-Year Limited Power Output Warranty for Back Sheet Products

In addition, Trina Solar provides power warranty of 25 years, which is commencing on the warranty start date, the remaining power output ratio of our back sheet Products listed under Sec.1) a), b), c) namely 1-100% * (P0—P1) / P0, will not be lower than the following guaranteed level.

P0: Lower limit value of the module nominal power output indicated in the contract or product nameplate.
P1: Actual power output measured at the Standard Test Conditions (STC: Irradiance 1000w/m², Temperature 25℃, AM 1.5), and measurement shall be carried out either by Trina Solar or by a third-party testing institute recognized by Trina Solar and the Buyer.
(Remarks: According to STC, measurement system uncertainty should be included in all actual power output measurements.)

- for P-type Poly Products (as defined in Sec. 1) a)): 2.5% in the first year; from the 2nd year to the 25th year, the average annual power decline will be no more than 0.65%; by the end of the 25th year, the actual power output will be no less than 81.9%;

- for P-type Mono PERC Products (as defined in Sec. 1) b) (i), (ii)): 2.5% in the first year; from the 2nd year to the 25th year, the average annual power decline will be no more than 0.6%; by the end of the 25th year, the actual power output will be no less than 83.1%.

- for P-type Mono PERC Products (as defined in Sec. 1) b) (iii), (iv), (v), (vi), (vii), (viii)): 2.0 % in the first year; from the 2nd year to the 25th year, the average annual power decline will be no more than 0.55 %; by the end of the 25th year, the actual power output will be no less than 84.8 %;

- for N-type i-TOPCon Products (as defined in Sec. 1) c) (i), (ii), (iii) (iv)): 1.0 % in the first year; from the 2nd year to the 25th year, the average annual power decline will be no more than 0.4 %; by the end of the 25th year, the actual power output will be no less than 89.4 %;

(Remark: According to STC, measurement system uncertainty should be included in all actual power output measurements.)

e) 30-Year Limited Power Output Warranty for Dual Glass Products

(i) Frontside:

In addition, Trina Solar provides power warranty of 30 years, which is commencing on the warranty start date, the remaining power output ratio of our dual glass Products listed under Sec.1) d), e) and the front side (without J-Box) of the Products listed under Sec. 1) f), g), h), i), namely 1-100% * (P0－P1) / P0, will not be lower than the following guaranteed level.

P0: Lower limit value of the module nominal power output indicated in the contract or product nameplate.
P1: Actual power output measured at the Standard Test Conditions (STC: Irradiance 1000w/m², Temperature 25℃, AM 1.5), and measurement shall be carried out either by Trina Solar or by a third-party testing institute recognized by Trina Solar and the Buyer.
(Remarks: According to STC, measurement system uncertainty should be included in all actual power output measurements.)
For Bifacial Dual Glass products listed in 1) f) and 1) g), the power output warranty only applies to the front side of the product (without junction box).

- for P-type Poly Mono-facial Dual Glass Products (as defined in Sec. 1) d), for P-type Mono PERC Mono-facial Dual Glass Products (as defined in Sec. 1) e) (i), (ii), for the front side (without J-Box) of P-type Mono PERC Bifacial Dual Glass Products (as defined in Sec.1) f) (i), (ii)): 2.5 % in the first year; from the 2nd year to the 30th year, the average annual power decline will be no more than 0.5%; by the end of the 30th year, the actual power output will be no less than 83.0%;

- for P-type Mono PERC Mono-facial Dual Glass Products (as defined in Sec. 1) e) (iii), (iv) for the front side (without J-Box) of P-type Mono PERC Bifacial Dual Glass Products (as defined in Sec.1) f) (iii), (iv)): 2.0 % in the first year; from the 2nd year to the 30th year, the average annual power decline will be no more than 0.45 %; by the end of the 30th year, the actual power output will be no less than 84.95%;

- for N-type i-TOPCon Bifacial Dual Glass Products (as defined in Sec.1) g) (i), (ii)): 1.5% in the first year; from the 2nd year to the 30th year, the average annual power decline will be no more than 0.5%; by the end of the 30th year, the actual power output will be no less than 84.0%.

- for N-type i-TOPCon Dual Glass Products (as defined in Sec.1) g) (iii), (iv), (v), (vi), (vii), (viii), h) (i), (ii)): 1.0% in the first year; from the 2nd year to the 30th year, the average annual power decline will be no more than 0.4%; by the end of the 30th year, the actual power output will be no less than 87.4%.

- for Heterojunction Bifacial Dual Glass Products (as defined in Sec.1) i) (i)): 1.0% in the first year; from the 2nd year to the 30th year, the average annual power decline will be no more than 0.375%; by the end of the 30th year, the actual power output will be no less than 88.125%.

(ii) Backside

For P-type Mono PERC Bifacial Products (as defined in Sec.1) b) (vii), (viii), f) (iii), (iv)) and N-type i-TOPCon Bifacial Dual Glass Products (as defined in Sec.1) g) (iii), (iv), (vii)), Trina Solar warrants that for a period of thirty years commencing on the Warranty Start Date (as defined in Sec. 4)) the loss of the power on the backside of the product (with junction box) as follows

- From the 1st year to the 10th year, the power degradation will be no more than Initial backside power P multiplied by 15%

- From 11th to 30th year, the power degradation will be no more than Initial backside power P multiplied 30%.

For definition purposes only: Initial backside power P = nameplate power (module front side power) * specified bifaciality (as specified lower limit of the bifaciality in the relevant Product Data Sheet).

(Remark: According to STC, measurement system uncertainty should be included in all actual power output measurements.)

f) 5-Year Limited Product Warranty

For the Products listed under Sec. 1) j) (ii) Trina Solar warrants that for a period of five years commencing on the Warranty Start Date (as defined in Sec. 4)) there will be no defects in material workmanship or manufacture that materially impede the power generation functioning of the Products.

If the Buyer is aware or should have been aware of such design, material, workmanship or manufacturing defects prior to installation of the Products and nevertheless installs the Products without giving Trina Solar the opportunity to correct such defects prior to installation, the Buyer shall bear the additional costs incurred by correcting such defects after installation.

For Trina Clamp III listed under Sec. 1) j) (ii), Trina Solar's warranty is limited to the defects caused by mechanical failures (e.g., shattering, deformation of the Trina Clamp); and regardless of whether such defects substantially impede the performance of the solar modules.

Any deterioration in the appearance of the Products (including, without limitation, any scratches, stains, mechanical wear, rust, mold, deformation or discoloration) or any other changes to the Products which occur after delivery (Incoterms 2020) to the Buyer, do not constitute a defect under this Limited Product Warranty.

4) Warranty Start Date

The Warranty Start Date is the date of initial installation of the Products or three months after the delivery (Incoterms 2020) of the Products to the Buyer, whichever date is earlier.

5) Exclusions and Limitations

This Global Limited Warranty **does not apply** to any Products which have been subject to:

a) Failure to pay the purchase price towards Trina Solar or its subsidiaries which have put the module on the market even though (i) the payment was due and (ii) the direct customer who has obtained the module from Trina Solar or its subsidiary ("Direct Customer") is not entitled to withhold the purchase price or parts of the purchase price. Trina Solar must inform the Buyer about the non-payment and provide the name and the full address of the Direct Customer which has failed to pay the module. In case that Trina Solar can reject the claims under this Global Limited Warranty based on this provision, the Buyer can deposit the amount not paid in order to trigger the Global Limited Warranty claims;

b) Failure to provide proof of purchase or product information;

c) During the handling (including but not limited to packing/unpacking, loading/unloading, transportation, storage, installation, use, operation or maintenance, etc.) of the Products, failure to comply with the requirements of Trina Solar's **user manual** (as applicable during the validity period of this Global Limited Warranty pursuant to Sec. 11), or **rules of use and application for the Products** (as defined in Sec. 2, unless otherwise agreed in writing) and its Appendix **rules of application for Trina modules;**

d) Failing to comply with Trina Solar's user manual in terms of the standards of any supporting parts to the Products, or the Buyer has installed any substandard, mismatched, inferior or unqualified supporting (including but not limited to the clamps, etc.), which directly led to the quality problems with Trina Solar Products;

e) Installation near open flame or flammable or explosive materials as specified in Trina's User Manual;

f) Failure to carry out proper operation and maintenance (including but not limited to operation and maintenance requirements requested by Trina Solar's applicable user manual or other applicable local laws and regulations of the place of installation);

g) Service by service technicians who are not qualified under the relevant law and/or applicable regulations at the place of installation;

h) Change, erasure or illegible-made of the Product's type, nameplate or serial number (other than by any act or omission of Trina Solar);
i) Installation on mobile units (except photovoltaic tracking system), such as vehicles, ships or offshore-structures (except water surface floating systems pursuant to Sec 2);
j) Exposure to voltage in excess to the maximum system voltage or power surges;
k) defective components in the construction on which the module is mounted;
l) Exposure to mold discoloration or similar external effects;
m) unauthorized modifications:
(i) Operation/maintenance by use of unauthorized spare parts;
(ii) Application under extreme environmental conditions or rapid changes in such environments resulting in corrosion, oxidation, or affected by chemical products;
(iii) Other acts beyond Trina Solar`s reasonable control (including direct or indirect damage by war, fire, flood, hurricane, volcanic eruption, surface collapse, debris flow, lightning, earthquake, heavy snowfall, hailstone, strong breeze etc.);
n) Use of the Products in such a manner as to infringe Trina Solar's or any third party`s intellectual property rights (including but not limited to patents, trademarks, etc.);
o) Any subsequent sale of the Products from a country where Trina Solar was first marketed to another country without the consent of Trina Solar ("Prohibition of Parallel Import"). But the Prohibition of Parallel Import does not apply to the sales within the European Union ("EU"), where the sale of Products from one EU country to another does not require the consent of Trina Solar. However, the consent of Trina Solar must be obtained for the sale of Products from outside the EU to an EU country or from an EU country to outside the EU.
p) only for Buyers located in Australia applies: This Global Limited Warranty is only valid for Products from authorized Australian resellers. Buyers may contact the Customer Support office in their region (as detailed in Sec. 8)) for details of authorized Australian resellers.
q) only for Buyers located in the US applies: This Global Limited Warranty is only valid for Products from authorized US resellers. Buyers may contact the Customer Support office in their region (as detailed in Sec. 8)) for details of authorized US resellers.
r) only for Buyers located in Japan applies: This Global Limited Warranty is only valid for Products from authorized Japanese resellers. Buyers may contact the Customer Support office in their region (as detailed in Sec. 8)) for details of authorized Japanese resellers.

6) Repair, Replacement or Refund Remedy

a) As Buyer's sole and exclusive remedy under this Global Limited Warranty (though the Buyer should note Sec. 6) d) regarding the potential existence of other statutory rights and Sec. 6 e) for Australian Buyers) Trina Solar will, at its sole discretion, either, with regard to the applicable Products:

(i) determine a maintenance plan and repair the defective Products; or
(ii) refund the difference value between the actual STC power and the warranty power of the products. Front side power compensation = The market price at time of payout (per watt) * (sum of the remaining theoretical warranty power according to Sec. 3) d), e) - sum of STC power actually measured according to Sec. 3) d), e)); The backside power compensation is processed based on the market price at the time of payout and 10% of the difference between the warranty power and the actual STC power measured for backside; or
(iii) refund the salvage value of the defective Products. The salvage value = The market price at the time of payout (unit price per watt) * the original guaranteed nameplate power * remaining warranty period (year) / original total warranty period by Trina Solar; For the salvage value compensation caused by the backside power attenuation, it is treated as 10% of the product salvage value; or
(iv) provide additional Products to make up for the difference between the actual STC power of Products and the warranty power (Difference power = sum of the remaining theoretical warranty power according to Sec. 3) d), e) - sum of STC power actually measured according to Sec. 3) d), e)); For the backside power replenishment of the Mono-facial Dual Glass products, it is treated at 10% of the difference between the actual STC power and the warranty power; or
(v) replace the defective Products or part thereof by new or remanufactured Products. The total nominal power of the replaced Products shall not be less than the total remaining theoretical warranty

power of the defective Products. (The power on the backside of the Dual Glass products is treated at 10% of the backside warranty power) Trina Solar reserves the right to provide other models of Products in replacement or addition of the defective Products if the defective Products are discontinued or otherwise unavailable.

During the warranty period of Sec. 3), Trina Solar shall bear the direct costs of repairing the products and transportation charges incurred in the delivery of the repair, replacement or additional products to the buyer, excluding insurance, air freight, customs clearance, customs duties and other non-seller's costs (e.g. port delays, storage charges due to negligence on the part of the buyer or end-user). During repair and replacement, the costs and other related expenses for the removal, handling, repack, installation or reinstallation shall remain with the Buyer. Beyond the warranty period of Sec. 3), Buyer shall bear all reasonable costs of materials, labor, freight, clearance, removal, repack, installation or reinstallation whatsoever related to repairing or replacement.

Defect Products or end of lifetime Products shall be disposed if legally permissable by the Buyer in accordance with local applicable laws or regulations, unless Trina Solar agrees or where legally mandatory takes them back. If Trina Solar decides or where legally mandatory takes the defective products back, the goods property of these products shall belong to Trina Solar without any limitation.

b) The Global Limited Warranty periods as defined in Sec. 3) a), b), c), d), e), f) shall not extend or renew upon the repair, replacement or offering additional products of defective Products by Trina Solar. The Global Limited Warranty period for replaced, repaired or additionally provided Products is the remainder of the Global Limited Warranty period on the original new Products.

c) All other claims under this Global Limited Warranty against Trina Solar shall be excluded. Under this limited Warranty, Trina Solar is not responsible for any special, incidental or consequential damages (including loss of profits, business interruption, loss of power generation, harm to goodwill or business reputation, or delay damages) whether such claims are based in contract, warranty, negligence or strict tort. This exclusion applies to the extent permissible by law, and even if the remedies set forth below herein are deemed to have failed of their essential purpose.

d) YOU MAY HAVE SPECIFIC LEGAL RIGHTS OUTSIDE THIS LIMITED WARRANTY, AND YOU MAY ALSO HAVE OTHER RIGHTS THAT VARY FROM STATE TO STATE. THIS GLOBAL LIMITED WARRANTY DOES NOT AFFECT ANY ADDITIONAL RIGHTS YOU HAVE UNDER LAWS IN YOUR JURISDICTION GOVERNING THE SALE OF CONSUMER GOODS, INCLUDING WITHOUT LIMITATION, NATIONAL LAWS IMPLEMENTING EC DIRECTIVE 99/44 OR PURSUANT TO THE MAGNUSON MOSS WARRANTY ACT. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE LIMITATIONS OR EXCLUSIONS IN THIS GLOBAL LIMITED WARRANTY STATEMENT MAY NOT APPLY.

e) The following statement applies to Buyers that are "Consumers" within the meaning of the Australian Consumer Law:

“Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.”

7) Rights and Remedies against Third Parties

This Global Limited Warranty shall be construed as a separate warranty and independent from any other contractual arrangement with third parties relating to the Products. It shall not affect any rights, obligations and remedies of the Buyer, if any, with regard to third parties for defects or non-conformity or non-compliance of the Products, notwithstanding its legal basis. The rights and remedies provided hereunder are in addition to any other rights and remedies against third parties to which the Buyer may be entitled by agreements with such third parties or by law.

8) Claims Procedure, Notice Periods, Expiration of Global Limited Warranty Claims and Limitations.

a) The Buyer shall notify Trina Solar under this Global Limited Warranty using Trina Solar's Customer Service Portal at the web address http://customerservice.trinasolar.com. At the time of filing the claim, please ensure that the applicant is the owner of the warranty right for the Products or has a valid authorization document issued by the owner of the warranty right for the Products. It is the responsibility of the owner of the warranty right or its authorized representative to cooperate with Trina Solar for signing the Warranty Solution Agreement. The notice of claim shall specify the claim along with written proof for the purchase and defect of the Products, including (i) purchasing invoice indicating purchase date, (ii) Products' details, (iii) detailed description of the claim, (iv) serial numbers of all affected Products (in editable form, e.g. Excel document), (v) evidence including photographs and data related to all affected Products and (vi) any additional supplementary information and/or evidence reasonably requested by Trina Solar. The contact customer service center for the regions are:

China Customer Service Center

Trina Solar Co. Ltd

No. 2 Trina Road, Trina PV Industrial Park,

New District, Changzhou, Jiangsu,

P.R. China, 213031

Tel: 400 689 0000

Fax: +86 519 8517 6021

Mail: Chinaservice@trinasolar.com

Europe Customer Service Center

Trina Solar (Schweiz) AG

Birkenweg 4

8304 Wallisellen, Switzerland

Tel:+41 43 299 68 68

Fax: +41 43 299 68 10

Mail Euservice@trinasolar.com

Japan Customer Service Center

Trina Solar (Japan) Limited

Room 2606 Tokiwabashi Tower, 2-6-4 Otemachi,

Chiyoda-ku, Tokyo 100-0004,Japan

Tel: +81 3 6435 9008

Fax: +81 3 6435 9010

Mail: Japanservice@trinasolar.com

Australia and New Zealand Customer Service Center

Trina Solar (Australia) Pty Ltd

2 Banfield Road, Macquarie Park, New South Wales 2113, Australia

Tel : +61 1300 874 627

Mail: Australiaservice@trinasolar.com

Americas Customer Service Center

Trina Solar (U.S.), Inc.

7100 Stevenson Blvd, Fremont, CA 94538

Tel: +1 800 696 7114

Mail: NAservice@trinasolar.com

Middle East and Africa Customer Service Center

Office 2506 Liwa Heights

Cluster W, Jumeirah Lake Towers

Dubai – United Arab Emirates

Tel: +971 4 568 2872

Mail: MEAservice@trinasolar.com

India Customer Service Center

Trina Solar (India) Regional Sales Office

Unit No- 824, 8th Floor, DLF Tower-B, Jasola District Center, New Delhi –110025, India

Tel: +91 11 45852200, +91 11 35852207

Mail: Indiaservice@trinasolar.com

Rest of World (ROW) Customer Service Center

Trina Solar Energy Development Pte Ltd

600 North Bridge Road, #12-01 Parkview Square,

Singapore 188778

Tel: +65 6808 1111

Mail: apmeaservice@trinasolar.com

b) Any dispute on technical facts relating to claims brought under this Global Limited Warranty for defects of Products shall be determined by expert determination. Trina Solar and the Buyer will, at the Buyer's or Trina Solar's request, jointly appoint as independent expert and appraiser a reputable researcher from a first-class test-institute such as TÜV Rheinland, TÜV SUD or ASU Arizona State University, and so on ("Technical Expert"). The determination by such Technical Expert shall be final, conclusive, binding and enforceable in any proceeding brought hereunder. The Technical Expert shall (i) act as an expert recognized by Trina Solar; (ii) allow the parties a reasonable opportunity to make representations and counter-representations; (iii) take those representations and counter-representations into account; and (iv) if required by either party give written reasons for his or her determination.

c) Any claim for breach of this Global Limited Warranty must be brought within two (2) months after discovery of the breach.

d) The return of any defective Products will not be accepted unless prior written authorization has been given by Trina Solar.

9) Force Majeure

Trina Solar shall not be responsible or liable in any way to the Buyer for any non-performance or delay in Trina Solar's performance under this Global Limited Warranty due to occurrences of force majeure such as war, riots, strikes, unavailability of suitable and sufficient labor, material, or capacity or technical or yield failures and any unforeseen event beyond its control, including, without limitation, any technological or physical event or condition which is not reasonably known or understood at the time of the sale of the defective Products or the notification of the relevant Global Limited Warranty claim under this limited Warranty.

10) Warranty Assignment

This Global Limited Warranty is transferrable when the Products remain installed in their original installation location without having them moved or disassembled after initial installation.

11) Validity

This Global Limited Warranty shall apply to Products delivered to the Buyer on or after 1st of August 2024(Incoterms 2020). This Global Limited Warranty shall be valid until a new revision is issued by Trina Solar.

12) Geographical Validity

This Global Limited Warranty does apply to all countries with the exception of Germany and Turkey where country specific limited warranties apply.

13) No Other Express Warranty

Except as otherwise provided by applicable statutory law (cf. Sec. 6) d) and 6 e)) or unless modified in writing and signed by an officer of Trina Solar, the Global Limited Warranty set forth herein is the only express warranty (whether written or oral) by Trina Solar applicable to the Products and no one is authorized to restrict, expand or otherwise modify this limited Warranty.

14) Miscellaneous

If any provision of this Global Limited Warranty is held invalid, unenforceable or contrary to law then the validity of the remaining provisions of this Global Limited Warranty shall remain in full force and effect.

15) Limitation of Liability

To the maximum extent permitted by applicable law, Trina Solar's aggregate liability according to this Global Limited Warranty shall not exceed the purchase price paid by the Buyer for the defective Products in the case of a Global Limited Warranty claim. The Buyer acknowledges that the foregoing limitation of liability is an essential element of this Global Limited Warranty and that in the absence of such limitations the purchase price of the Products would be significantly higher.

16) Applicable Law and Jurisdiction

The validity of this Global Limited Warranty, the construction of its terms and the interpretation and enforcement of the rights and duties of the Buyer and Trina Solar shall be governed by the laws of the country of the original installation location of the Products, to the exclusion of that country's conflicts of law rules as well as of the *United Nations Convention on Contracts for the International Sale of Goods* (CISG) dated 11 April 1980 and of any other uniform law.

All disputes arising out of or in connection with this Global Limited Warranty shall be finally settled before the ordinary courts of the country of the original installation location of the Products.

17) Note

The installation and operation of photovoltaic modules requires professional skills and should only be performed by qualified professionals. Please read the safety and installation instructions before using and operating the Products (http://www.trinasolar.com/en-glb/resources/downloads).
Appendix: "Rules of application for Trina modules"
If the place of the installed Products is not listed in the following list of countries, states and provinces, please contact the competent contact customer support center (as stated in Sec. 8) a)) which shall timely feedback to Trina Solar Global Product mangemnet deptartment to update the database.

Region	CN	Country/state/province	Climate type	Applicable products listed under Sec.1
Africa	01	Ghana	hot and humid	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	02	Mauritius	hot and humid	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	03	Nigeria	hot and humid	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	04	Sierra Leone	hot and humid	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	05	Central African Republic	hot and humid	(a),(b),(c),(d),(e),(f),(g),(h),(i)

	06	Namibia	High temperature difference and high irradiation	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	07	Algeria	High temperature difference and high irradiation	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	08	Tunisia	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	09	Egypt	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	10	Djibouti	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	11	Kenya	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	12	Morocco	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	13	South Africa	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	14	Senegal	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	15	Tanzania	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	16	Malawi	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	17	Zimbabwe	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	18	Ethiopia	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	19	Zambia	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	20	Eritrea	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	21	Burkina Faso	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	22	Rwanda	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	23	Mozambique	hot and humid	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	24	Botswana	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	25	Angola	hot and humid	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	26	Mali	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	27	Uganda	hot and humid	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	28	Chad	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	29	Mauritania	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	30	Cote d'Ivoire	hot and humid	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	31	Guinea	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	32	Niger	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	33	Madagascar	hot and humid	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	34	Burundi	hot and humid	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	35	Liberia	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	36	Guinea-Bissau	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	37	Benin	hot and humid	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	38	Togo	hot and humid	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	39	Swaziland	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	40	Libya	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	41	Lesotho	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	42	Cape Verde	hot and humid	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	43	Seychelles	hot and humid	(a),(b),(c),(d),(e),(f),(g),(h),(i)
Africa	44	Gambia	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	45	Comoros	hot and humid	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	46	Sudan	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	47	Somalia	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	48	Sao Tome and Principe	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	49	Democratic Republic of Congo	hot and humid	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	50	Congo	hot and humid	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	51	South Sudan	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	52	Equatorial Guinea	hot and humid	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	53	Gabon	hot and humid	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	54	Douala	hot and humid	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	55	Cameroon	hot and humid	(a),(b),(c),(d),(e),(f),(g),(h),(i)
MEA	01	United Arab Emirates	High temperature difference and high irradiation	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	02	Oman	High temperature difference and high irradiation	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	03	Bahrain	High temperature difference and high irradiation	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	04	Saudi Arabia	High temperature difference and high irradiation	(a),(b),(c),(d),(e),(f),(g),(h),(i)

	05	Yemen	High temperature difference and high irradiation	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	06	Iraq	High temperature difference and high irradiation	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	07	Israel	High temperature difference and high irradiation	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	08	Lebanon	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	09	Palestine	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	10	Jordan	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	11	Kuwait	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	12	Qatar	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	13	Syrian	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	14	Cameroon	hot and humid	(a),(b),(c),(d),(e),(f),(g),(h),(i)
EU	01	Norway	Gelid (Low irradiation)	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	02	Sweden	Gelid (Low irradiation)	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	03	Finland	Gelid (Low irradiation)	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	04	Denmark	Gelid (Low irradiation)	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	05	Ukraine	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	06	Germany	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	07	France	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	08	Georgia	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	09	Netherlands	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	10	Netherlands Antilles	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	11	Portugal	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	12	Switzerland	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	13	Turkey	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	14	Spain	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	15	Greece	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	16	Slovakia	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	17	Hungary	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	18	Luxembourg	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	19	Malta	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	20	Czech Republic	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	21	Poland	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	22	Bosnia and Herzegovina	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	23	Belgium	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	24	Austria	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
EU	25	Estonia	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	26	Ireland	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	27	New Caledonia	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	28	United Kingdom	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	29	Italy	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	30	Curacao Island	hot and humid	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	31	Bulgaria	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	32	Uzbekistan	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	33	Kazakhstan	Gelid (Low irradiation)	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	34	Cyprus	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	35	Lithuania	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	36	Romania	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	37	Moldova	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	38	Latvia	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	39	Azerbaijan	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	40	Slovenia	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	41	Albania	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	42	Montenegro	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	43	North Macedonia	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	44	Serbia	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)

	45	Croatia	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	46	Kosovo	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	47	Macedonia Greece	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
India	01	Calcutta	hot and humid	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	02	Telangana	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	03	Andhra pradesh	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	04	Tripura	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	05	Kerala	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	06	Rajasthan	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	07	West Bengal	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	08	maharashtra	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	09	uttar pradesh	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	10	Tamil Nadu	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	11	Gujarat	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	13	karnataka	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	14	Madhya pradesh	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	16	Punjab	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	17	Haryana	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	18	Delhi	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	19	Bihar	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	20	Orissa	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	21	Jharkhand	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	23	Chhattisgarh	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	24	state of Jammu &Kashmir	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	25	Uttarakhand	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	26	Himachal pradesh	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	27	Goa	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	28	Manipur	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	29	Meghalaya	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	30	Nagaland	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	31	Mizoram	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	32	The state of punjab	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
Japan	01	Hokkaido	Gelid (Low irradiation)	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	02	Except Hokkaido	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
ROA	01	Philippines	hot and humid	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	02	Cambodia	hot and humid	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	03	Maldives	hot and humid	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	04	Malaysia	hot and humid	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	05	Myanmar	hot and humid	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	06	Sri Lanka	hot and humid	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	07	Solomon Islands	hot and humid	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	08	Thailand	hot and humid	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	09	Singapore	hot and humid	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	10	Indonesia	hot and humid	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	11	Viet Nam	hot and humid	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	12	Bengal	hot and humid	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	13	Pakistan	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	14	Korea, Republic of	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	15	Mongolia	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	16	Nepal	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	17	New Zealand	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	18	Hong Kong	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	19	Brunei	hot and humid	(a),(b),(c),(d),(e),(f),(g),(h),(i)
AUS	01	North coast of Australia	hot and humid	(a),(b),(c),(d),(e),(f),(g),(h),(i)

	02	Queensland	hot and humid	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	03	the State of Victoria	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	04	Australian capital territory	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	05	New South Wales	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	06	western australia	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	07	Tasmania	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	08	South Australia	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
LAC	01	Barbados	hot and humid	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	02	Panama	hot and humid	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	03	Tropical rainforest area of northern Brazil	hot and humid	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	04	Dominican Republic	hot and humid	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	05	Colombia	hot and humid	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	06	Costa Rica	hot and humid	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	07	Guyana	hot and humid	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	08	Haiti	hot and humid	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	09	Honduras	hot and humid	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	10	Martinique	hot and humid	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	11	Peru	hot and humid	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	12	Argentina	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	13	Mexico	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	14	Nicaragua	hot and humid	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	15	El Salvador	hot and humid	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	16	Uruguay	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	17	Jamaica	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	18	Chile	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	19	Brazil(Except tropical rain-forest area of northern)	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	20	La Joya	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	21	Bolivia	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	22	The Republic of Guate-mala	hot and humid	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	23	Saint Lucia	hot and humid	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	24	Bahamas	hot and humid	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	25	Puerto Rico	hot and humid	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	26	Paraguay	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
LAC	27	Caribbean Islands	hot and humid	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	28	Arequipa	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	29	Moquegua	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	30	Ecuador	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	31	Cockburn Town	hot and humid	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	32	Turks Islands	hot and humid	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	33	Caicos Islands	hot and humid	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	34	Belize	hot and humid	(a),(b),(c),(d),(e),(f),(g),(h),(i)
CHN	01	Hainan	hot and humid	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	02	Inner Mongolia	Gelid (Low irradiation)	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	03	Sinkiang	High temperature difference and high irradiation	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	04	Tibet	High temperature difference and high irradiation	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	05	Golmud	High temperature difference and high irradiation	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	06	Gansu	High temperature difference and high irradiation	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	07	Heilongjiang	Gelid (Low irradiation)	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	08	Jilin	Gelid (Low irradiation)	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	09	Anhui	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	10	Hebei	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	11	Jiangsu	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)

	12	Fujian	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	13	Yunnan	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	14	Szechwan	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	15	Ningxia	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	16	Guizhou	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	17	Shanxi	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	18	Henan	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	19	Hubei	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	20	Hunan	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	21	Guangdong	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	22	Guangxi	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	23	Liaoning	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	24	Shanghai	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	25	Tianjin	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	26	Jiangxi	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	27	Shaanxi	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	28	Shandong	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	29	Chongqing	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	30	Beijing	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	31	Zhejiang	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	32	Taiwan	hot and humid	(a),(b),(c),(d),(e),(f),(g),(h),(i)
USA	01	Florida	hot and humid	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	02	California	High temperature difference and high irradiation	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	03	Arizona	High temperature difference and high irradiation	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	04	Texas	High temperature difference and high irradiation	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	05	Alaska	Gelid (Low irradiation)	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	06	Massachusetts	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	07	New Jersey	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	08	North Carolina	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	09	New Canaan	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	10	New York	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
USA	11	Hawaii	hot and humid	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	12	Montana	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	13	Nebraska	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	14	Nevada	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	15	New Hampshire	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	16	New Mexico	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	17	North Dakota	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	18	Ohio	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	19	Oklahoma	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	20	Oregon	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	21	Pennsylvania	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	22	Rhode Island	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	23	South Dakota	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	24	Tennessee	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	25	Utah	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	26	Vermont	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	27	Virginia	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	28	Washington	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	29	West Virginia	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	30	Wisconsin	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	31	Wyoming	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	32	Alabama	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	33	Arkansas	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)

	34	Colorado	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	35	Connecticut	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	36	Delaware	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	37	Georgia state	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	38	Idaho	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	39	Illinois	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	40	Indiana	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	41	Iowa	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	42	Kansas	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	43	Kentucky	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	44	Lousiana	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	45	Maine	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	46	Maryland	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	47	Michigan	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	48	Minnesota	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	49	Mississippi	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	50	Missouri	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
	51	South Carolina	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)
Canada	01	Canada	Gelid (Low irradiation)	(a),(b),(c),(d),(e),(f),(g),(h),(i)
Russia	01	Russia	Gelid (Low irradiation)	(a),(b),(c),(d),(e),(f),(g),(h),(i)
Armenia	01	Yerevan	Normally	(a),(b),(c),(d),(e),(f),(g),(h),(i)

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The Right Of Final Interpretation Belongs To Trina Solar.

Factory Limited Warranty for SigenStor

(For Europe)

Limited Product Warranty

Sigenergy Technology Co., Ltd. and its affiliates ("SIGENERGY") warrants that the hardware of electronics and enclosure will be free of defects caused by improper workmanship or defective materials. This Limited Product Warranty is valid only for the duration of the applicable "Warranty Period" defined in the table below and is subject to the following terms and conditions:

Covered Product*	Covered Part	Warranty Period
SigenStor	Sigen Battery	10 years
	Sigen Energy Controller	10 years
	Sigen EV DC Charging Module	3 years

*Installed on or after November 1st, 2023

Besides the above product, for vulnerable part such as strips light in decorative cover, the warranty period provided by SIGENERGY is 2 years.

Product Warranty commencing on the earlier of:

(i) The date of product be installed, activated and registered on site.

(ii) The date of retailers' invoice or written documents (such as receiving note) to prove the time when product is delivered to the installation site.

If it can't be judged by the above two information, the warranty starting date shall be 6 months after the product was manufactured.

Limited Performance Warranty

SIGENERGY warrants that the battery system retains either seventy percent (70%) of Usable Energy for ten (10) years, or for a Minimum Through Output Energy which is calculated from the earlier of installation date. Whichever comes first:

**The term "Throughput Energy" is the total amount of energy a battery can be expected to deliver over its life time.

Covered Product	Usable Energy (kWh)	Minimum Throughput Energy**(MWh)
Sigen Battery 5 kWh	5.2	15.85
Sigen Battery 8 kWh	7.8	23.77

The Battery usage must comply with the operating conditions under the specification and the installation manual supplied by SIGENERGY. For this Limited Warranty, Usable Energy is as measured and calculated using the following testing method and values:

Ambient temperature is between 25℃~ 28℃:

(i) Discharge the battery with constant current until the battery reaches End of Discharge Voltage or its self-protective voltage.

(ii) Wait for 10 minutes.

(iii) Charge the battery with constant current until the battery reaches End of Charge Voltage or 100% SOC.

(iv) Wait for 10 minutes.

(v) Discharge the battery with constant current until it reaches End of Discharge voltage or its self-protective voltage. Record the amount of electricity released in the process as the Remaining Usable Energy of battery.

Test value list:

Product	End of Discharge Voltage (V)	End of Charge Voltage (V)	Constant current (A)
Sigen Battery 5 kWh	15	21.9	56
Sigen Battery 8 kWh	22.5	32.85	56

Precondition For Warranty

This Warranty is subject to the following conditions:

(i) If the equipment is not to be installed or used immediately, the storage environment needs to meet the following conditions

a. Storage SOC: 20%-50%SOC. Charge and discharge the battery every 6 months.

b. Storage temperature: -25℃~35℃

c. Storage humidity: 5%RH~95%RH(no condensation). Do not install the battery if any moist or condensation is found.

d. Place the equipment in a cool place where away from direct sunlight and rain

e. Keep the equipment away from flammable, explosive, and corrosive matters

(ii) The ambient temperature during the operation of the products shall not fall below -20℃ or exceed 55℃.

(iii) The battery system shall be installed by a skilled and trained installer.

(iv) The Battery system installation location must be ventilated in accordance with the requirements of User Manual and Installation Guide.

(v) To provide a ten-year limited warranty on the inverter and battery, SIGENERGY will update your equipment with a remote firmware upgrade from time to time. These remote upgrades may briefly disrupt the operation of the appliance. By connecting your equipment to the internet, you agree that SIGENERGY may update the firmware of your equipment's features without further notice. If your equipment has not been connected to the Internet for a month, we will notify you to connect your equipment to the Internet. If the equipment continues to be disconnected for an extended period of time. In this case, we may not be able to honor the full ten-year warranty commitment. However, we always provide a five-year warranty based on the date of first installation.

Claim Process

The claimant can make service request by creating and submitting service ticket to SIGENERGY via APP. Please follow the instructions and steps in "support" menu of mySigen APP. Generally, the mySigen APP will automatically collect the following information before claimant submit service ticket:

(i) Contact information of claimant, including name of the person, phone number, email and address.

(ii) Information regarding all defective system, including model No., serial number, installation date and failure date.

(iii) Error message on APP screen and additional information regarding the fault/error.

(iv) Description of trouble shooting actions before the failure and detailed information of previous problems.

Please make the claim within 30 days from the failure date, otherwise SIGENERGY will treat it as you have abandoned the right to make a warranty claim.

If this way is not available, please have above information to hand as it may be required when contacting the local installer or SIGENERGY's national office.

In order to deliver a friendly and timely service, SIGENERGY is cooperating with many of distributors, installers and third-party service company all over the world. As such, please treat them as the default service channel of SIGENERGY; SIGENERGY will support and audit them to ensure they deliver a good service to customers.

SIGENERGY shall at its own discretion, remote diagnosis, modify and update software by Internet. Each time a warranty claim is made against the Products that have no internet connection, claimant is obliged to conduct an on-site inspection and data collection under the instruction of SIGENERGY. When there is hardware need to repair, SIGENERGY shall arrange an on-site replacement / exchange of hardware. The claimant is responsible for granting access, making time, and ensuring the safety of technician from SIGENERGY's service partner.

Warranty Obligations

If a claim is received within the warranty period and a fault is discovered that is covered, SIGENERGY will, at its own discretion,

(i) Fix the issue by changing configurations or updating software.

(ii) Exchange the inverter/battery/charger system for a system that is brand new or refurbished but at least functionally equivalent to the original system, or an upgraded model which is either functionally equivalent or functionally superior to the original one.

If SIGENERGY repairs or replaces a product part, its warranty continues for the remaining portion of the Warranty Period or 6 Months from the date of the repair or replacement, whichever is greater.

In case of replacement, the product removed shall become the property of SIGENERGY.

If the system is found not to be covered by this Limited Warranty, SIGENERGY reserves the right to charge a handling fee.

The warranty can only be transferred from the original owner to next owner in case the device is still installed in the initial location.

Warranty Cover Range

Unless a special/unique agreement exists between SIGENERGY and customer, the limited warranty covers:

(i) Hardware materials costs for necessary to reestablish trouble-free operation of the covered product.

(ii) Labor cost relating to repairs, uninstalling and reinstalling of spare parts /products on-site, and basic travel cost.

(iii) Shipment cost which is normal ground transportation and customs duties for spare parts replaced as well as the cost of sending allegedly defective unit back.

All other costs including but not limited to compensation from direct or indirect damages arising from the defective product, or loss of electrical power generated during the product downtime are NOT covered by the limited warranty.

General Exclusions

This Limited Warranty does not apply to circumstances from the following,

(i) Damage caused by improper installment by the installer not following the installation instructions.

(ii) Damage caused by improper use by the end user not following the user manual.

(iii) Damage caused by willful conduct of users, authorized installers and certified third parties.

(iv) Disassembly, repairs and replacement of parts by third -party/personnel not authorized by SIGENERGY.

(v) Force majeure (storm damage, lightning strike, over-voltage, fire, thunderstorm, flooding, pests, etc.)

(vi) Cosmetic issues, wear and tear, which will not adversely affect the proper functioning of the product.

(vii) Damaged by software, interfacing, parts, supplies or other products not supplied by SIGENERGY.

(viii) Damage caused during transport, exceeding of temperature range during use.

(ix) Any rust that appears on the device's enclosure caused by harsh environmental conditions, accidents and external influences.

(x) Vandalism, engraving, labels, irreversible marking or contamination or theft.

(xi) The equipment is installed in coastal areas within 500 meters of the coastline.

Limitation of Liability

It is the end user's sole and exclusive remedy against SIGENERGY and SIGENERGY's sole and exclusive liability in respect of defects in product. This limited warranty*** replaces all other SIGENERGY warranties and liabilities, whether oral, written, (non-mandatory) statutory, contractual, in tort or otherwise, including, without limitation, and where permitted by

applicable law, any implied conditions, warranties or other terms as regards satisfactory quality or fitness for purpose. However, this limited warranty shall neither exclude nor limit any of your legal (statutory) rights under the applicable national laws. To the extent permitted by applicable law(s), SIGENERGY does not assume any liability for any loss of, damage to or corruption of data, for any loss of profit, loss of use of battery systems or functionality, loss of business, loss of contracts, loss of revenue or loss of anticipated savings, increased costs or expenses or for any indirect loss or damage, consequential loss or damage or special loss or damage, or punitive loss or damage. To the extent permitted by applicable law, SIGENERGY's liability shall be limited to the purchase value of the battery system. The above limitations shall not apply in case of gross negligence or intentional misconduct of SIGENERGY or in case of death or personal injury resulting from SIGENERGY's proven negligence.

*** In some countries/districts, end users may receive an additional warranty promise (should be at least equivalent to the manufacturer's warranty) which is provided by SIGENERGY's local distributor; should any claims arise in this respect, please direct them to the local distributor. Please note this SIGENERGY limited warranty statement may NOT be the latest version, please refer to the latest version of the SIGENERGY limited warranty by visiting global website.

SigenStor Home

User Manual

Three-phase System

A1

Version: 01

Release date: 2024-01-30

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Contents

Revision History

Version	Date	Description
01	2024.01.30	First official release.

Overview

Introduction

This document mainly introduces the product introduction, networking, system operation and maintenance of the devices in the SigenStor Home Three-phase system.

Readers

This document is suitable for product users and professionals

Sign Definition

The following signs may be used in the document to indicate security precautions or key information. Before installation and operation, familiarize yourself with signs and their definitions.

Signs	Definition
Danger	Danger. Failure to comply may result in death or serious personal injury.
Warning	Danger. Failure to comply may result in serious personal injury or property damage.
Caution	Caution. Failure to comply may result in property damage.
Tips	Important or key information, and supplementary operation tips.

Chapter 1 Safety Precautions

Basic Information

Before installing, operating, and maintaining the equipment, familiarize yourself with this document.

The "Danger ", "Warning", "Caution" items described in this manual are only supplementary to all precautions.

The Company shall not be liable for equipment damage or property loss caused by the following reasons:

- Failure to obtain approval from the national, regional power authority.
- The installation environment does not meet international, national, or regional standards.
- Failure to observe local laws, regulations and norms when operating and maintaining equipment.
- The installation area does not meet the requirements of the equipment.
- Failure to follow the instructions and precautions in this document.
- Failure to handle the equipment with care or violent installation may result in equipment damage and liquid leakage and pose a risk of fire or explosion hazards.
- Failure to follow the warning labels on equipment or tools.
- Negligent, improper operation or intentional damage.
- Battery capacity loss or irreversible damage caused by your failure to charge the device in time.
- Damage caused by your or a third party's replacement of our equipment (such as mixing our battery pack with other batteries, using our battery pack with other brands of inverters or converters, etc.).
- The equipment is damaged because of your or a third-party company fails to use the accessories supplied with the packing box or purchase and install accessories of the same specification.

- Equipment damage caused by improper operations such as disassembling, replacing, or modifying the software code without authorization.
- Equipment damage caused by force majeure (such as war, earthquake, fire, storm, lightning, flood, debris flow, etc.).
- Damage caused by the failure of the natural environment or external power parameters to meet the standard requirements of the equipment during actual operation (for example, the actual operating temperature of the equipment is too high or too low).
- The equipment was stolen.
- The equipment is damaged after the warranty period.

Safety Requirements

Danger

- An overheated battery pack may cause fire or explosion. Do not expose the device to high temperature or heat sources (such as fire, or heaters) around the equipment for a long time.
- Do not clean or soak the equipment with water, alcohol, or oil to avoid power leakage or battery pack leakage.
- Do not tipover or cause impact to the equipment. In case of an accident, please stop using the equipment immediately and contact your installer, The equipment shall be inspected and evaluated by professional personnel before continuing to use.

Warning

- Do not touch the heat sink when the equipment is operating.
- When the equipment is operating, do not cover the decorative cover plate and keep the heat dissipation channel of 300–600 mm to avoid fire at high temperature.

Caution

- Do not use the equipment if it has any defects. If the equipment appears abnormal (for example, battery pack leakage or appearance distortion), contact your installer.
- Carbon dioxide fire extinguishers and ABC dry powder fire extinguishers are recommended at home.
- If the equipment cannot be charged, please contact your installer in time.

Do not use the equipment in the following situations:

- When connected to public infrastructure systems.
- When connected to emergency medical equipment.
- When connected to elevators and other control devices.
- Any other critical systems.

Chapter 2 Introduction to energy storage system

2.1 Product Introduction

Inverter

Product code	Model No.	Name	Function specification
SigenStor EC	SigenStor EC 5.0 TP	Sigen Energy Controller 5.0 kW Three Phase	Inverter; it can be used in photovoltaic energy storage scenarios and needs to be used together with PV modules and SigenStor BAT.
	SigenStor EC 6.0 TP	Sigen Energy Controller 6.0 kW Three Phase	
	SigenStor EC 8.0 TP	Sigen Energy Controller 8.0 kW Three Phase	
	SigenStor EC 10.0 TP	Sigen Energy Controller 10.0 kW Three Phase	
	SigenStor EC 12.0 TP	Sigen Energy Controller 12.0 kW Three Phase	
	SigenStor EC 15.0 TP	Sigen Energy Controller 15.0 kW Three Phase	
	SigenStor EC 17.0 TP	Sigen Energy Controller 17.0 kW Three Phase	
	SigenStor EC 20.0 TP	Sigen Energy Controller 20.0 kW Three Phase	
	SigenStor EC 25.0 TP	Sigen Energy Controller 25.0 kW Three Phase	
SigenStor AC	SigenStor AC 5.0 TP	Sigen Storage Controller 5.0 kW Three Phase	Inverter; it can be used in pure storage scenarios and needs to be used with SigenStor BAT.
	SigenStor AC 6.0 TP	Sigen Storage Controller 6.0 kW Three Phase	
	SigenStor AC 8.0 TP	Sigen Storage Controller 8.0 kW Three Phase	
	SigenStor AC 10.0 TP	Sigen Storage Controller 10.0 kW Three Phase	

	SigenStor AC 12.0 TP	Sigen Storage Controller 12.0 kW Three Phase	
	SigenStor AC 15.0 TP	Sigen Storage Controller 15.0 kW Three Phase	
	SigenStor AC 17.0 TP	Sigen Storage Controller 17.0 kW Three Phase	
	SigenStor AC 20.0 TP	Sigen Storage Controller 20.0 kW Three Phase	
	SigenStor AC 25.0 TP	Sigen Storage Controller 25.0 kW Three Phase	
Sigen Hybrid	Sigen Hybrid 5.0 TP	Sigen Hybrid Inverter 5.0 kW Three Phase	Inverter; it can be used in conjunction with PV modules for pure PV applications or in combination with PV modules and SigenStor BAT for photovoltaic storage systems after the purchase and activation of a license.
	Sigen Hybrid 6.0 TP	Sigen Hybrid Inverter 6.0 kW Three Phase	
	Sigen Hybrid 8.0 TP	Sigen Hybrid Inverter 8.0 kW Three Phase	
	Sigen Hybrid 10.0 TP	Sigen Hybrid Inverter 10.0 kW Three Phase	
	Sigen Hybrid 12.0 TP	Sigen Hybrid Inverter 12.0 kW Three Phase	
	Sigen Hybrid 15.0 TP	Sigen Hybrid Inverter 15.0 kW Three Phase	
	Sigen Hybrid 17.0 TP	Sigen Hybrid Inverter 17.0 kW Three Phase	
	Sigen Hybrid 20.0 TP	Sigen Hybrid Inverter 20.0 kW Three Phase	
	Sigen Hybrid 25.0 TP	Sigen Hybrid Inverter 25.0 kW Three Phase	

Battery Pack

Product code	Model No.	Name	Function specification
SigenStor BAT	SigenStor BAT 5.0	Sigen Battery 5 kWh	It can store electric energy.
	SigenStor BAT 8.0	Sigen Battery 8 kWh	

Power Sensor

Product code	Model No.	Name	Function specification
Power Sensor	Sigen Sensor TP-DH （SDM630MODBUS V2）	Sigen Power Sensor Three Phase DH	Data acquisition for grid connection points enables zero-power grid connection.
	Sigen Sensor TP-CT120-DH(SDM630MCT 40mA/120A)	Sigen Power Sensor Three Phase External CT 120 A DH	
	Sigen Sensor TP-CT300-DH （SDM630MCT 40mA/300A）	Sigen Power Sensor Three Phase External CT 300 A DH	
	Sigen Sensor TP-CT600-DH （SDM630MCT V2/600A）	Sigen Power Sensor Three Phase External CT 600 A DH	

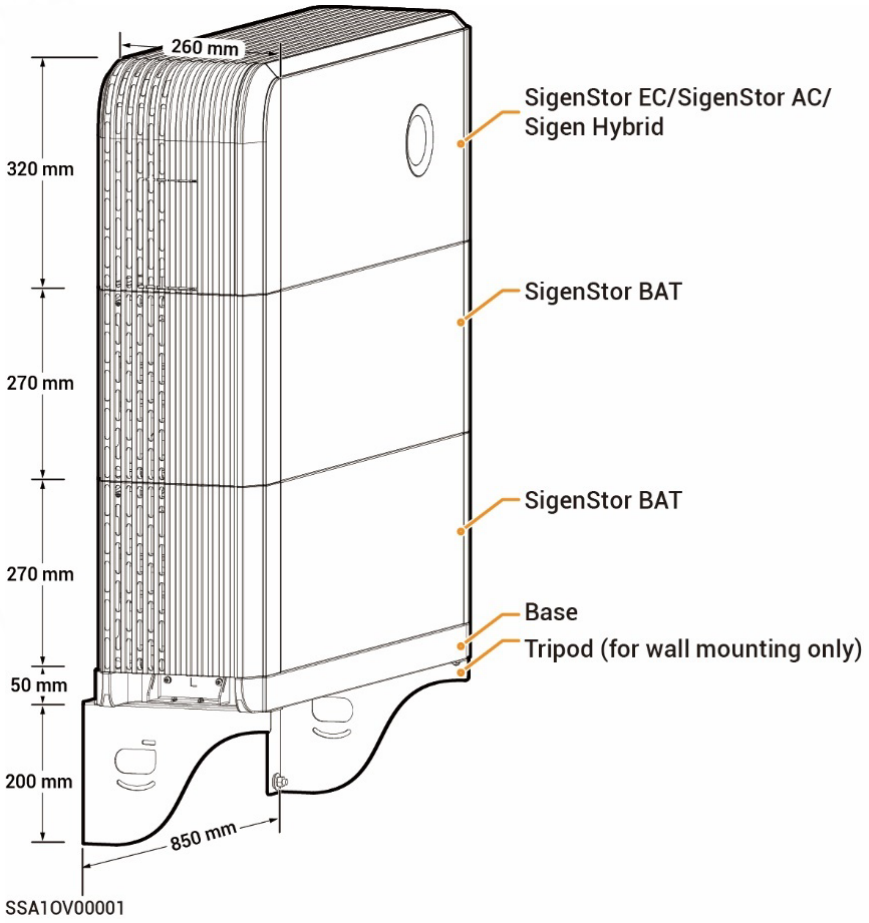
Communication Module

Product code	Model No.	Name	Function specification
CommMod	Sigen CommMod	Sigen Communication Module	If it's used with our inverters, the communication between inverters and management systems should be realized through 4G.

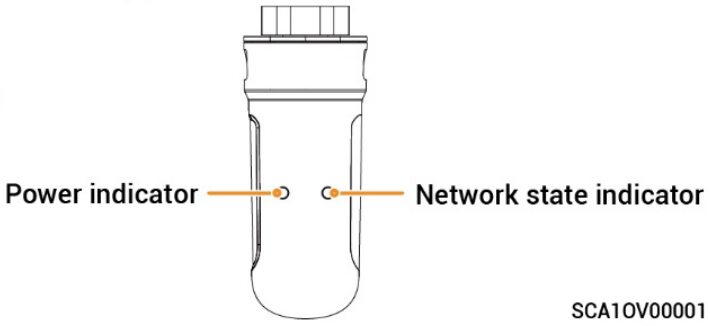
2.2 Appearance Introduction

2.2.1 Appearance and Dimensions

Inverter and Battery Pack

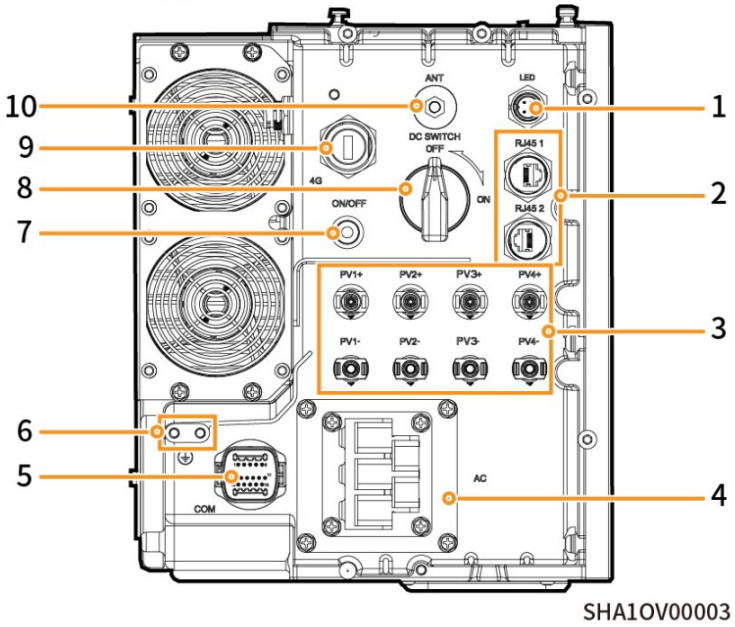


CommMod



2.2.2 Port Introduction

SigenStor EC/ SigenStor AC/Sigen Hybrid Left View



S/N	Name	Marking
1	Decorative cover strip light connector	LED
2	Network interface	RJ45 1/ RJ45 2
3	DC input interface	PV1+/PV2+/ PV3+/PV4+/ PV1-/PV2- /PV3-/PV4-
4	AC output interface	AC
5	Communication interface	COM
6	Ground screw	-
7	Switch button	ON/OFF
8	DC switch	DC SWITCH
9	Sigen CommMod interface	4G
10	Antenna interface	ANT

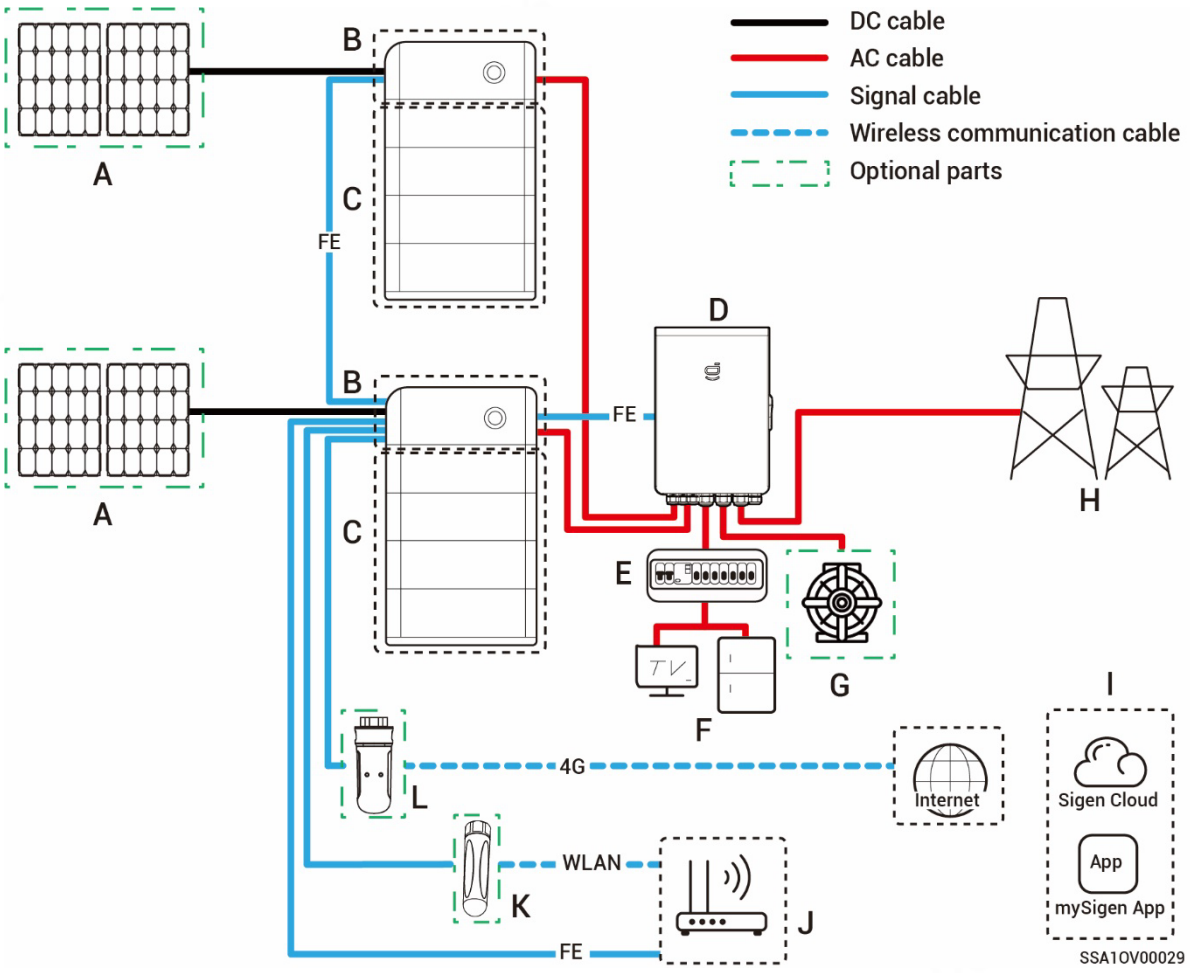
2.3 Label Description

Symbols	Definition
	Warning! Life at risk. The equipment has potential hazards after running. Take proper protection when operating the equipment.
	After the equipment is powered off, the discharge of internal components is delayed. Wait 10 minutes until the equipment is fully discharged according to the label time.
	Warning! Risk of burns. The equipment surface is hot. Do not touch the equipment when it is running. Doing so may result in burns.
	Please refer to the instructions to operate the equipment.
	Earthing mark

2.4 Introduction to Typical Networking

- Our company's products can be used for Home energy storage system. The Home energy storage system consists of photovoltaic panels, inverters, battery packs, master control switches, loads, power grids, etc.
- The main function of Home energy storage system is to store the direct current generated by photovoltaic panels into battery packs. Or alternatively, the electricity in the photovoltaic system and the battery pack can be converted into alternating current for use by the load or incorporated into the grid.

Networking Diagram (Whole Home Backup)



A. PV panel **B.** SigenStor EC/SigenStor AC /Sigen Hybrid

C. SigenStor BAT **D.** Gateway **E.** Backup Distribution panel

F. Backup Electric equipment **G.** Diesel generator

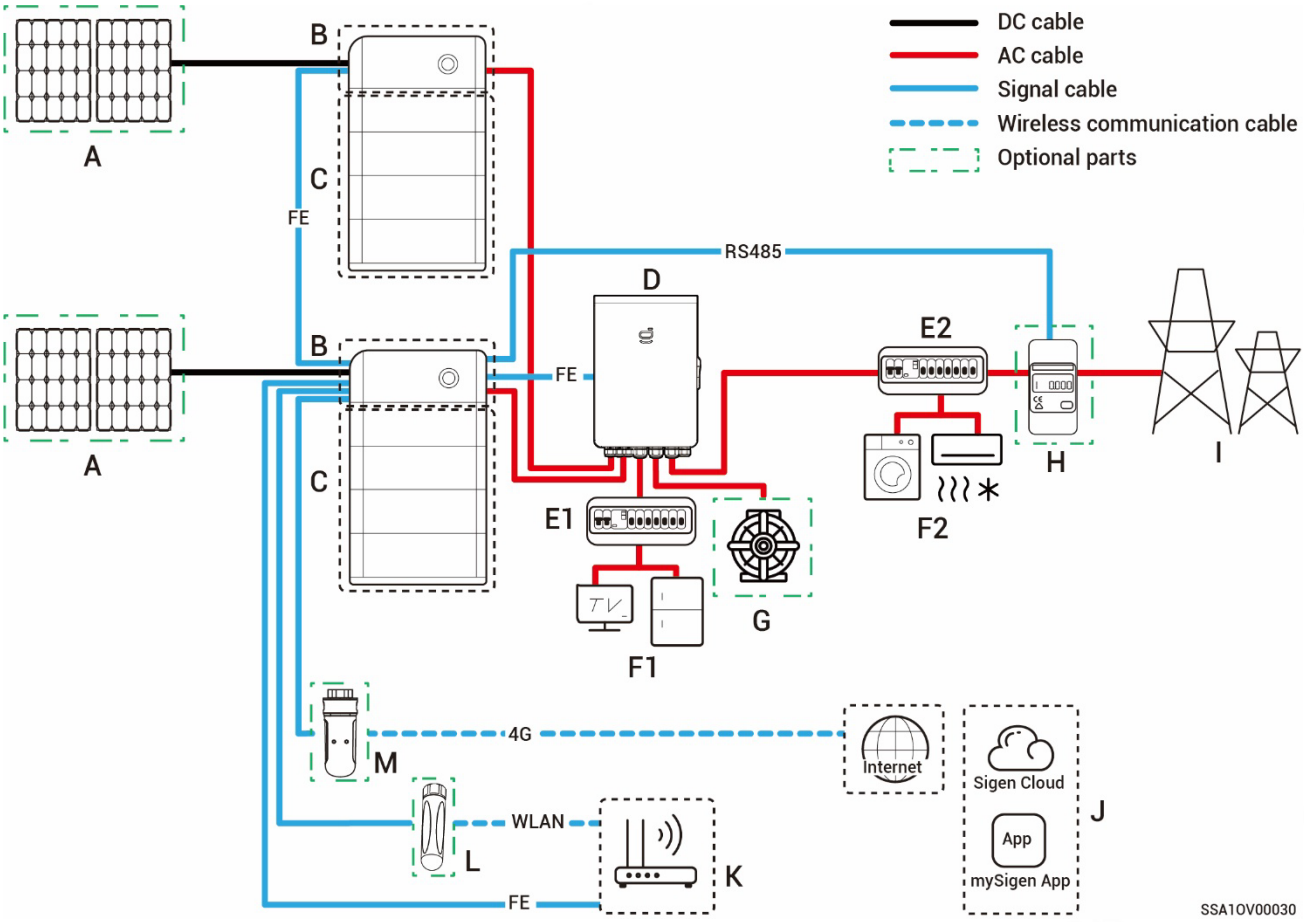
H. Power grid **I.** mySigen **J.** Router **K.** Antenna

L. CommMod

Tips

- When B is SigenStor AC, A is not configured.
- As a backup energy source for long-term off-grid applications, the diesel generator can work in tandem with the Gateway to provide a smooth transition between PV, storage and diesel power generation.
- It is recommended to use FE and WLAN for communication with inverter. CommMod users must top up their own 4G data plan after a period of 2 years.

Networking Diagram (Partial Home Backup)



A. PV panel **B.** SigenStor EC/SigenStor AC /Sigen Hybrid **C.** SigenStor BAT

D. Gateway **E1.** Backup Distribution panel **E2**. Non-Backup Distribution panel

F1. Backup Electric equipment **F2.** Non-Backup Electric equipment

G. Diesel generator **H.** Power sensor **I.** Power grid **J.** mySigen

K. Router **L.** Antenna **M.** CommMod

Tips

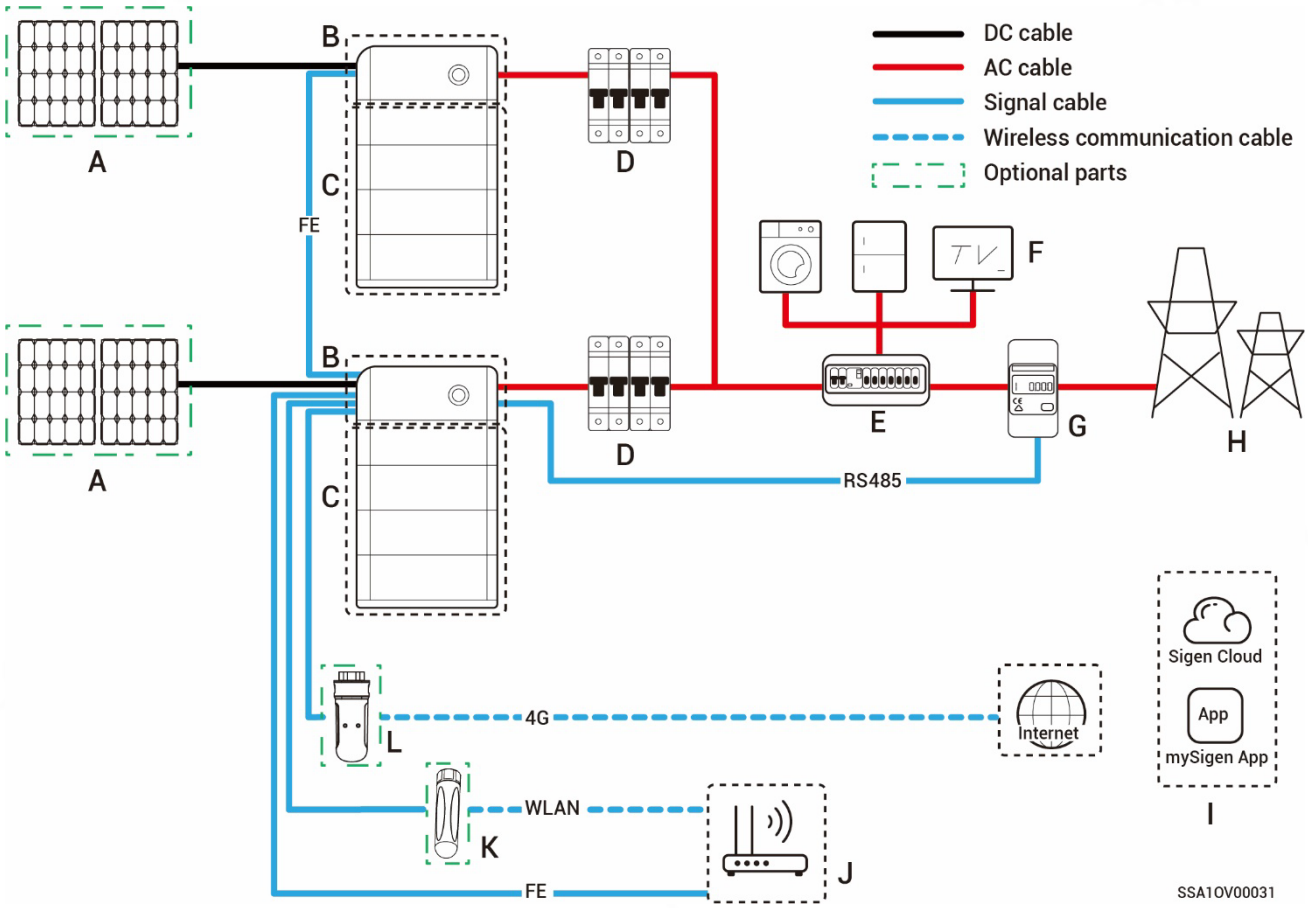
- When B is SigenStor AC, A is not configured.
- H has the function of data acquisition for grid connection points enables zero-power grid connection. For partial home backup, H does not need to be configured.For partial backup power and zero-power grid connection control networking, H is configured.
- As a backup energy source for long-term off-grid applications, the diesel generator can work in tandem with the Gateway to provide a smooth

transition between PV, storage and diesel power generation.

- It is recommended to use FE and WLAN for communication with inverter.

  CommMod users must top up their own 4G data plan after a period of 2 years.

Networking Diagram (Non-backup Networking)



A. PV panel **B.** SigenStor EC/ SigenStor AC/Sigen Hybrid **C.** SigenStor BAT

D. AC switch **E.** Distribution panel **F.** Electric equipment

G. Power sensor **H.** Power grid **I.** mySigen **J.** Router

K. Antenna **L.** CommMod

Tips

- When B is SigenStor AC, A is not configured.
- When B is Sigen Hybrid, A is optional.
- It is recommended to use FE and WLAN for communication with inverter.

CommMod users must top up their own 4G data plan after a period of 2 years.

- The rated voltage of the AC switch of the distribution panel should be not less than 380Va.c., and the rated current is recommended, that is, not less than the maximum output current of an inverter × the number of inverters in parallel connection × 1.25[1].
- The rated voltage of the AC switch connected to each inverter should be ≥ 380 Va.c and the rated current is recommended:
  - SigenStor EC/SigenStor AC/Sigen Hybrid (5.0-8.0) TP: The rated current is 20 A
  - SigenStor EC/SigenStor AC/Sigen Hybrid (10.0-15.0) TP: The rated current is 32 A
  - SigenStor EC/SigenStor AC/Sigen Hybrid (17.0-20.0) TP: The rated current is 40 A
  - SigenStor EC/SigenStor AC/Sigen Hybrid 25.0 TP: The rated current is 50 A

Note [1]: The maximum output current of an inverter can be found in its respective data sheet.

Chapter 3 Site Selection Requirements

> **Tips**
>
> The warranty applies when the equipment has been installed properly for its intended use and in accordance with the operating instructions.

Installation Environment Requirements

- Do not install the equipment in smoky, flammable, or explosive environments.
- Avoid exposing the equipment to direct sunlight, rain, standing water, snow, or dust. Install the equipment in a sheltered place. Take preventive measures in operating areas prone to natural disasters such as floods, mudslides, earthquakes, and typhoons.
- Do not install the equipment in an environment with strong electromagnetic interference.
- Ensure that the temperature and humidity of the installation environment comply with the equipment's requirements.
- The equipment should be installed in an area that is at least 500 m away from corrosion sources that may result in salt damage or acid damage (corrosion sources include but are not limited to seaside, thermal power plants, chemical plants, smelters, coal plants, rubber plants, and electroplating plants).

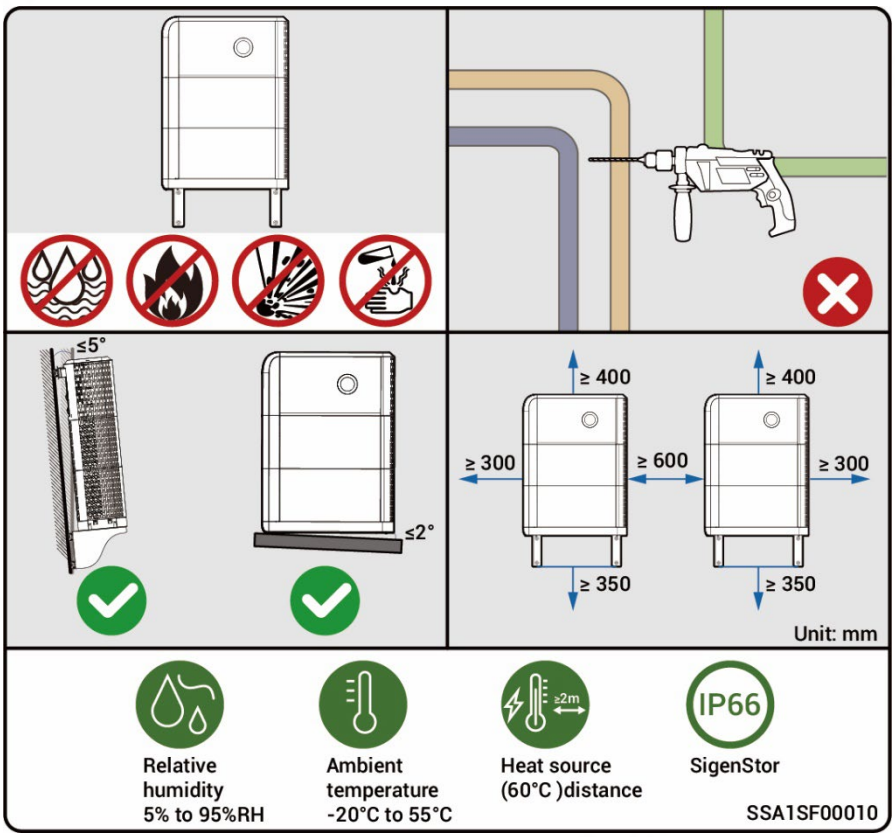
Installation Position Requirements

- Do not tilt or overturn the equipment to ensure that it is installed horizontally.
- Do not install the equipment in places easily touched by children.
- Do not install the equipment in places with fire or damp.
- Please keep away from the daily work and living places.
- Do not install the equipment in places that are enclosed, unventilated, without fire fighting facilities, or difficult for firefighters to access.

- Do not install the equipment in mobile scenarios such as RVS, cruise ships, and trains.
- You are advised to install the equipment in places that are easy to access, install, operate, maintain, and view indicator status.
- When installing the equipment in the garage, do not install the equipment in the position where the vehicle passes through to avoid collision.

Mounting Surface Requirements

- Do not install the equipment on a flammable installation base.
- The installation base should meet the load-bearing requirement. Solid brick-concrete structures, concrete walls, and floors are recommended.
- The surface of the installation base must be smooth and the installation area must meet the installation space requirements.
- No water or electricity is routed inside the installation base to prevent drilling hazards during equipment installation.



Tips

- The maximum operating temperature range applicable to the equipment is -20°C to 55°C, and the recommended optimal operating temperature range is 10°C ≤ T ≤ 35°C.
- When the battery pack temperature is below 0°C, immediate charging is not possible, and the battery pack (the built-in heating module can be automatically enabled) will activate the heating feature automatically. The best charging performance of the battery can be achieved after heating for less than 2 h. The heating feature will consume power.
- At a temperature > 40°C, the operation of the equipment may trigger a power derating that prevents the equipment from operating optimally. The higher the temperature, the shorter the service life of the equipment.

Chapter 4 Equipment Installation and Wiring

Only company authorized personnel should install and connect the equipment.

For details, see ***SigenStor Home Installation Guide - Three-phase System A1***.

Chapter 5 System Operation

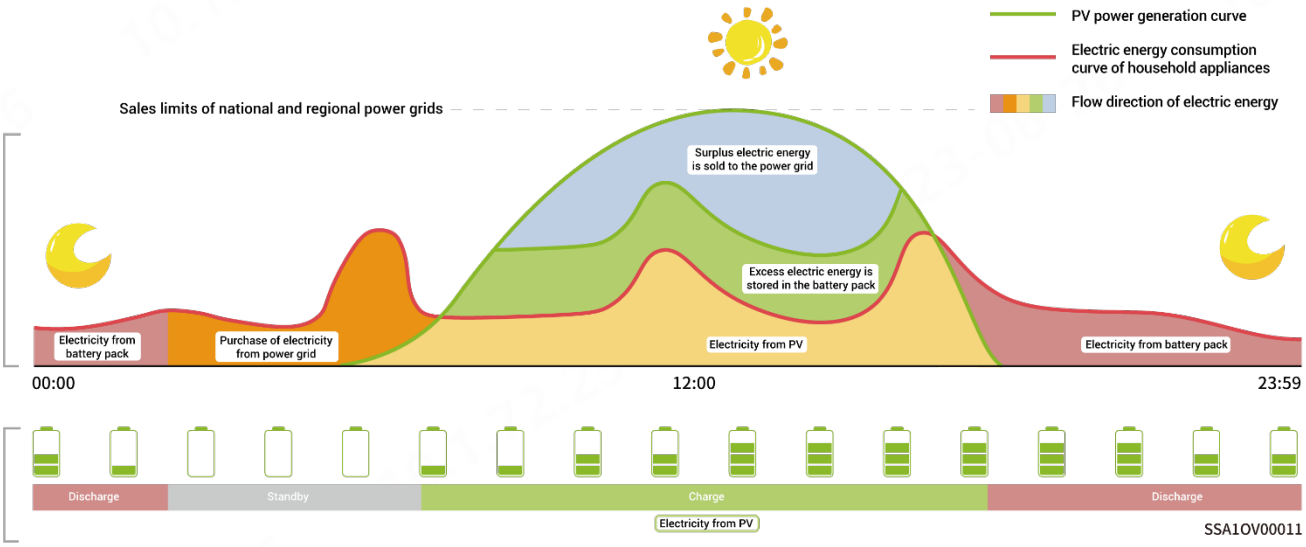
5.1 Working Mode

Tips

- There are four operating modes of the energy storage system: Sigen AI Mode, Self-Consumption Mode, Fully Fed to Grid Mode, Time-based Control Mode. The Sigen AI Mode is recommended.
- Sigen AI Mode can be used in some countries, which is explicitly stated on the App interface.

Sigen AI Mode

By recording the peaks and troughs of users' consumption habits and local electricity prices for a period of time, Sigen AI mode can customize smart electricity solutions to maximize savings for customers.



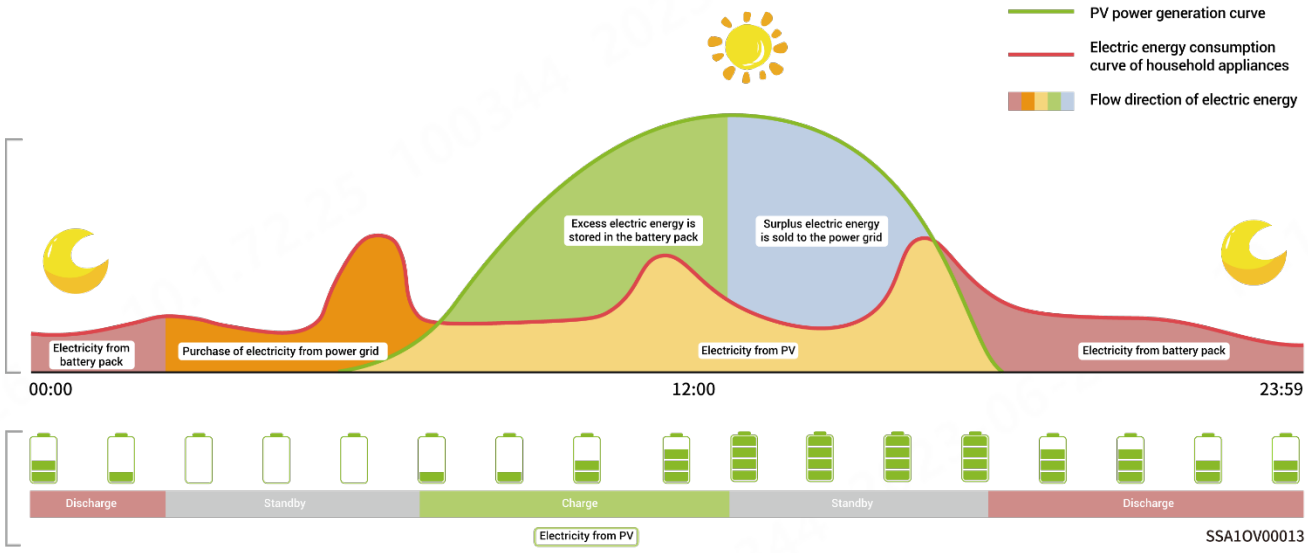
Fully Fed to Grid Mode

The PV power generation can be maximized for sale to the power grid. During the daytime when the PV-generated power is greater than maximum output capacity of the inverter, the inverter stays at maximum output while the excess electricity is stored in batteries; when the PV-generated power is lower than maximum output capacity of the inverter or when no PV power is generated at

night, the batteries are discharged to ensure that the inverter can maximize the output.

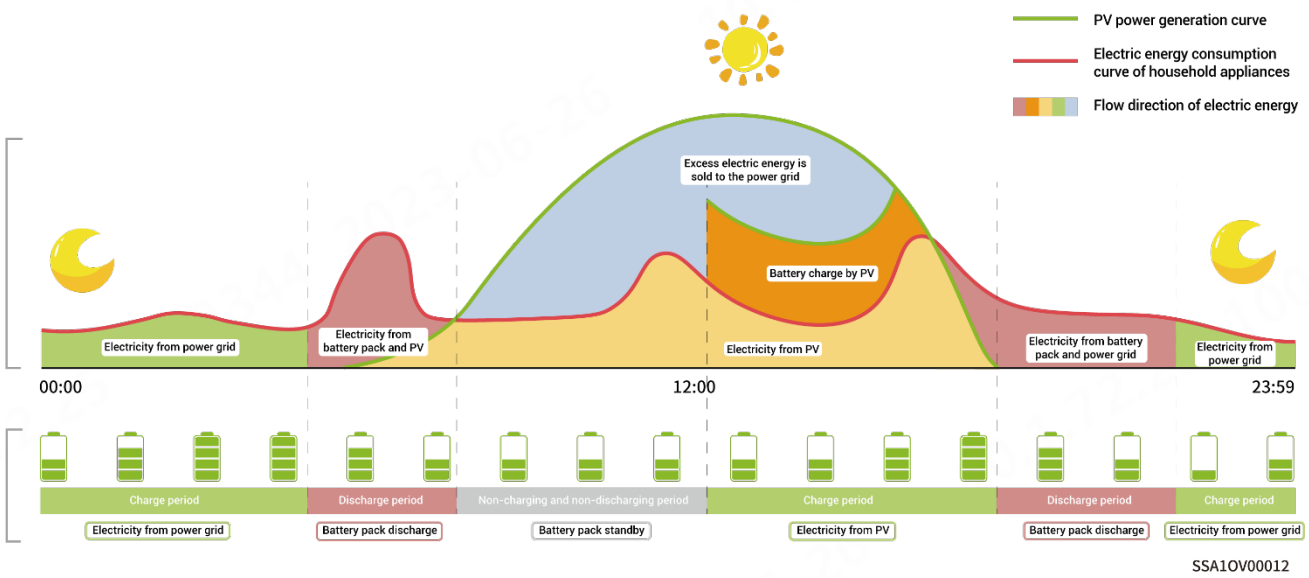
Self-Consumption Mode

When there is sufficient solar power, the electric energy generated by the PV system will first be used to power the loads, with any excess energy being stored in the batteries. If there is still surplus energy, it will flow into the power grid. When there is insufficient solar power, the batteries will release electric energy to loads. By increasing the self-consumption ratio of the PV system and improving the self-sufficiency ratio of household energy, you can effectively save on your electric bills.



Time-based Control Mode

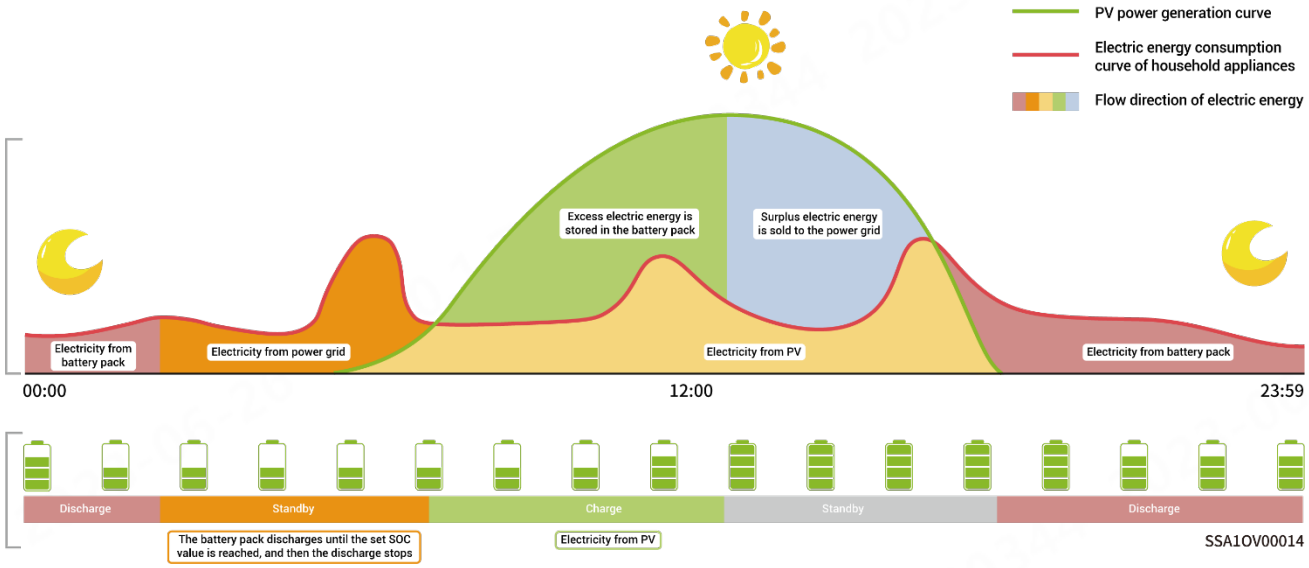
In Time-based Control Mode, the charging period and discharge period should be manually set in the mySigen App, and the other periods are non-charging and non-discharging ones. The surplus electricity generated by PV during the day can be sold to the grid or charged to the battery, and the battery can be charged at night during the period of low electricity price of the grid to save electricity costs.



Backup Reserve:

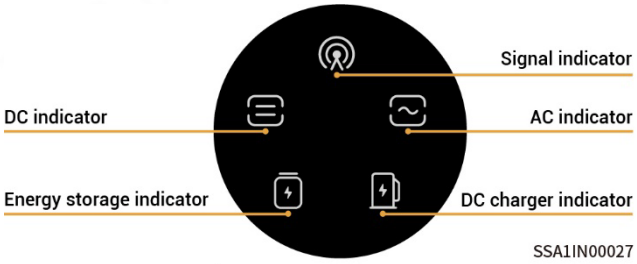
If there is a Gateway in the network, you can manually set the "Backup Reserve" value in mySigen App. When the grid is connected, the battery stops discharging when the set backup SOC is reached; when the grid is powered down, the battery power from the backup can be used.

Example: Self-Consumption Mode involves backup SOC.



5.2 LED Indicator State

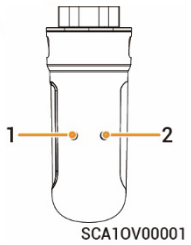
SigenStor EC/ SigenStor AC/Sigen Hybrid Indicator



Indicator	Color	State	Description
		Always on	The DC side is connected but not running.
		Always on	The DC side is running.
		-	The DC side is not connected.
		Flash	The DC side is faulty.
		Always on	Inverter failure.
		Always on	The AC side is connected but not running.
		Always on	Grid-connected operation.
		Always on	Off-grid operation.
		-	The AC side is not connected.
		Flash	Off-grid overload operation.
		Flash	The AC side is faulty.
		Always on	Inverter failure.
		Always on	All SigenStor BATs are connected but not running.
		Flash	SigenStor BAT is charging.
		Flash	SigenStor BAT is discharging.
		-	All SigenStor BATs lie dormant.
		Flash	Some SigenStor BATs are faulty.
		Always on	All SigenStor BATs are faulty.

Indicator	Color	State	Description
		Off	The management system is not connected.
		Flash	Connected to local App.
		Always on	Connected to the management system using an FE or WLAN.
		Always on	Connected to the management system over 4G.
		Flash	Insufficient traffic for Sigen CommMod.

CommMod Indicator



SCA1OV00001

S/N	Name	State	Description
1	Power indicator	-	-
2	Network state indicator	Slow flashing (200 ms on/1800 ms off)	The network is being connected
		Slow flashing (1800 ms on/200 ms off)	Standby.
		Quick flashing (125 ms on/125 ms off)	Data is being transferred.

5.3 mySigen App Query

The App can be downloaded in the following two ways. For details, see ***mySigen App User Manual***.

Chapter 6 System Maintenance

6.1 Routine Maintenance

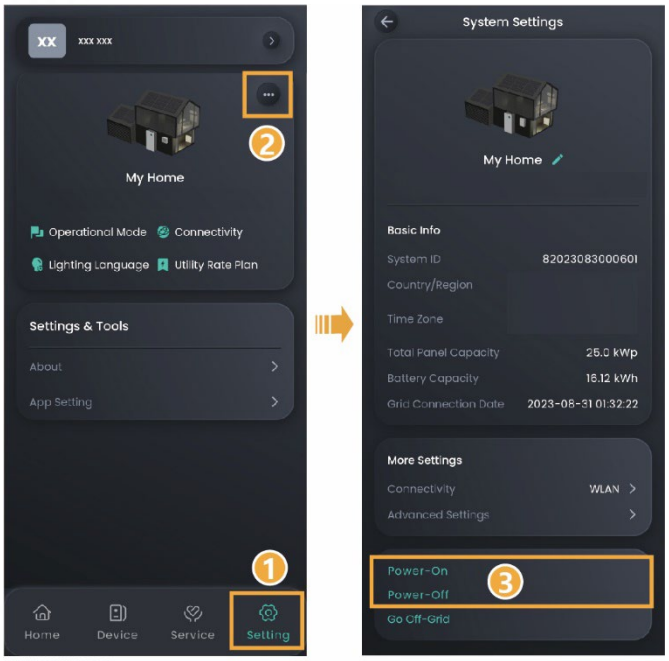
To ensure the long-term running of the equipment, you are advised to perform routine maintenance according to this section.

Inspection content	Inspection method	Power off or not	Maintenance cycle
System cleaning	Check the decorative cover regularly for shielding and dirt. If so, clean it up. Do not use tools that may cause electric shock or insulation damage, such as wire brushes and wet towels during the cleaning process.	Yes	Once every three months.
System running state	• Check whether the equipment is damaged or deformed. • Listen for any abnormal noises during the operation of the equipment. • When the equipment is running, check whether the equipment parameters are correctly set.	No	Once every six months.

6.2 Equipment Powering-on/Power-off

Scheme 1: App operation

In the mySigen app, tap "Settings" to turn the device on or off.

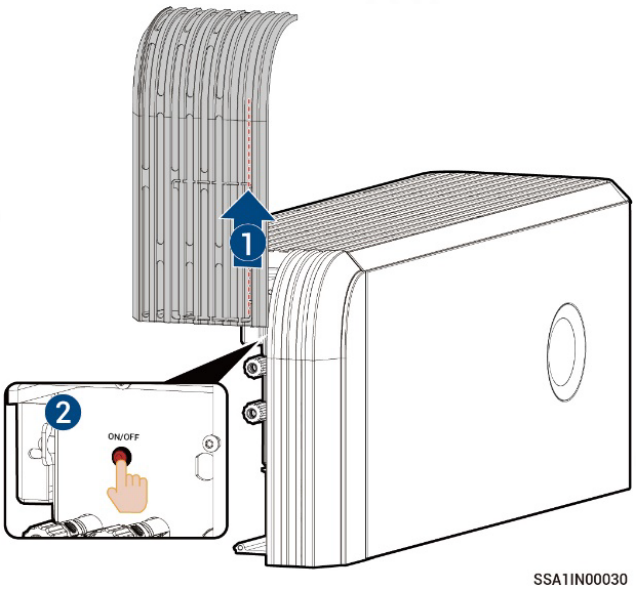


SSA1CM00001

Scheme 2: Manual operation

Follow the steps shown to remove the side and top decorative cover, and press the ON/OFF switch button.

> **Tips**
>
> Press and hold for more than 3s to turn on or off the power; an interval of more than 10s is needed between power-on and power-off.



Tips

In case of prolonged inactivity of the equipment (such as being offline for several consecutive days or having minimal operational hours), the system will issue a reminder. If no feedback is received from you, the equipment will be automatically turned off as a precautionary measure for safety. To resume operation of the equipment, please reach out to us for further instructions.

6.3 Low SOC

The self-discharge characteristic of battery pack will cause power loss. If the equipment is not charged for a long time, it may be damaged due to overdischarge of power. When the battery is low, charge the equipment in time. Under normal circumstances, the equipment can charge itself according to the running condition. If the equipment cannot be charged, please contact your sales agent in time and deal with it within the specified time. If the battery capacity is lost or irreversible damage is caused due to the delay, the company will not be liable.

- When the battery power is greater than or equal to 10%, charge within 30 days
- When the battery power is less than or equal to 0% and less than 10%, charge within 7 days

Scenarios that may cause a charge failure (including but not limited to) :

- The PV side has no input, and the power grid side is powered off for a long time.
- The equipment is faulty.
- Parameters are not set correctly.

6.4 Emergency Treatment

Emergency in case of Fire

Danger

- Please shut down the equipment or disconnect the main power switch when it is safe.
- The high temperature may distort or damage the battery pack, resulting in electrolyte overflow or toxic gas leakage. Do not go near the battery pack and wear protective equipment.
- If the fire is small, use carbon dioxide or ABC dry powder extinguisher to extinguish the fire.
- If the fire is spreading, evacuate the building or equipment area immediately and call the fire department. Re-entry to burning buildings is prohibited.
- Do not touch or come into contact with high voltage components during fire fighting, due to the risk of electric shock.
- After extinguishing the fire, do not use the equipment, please contact your installer.

Emergency in case of Flood

Danger

- Please shut down the equipment or disconnect the main power switch when it is safe.
- If the battery pack is submerged, do not touch it to avoid the danger of electric shock.
- After the flood waters recede, do not use the equipment. Please contact your installer.

Emergency in case of Battery Pack Malfunctions

Danger

- When the battery pack has abnormal odor, electrolyte leakage, or heat, do not touch it, and contact professional personnel immediately. Professionals must wear protective equipment such as goggles, rubber gloves, gas masks, and protective clothing to protect themselves.
- The electrolyte is corrosive and contact may cause skin irritation or chemical burns. In case of accidental contact with the electrolyte, take the following measures immediately:
  - Inhalation: Evacuate the contaminated area, keep fresh air circulating, and seek immediate medical help.
  - Eye contact: Flush eyes with plenty of water for at least 15 minutes. Do not rub eyes. Seek medical help immediately.
  - Skin contact: Wash the contact area with plenty of soapy water and seek medical help immediately.
  - Ingestion: Induce vomiting and seek medical help immediately.
- Do not continue to use abnormal battery packs, please contact your installer.

Emergency in case of Battery Pack Drops or Impacts

- If there is an obvious odor, smoke, or fire, keep away from the equipment immediately and contact professional personnel.
- Do not use the battery pack if it has been dropped or hit. Please contact your installer.

Chapter 7 Appendix

7.1 Technical Parameter

For details about equipment parameters, see the Data sheets of the product.