



Plug-In Solar Installation Instructions

Renusol Metasole+ Landscape Mount Kit

Plug-In Solar – Power Your Future
www.pluginsolar.co.uk

These installation instructions contain important information on safety matters and the installation of the Plug-In Solar kit. Please read this guide carefully to ensure safe installation and operation.

*Installations are undertaken at the customer's own risk. This Installation manual is to be used as a guide only, and your discretion must be used when installing the Plug-In Solar kit. You MUST follow ALL local regulations and consult a professional in the appropriate field if you are in any doubt with any aspect of the installation. Plug-In Solar Ltd takes no responsibility for incorrect installation of our kits.

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TOOL REQUIREMENTS

Please note, this is just a guide, and you may require additional tools than listed here.

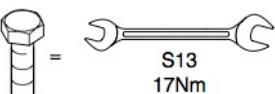
8mm Socket Tool



6mm Hex (Allen) Key



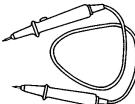
9,10,13,17,19mm Spanners



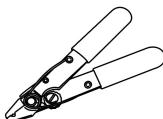
Drill with Torx30 (AW30 Bit)



Voltage Tester



Wire Strippers



Flathead Screwdriver



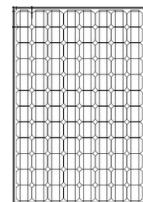
Phillips Screwdriver



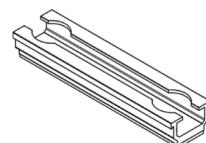
COMPONENT GUIDE

The number of components you receive will depend on the type of kit you have purchased. Please unpack all your items, and check you have all the correct components based on your Delivery Note.

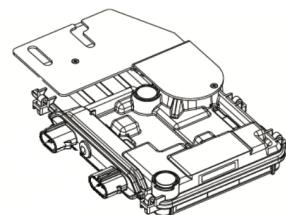
Peimar Solar Panel(s)



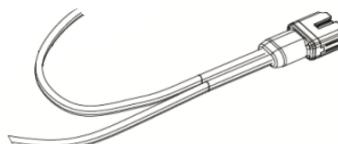
Renusol Metasole+ Rail(s)
Including all fixings (see Appendix 7 for more information)



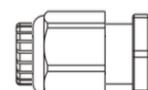
Enphase Micro-Inverter(s)



Enphase Q Cable(s)



Enphase Branch Terminator(s)



Plug-In Solar Connection Unit(s)



SAFETY INSTRUCTIONS

Before installing or using a Plug-In Solar kit, please read all instructions and cautionary markings in this document and on the Micro-Inverters and Solar Panels.

The installation of a Plug-In Solar kit shall be carried out by a competent person with sufficient skills and training to apply safe methods of work, in compliance with G98 Engineering Recommendations.

The installation of a Plug-In Solar kit will be carried out to no lower a standard than that required in the Manufacturer's installation instructions, as provided here.

No parameter relating to the electrical connection and subject to type verification certification will be modified unless previously agreed in writing between the DNO (Distribution Network Operator) and the Customer.

All electrical installations shall be performed in accordance with local electrical codes.

All appropriate health and safety regulations must be observed and required safety precautions taken.

Be aware that installation of this equipment includes the risk of electric shock.

Be aware that the body of the Micro-Inverter is the heat sink and can reach a temperature of 80°C. To reduce risk of burns, do not touch the body of the Micro-Inverter.

DO NOT disconnect the PV module from the Micro-Inverter without first disconnecting the AC power. In no circumstances, connect a DC input when an AC connector is unplugged.

DO NOT attempt to repair a Micro-Inverter. If it fails, contact Hoymiles Customer Support to obtain an RMA number and start the replacement process. Damaging or opening a Micro-Inverter will void the warranty.

CAUTION! The external protective earthing conductor is connected to the micro-inverter protective earthing terminal via an AC connector. When connecting; connect the AC connectors first to ensure the micro-inverter earthing then undertake the DC connections. When disconnecting; disconnect the AC by opening the branch circuit breaker. Whilst maintaining the protective earthing conductor in the branch circuit breaker, connect to the micro-inverter, then disconnect the DC inputs.

You MUST follow the IET Wiring Regulations at all times and consult a professional electrician if you are in any doubt.

WARNINGS

Never disconnect the DC wire connectors under load. Ensure that no current is flowing in the DC wires prior to disconnecting. An opaque covering may be used to cover the module prior to disconnecting the module.

Do not touch any live parts in the system, including the Solar array, when the system has been connected to the electrical grid.

Prior to installing any of the Micro-Inverters, verify that the utility voltage at the point of common connection matches the voltage rating on Micro-Inverter label.

Do not mount the Micro-Inverter in a location that allows exposure to direct sunlight. Allow a minimum of 3/4"(1.5cm.) between the roof and the bottom of the Micro-Inverter to allow proper airflow.

Always disconnect AC power before disconnecting the PV module wires from the Micro-Inverter. The AC connector of the first Micro-Inverter in a branch circuit is suitable, as a disconnecting means, once the AC branch circuit breaker in the load center has been opened.

The Micro-Inverter is powered by PV module DC power. Make sure you disconnect and reconnect the DC connections to watch for the five short flashes.

SOLAR PANEL INSTALLATION

When installing the solar panels included in your Plug-In Solar Kit, you must abide by a number of safety requirements:

Do not operate solar panels near highly flammable gas and vapors (e.g. gas tanks, gas stations).

Do not install solar panels in enclosed space.

Do not install solar panels in locations where they may be submerged in water.

Do not use solar panels as a substitute for normal roofing (solar panels are not watertight).

Do not install solar panels in close proximity to air conditioning systems.

Do not install solar panels above 4000 m (13120 ft) altitude above sea level.

Do not allow any chemical substance (e.g. oil, solvent etc.) to come into contact with any part of the solar panels.

The solar panel operating temperature must be between –40 °C to +85 °C (–40 °F to +185 °F).

Prevent solar panel shadowing. Optimal solar irradiation leads to maximum energy output. Install the solar panels so that they face the sun.

Avoid shadowing (due to objects such as buildings, chimneys or trees).

Avoid partial shading (for example through overhead lines, dirt, snow).

Ensure you conform to the necessary structural requirements where you are installing the solar panels.

Ensure the solar panels are properly fastened to the ground, the roof, or the facade, using the mounts provided.

Ensure sufficient rear ventilation of the module.

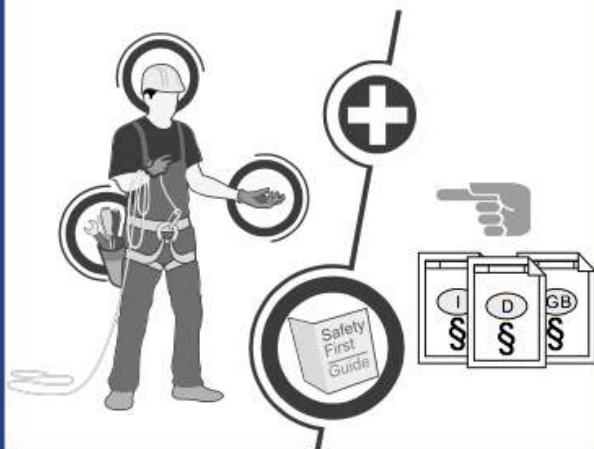
Follow grounding procedures set out in the roof mount installation manual.

Please see the following instructions for further information on how to handle and install your solar panels.

Refer to the Micro-Inverter installation section of this installation manual for information on how to wire your solar panels to the Micro-Inverters.

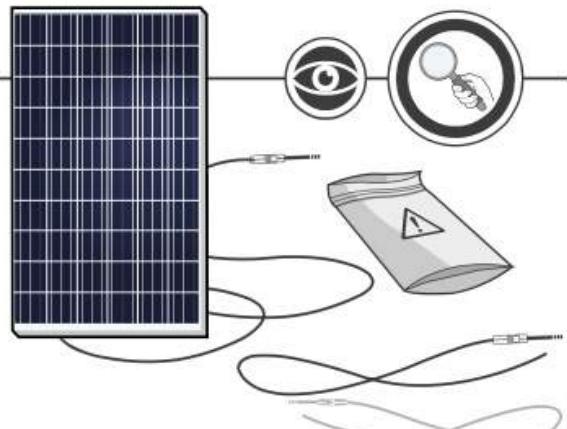


- ➔ Ensure that all personnel are aware of and adhere to accident-prevention and safety regulations.
- ➔ While working wear clean gloves.



DANGER! Risk of fatal injury due to electric shock!

- ➔ Do not install damaged modules.

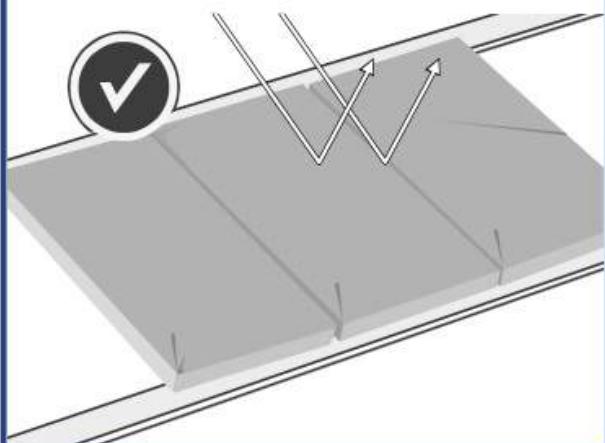


- ➔ Inspect the packaging for damages.
- ➔ Contact the transport company regarding any damage to the packaging and follow their instructions.
- ➔ Follow any instructions on the packaging.



DANGER! Risk of fatal injury due to electric shock!

- ➔ Cover the modules with an opaque material during installation.

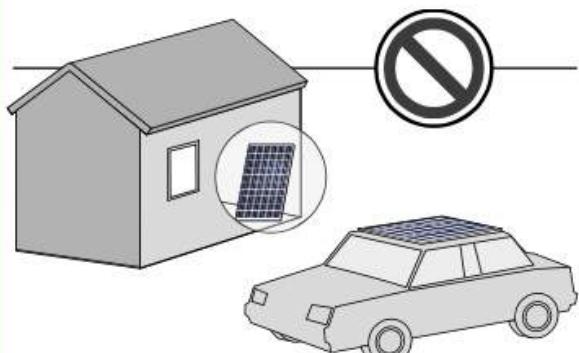


- ➔ Leave modules in their original packaging until installation.
- ➔ Store the modules securely in cool and dry rooms. The packaging is not weatherproof.



WARNING! Fire Risk!

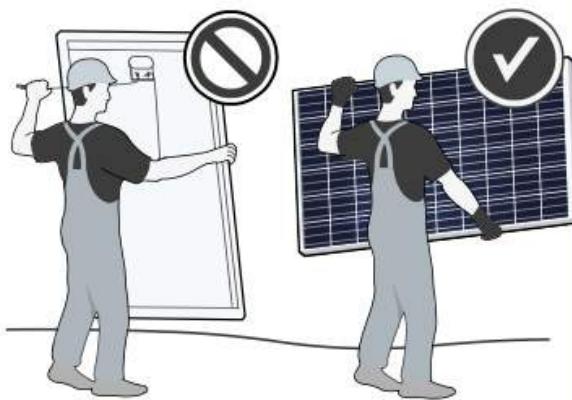
- ➔ Do not install modules indoors.
- ➔ Do not install modules on moving objects.





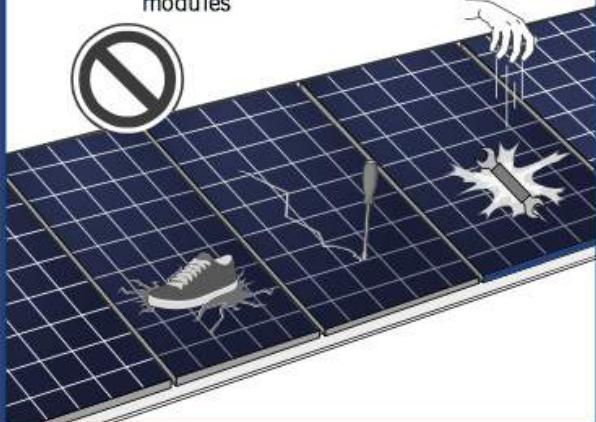
NOTE! Module damage may occur!

- ➔ Never lift or move the module with the connection cables or junction box.
- ➔ Carry modules upright and horizontally as shown.



NOTE! Module damage may occur!

- ➔ Never step on modules.
- ➔ Do not subject modules to any mechanical stress.
- ➔ Do not allow any objects to fall onto modules



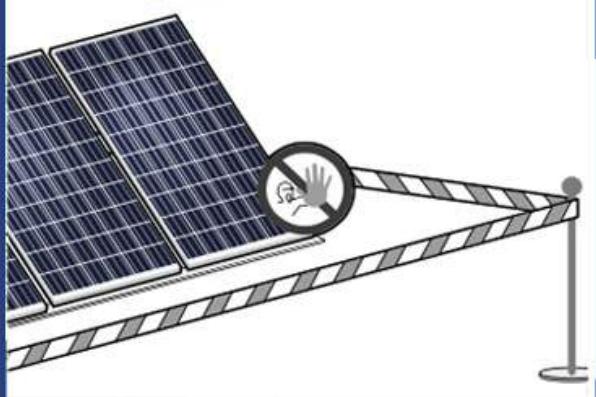
NOTE! Module damage may occur!

- ➔ Do not drop modules.



DANGER! Risk of fatal injury due to electric shock!

- ➔ Block off the installation zone.
- ➔ Keep children and unauthorized individuals away from the solar power system.



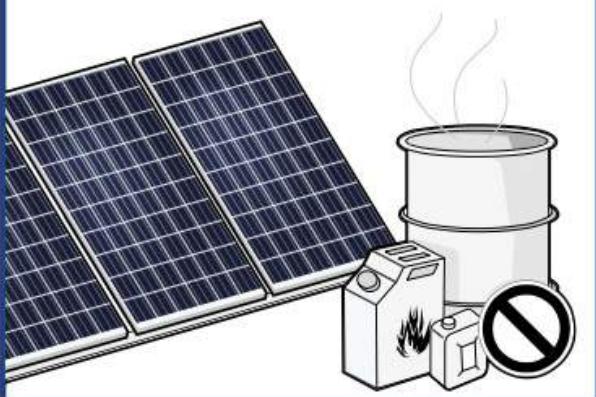
NOTE! Module damage may occur!

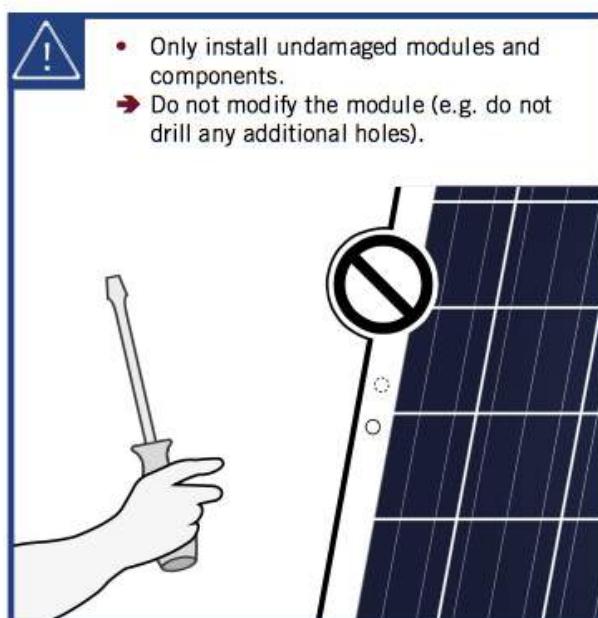
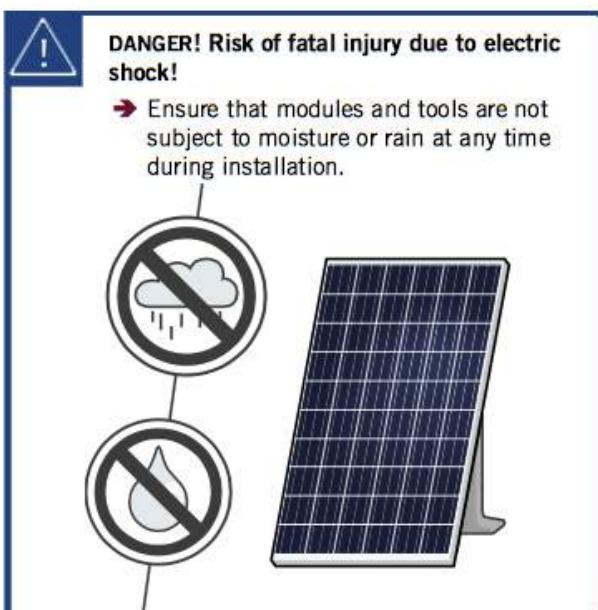
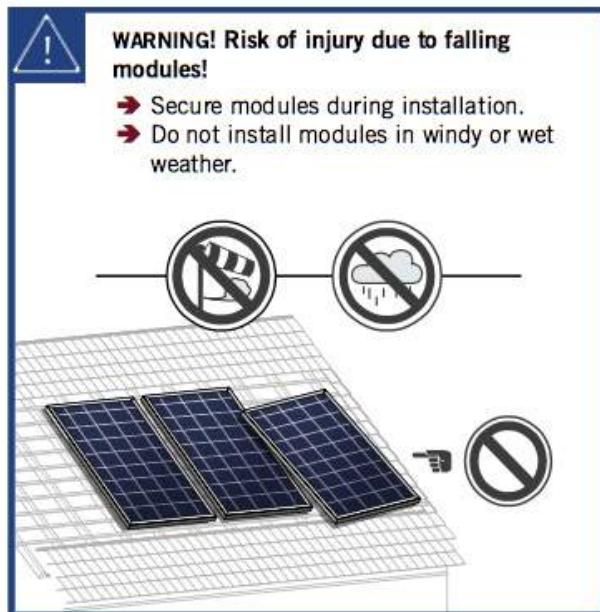
- ➔ Do not stack modules.

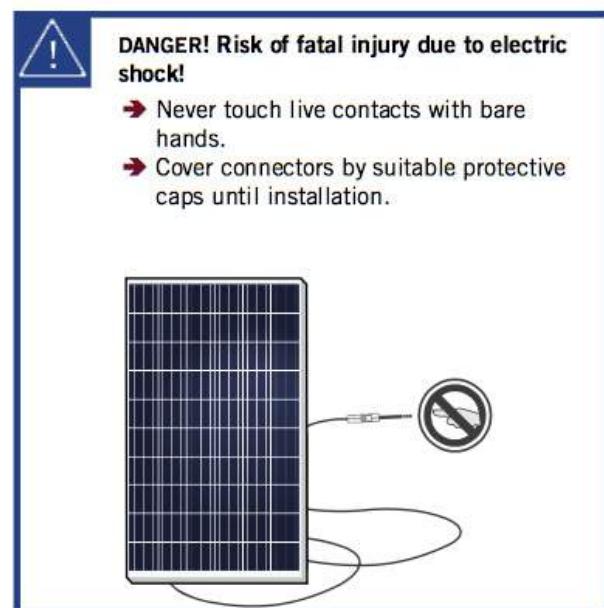


NOTE! Module damage may occur!

- ➔ Do not install modules near flammable gas/vapors.
- ➔ Do not install modules in close proximity to air conditioning systems.







ROOF MOUNT SYSTEM INSTALLATION

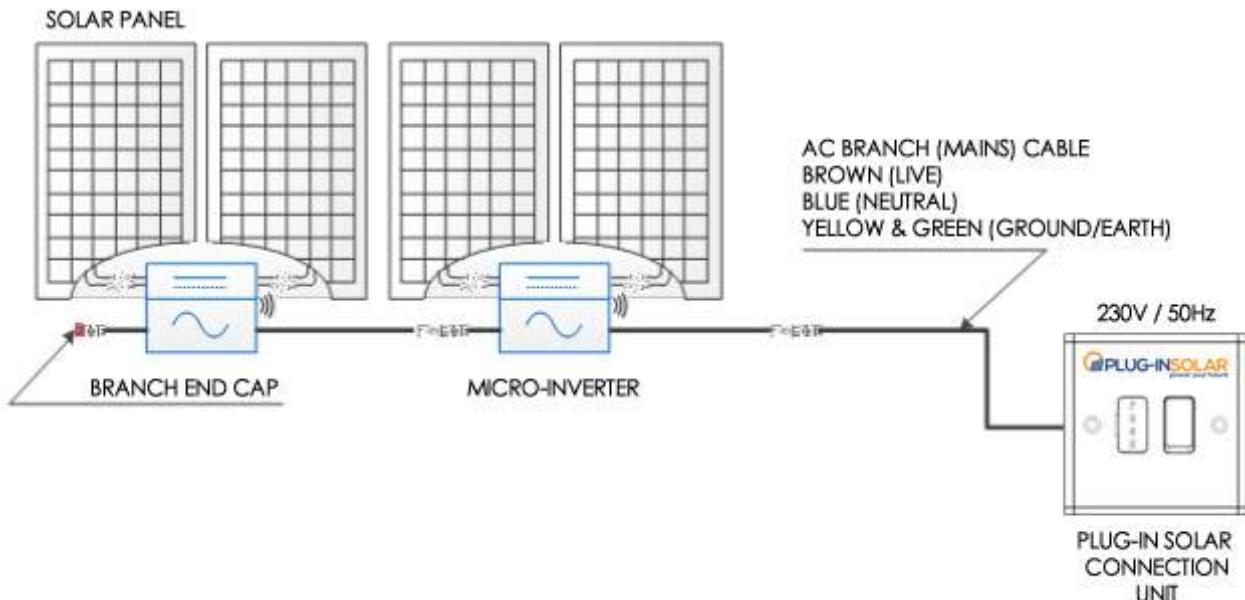
For installation instructions for the Roof Mount Kit, please refer to the Roof Mount Manual provided in Appendix 7.

Plug-In Solar takes no responsibility for the method by which you choose to install your mounting system. This is a guide only. Please consult a roofing expert if you are in any doubt on how to safely and correctly install your system. It is your responsibility to ensure the roof is watertight.

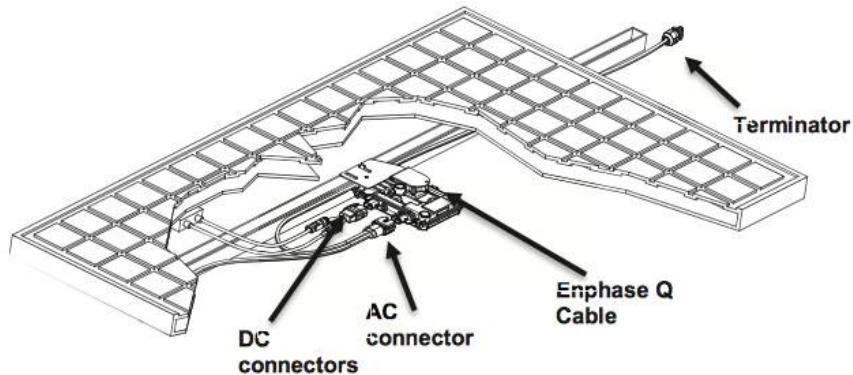
Once you have completed the installation on your roof, please return to the Micro-Inverter installation section of this manual for information on how to wire your solar panels to the Micro-Inverters.

ENPHASE MICRO-INVERTER INSTALLATION

1. System Wiring Diagram



- Once you have completed installing the roof mount system, attach the Micro-Inverters to the railing system using the nuts and bolts provided. You will need your Hex key and Spanner. Ensure the bolts are tightened securely. The Micro-Inverter must be under the module, out of long-term exposure to direct sunlight or rain.

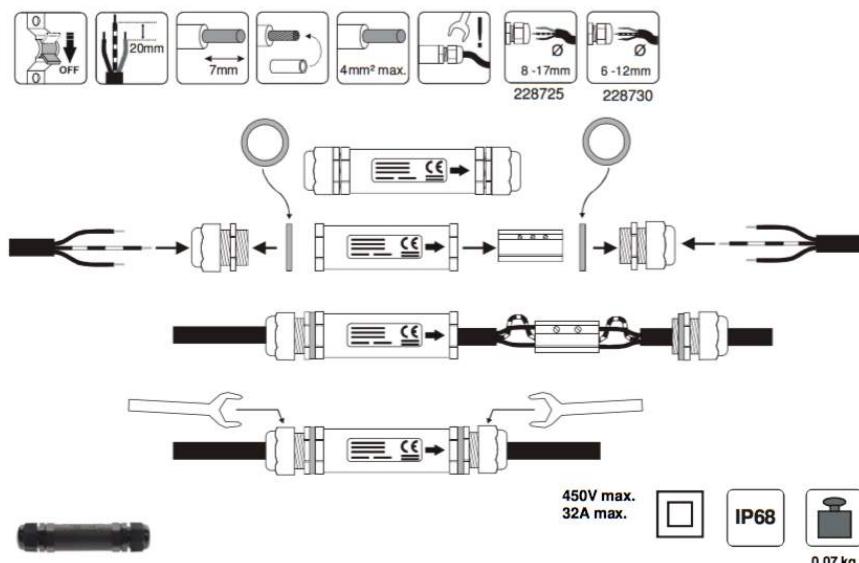


- For installation instructions for the Enphase Micro-Inverter, please refer to the Enphase Manual provided in Appendix 4.
- Each Micro-Inverter has serial number labels affixed. Once the micro-inverters are installed, please peel one label off each micro-inverter and stick them to the warranty card (please refer to the Enphase Manual in Appendix 4 of this installation manual for more information).

5. If you need to extend the length of AC Bus Trunk Cable, we can supply extra lengths on request. If you provide your own cable please be sure to use the correct cable wire size (AWG) depending on distance of the last Micro-Inverter to the connection point and the number of Micro-Inverters in the branch, as shown in the table below. Please be aware, the longer the cable run, the greater the power loss.

	Number of Micro-Inverters in branch							
	2	3	4	5	6	7	8	9
External Wire size(AWG)	Maximum External cable length (ft)							
12	370.7	237.1	167.9	124.3	93.6	70.2	51.4	35.7
10	593.1	379.4	268.6	198.9	149.7	112.3	82.3	57.1
8	926.8	592.9	419.6	310.7	233.9	175.5	128.6	89.3
6	1482.8	948.6	671.4	497.1	374.3	280.8	205.7	142.9

Follow the instructions outlined below to connect the AC Bus Trunk Cable to your extension cable, using a connection box, or similar (supplied upon request).



WIRING THE SOLAR TO THE EXISITING MAINS CIRCUIT

IMPORTANT SAFETY INFORMATION – FOR YOUR PROTECTION

Before installation please read these instructions carefully and use the Plug-In Solar Connection Unit in accordance with these safety wiring instructions. If you are in any doubt about connecting this product consult a qualified electrician.

In older houses, you may find a variety of old fuse boxes where the mains supply comes in. You may also have wiring and fittings of an older style. These may not be up to the standard required today. If this is the case, have it all checked and tested by a professional electrician BEFORE carrying out any work on it.

Electricity is dangerous. Always disconnect from mains supply before any inspection or repair to equipment. Safety must always be given top priority. Do not allow children to tamper with electrical devices.

ALWAYS FOLLOW THE IET WIRING REGULATIONS.

You must NOT install the Plug-In Solar Connection Unit in the following locations as set out by Part P:

- (a) within a room containing a bath or shower, the space surrounding a bath tap or shower head, where the space extends —
 - (i) vertically from the finished floor level to —
 - (aa) a height of 2.25 metres; or
 - (bb) the position of the shower head where it is attached to a wall or ceiling at a point higher than 2.25 metres from that level; and
 - (ii) horizontally —
 - (aa) where there is a bath tub or shower tray, from the edge of the bathtub or shower tray to a distance of 0.6 metres; or
 - (bb) where there is no bath tub or shower tray, from the centre point of the shower head where it is attached to the wall or ceiling to a distance of 1.2 metres; or
- (b) a room containing a swimming pool or sauna heater.

As an additional precaution, wear rubber-soled shoes. This will provide a measure of insulation between you and the ground!

IF YOU ARE NOT ABSOLUTELY CERTAIN ABOUT ANY ASPECT OF ELECTRICAL WORK, SEEK PROFESSIONAL ADVICE

- 1.1. Switch off the power and remove the fuse for the relevant circuit before carrying out any work, or inspecting, either it, or the appliances connected to it. Never inspect, or carry out work on, any part of the system with the power on. Make sure that someone else cannot inadvertently restore power.



- 1.2. Use a voltage tester to check the power to the wires or connections are off before touching them. Once the power is disconnected, wire the Plug-In Solar Connection Unit using the following instructions.

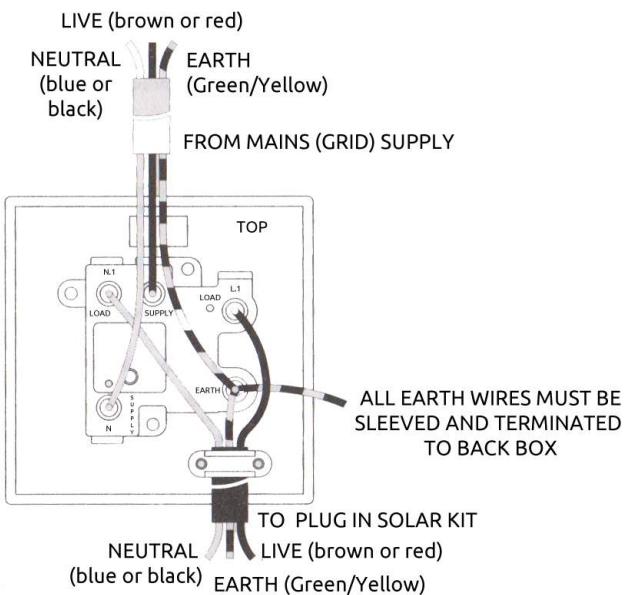
Wire Identification (if in doubt consult a qualified electrician)

EARTH – Green and Yellow Sleeving

LIVE – Red or Brown

NEUTRAL – Blue or Black

- a) If using the Plug-In Solar Connection Unit to replace an old socket (or similar), note the cable connections and wire up the Plug-In Solar Connection Unit the same way as the replaced item, with earthing as stated in these instructions.
- b) Route the cable through the appropriate entry point of the mounting box (this is usually at the rear).
- c) Cables should be prepared so sufficient conductor length reaches the terminals. Strip the ends of the individual conductors so that an adequate length enters the terminals.
- d) Carefully arrange the wiring to lie along the edges of the product or box, keeping the central area clear.
- e) Wire the Plug-In Solar Connection Unit using the following diagram (a larger version can be found in Appendix 1):



- f) When connecting the Plug-In Solar Connection Unit ensure that only the bare end of the wire enters the terminal, and no bare wires are visible. Always tighten the terminal screws, but don't over tighten. An earth connection should always be made between the mounting box earth terminal and the fused connection unit terminal. If the earth wire is bare, it must be sleeved with appropriate green/yellow sleeving.
- g) Please note: The Enphase Q Cable does not contain an earth cable, as the IQ Micro-Inverters are equipped with a class II double-insulated enclosure.

1.3. Wiring insulation tests should be completed to avoid misleading instrument readings and possible internal damage to the unit. Check your work thoroughly before restoring power to the circuit. If you are not certain, seek professional advice.

1.4. Once power has been restored, after around a two minute initialisation time, your Plug-In Solar kit will be feeding FREE electricity into your mains circuit.

ISOLATION/ISOLATOR REQUIREMENTS

Under G98 requirements, it must be possible to isolate a Plug-In Solar kit from the DNO's Distribution System, using a Double Pole Isolator. This is the function of the Plug-In Solar Connection Unit.

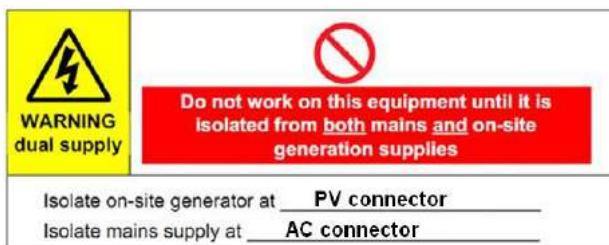
The Plug-In Solar Connection Unit, is a double pole Switched Fused Connection Unit, that adheres to British Standard BS1363-4, and offers on load isolation from the grid.

G98 regulations also state that the Plug-In Solar Connection Unit is lockable in the OFF position only. This ensures isolation under maintenance. The Fuse carrier of the Plug-In Solar Connection Unit can be locked open (the OFF position), as per the image below, in order to meet this requirement (padlock not provided).



PLACING WARNING LABELS

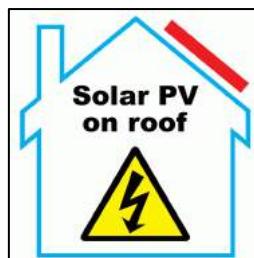
When installing a Plug-In Solar kit you must place labelling at the **Plug-In Solar Connection Unit**, **Existing Consumer Unit** and at all points of isolation between the **Plug-In Solar Connection Unit** and the **Solar Panels** within your premises. This is to indicate the presence of a Small Scale Embedded Generation installation (SSEG). The labelling should be fixed in place to ensure that it remains legible and secure for the lifetime of the installation. The following labels must be used and have been provided with your Plug-In Solar kit.



Dual supply labelling should be placed at the Plug-In Solar Connection Unit between the PV system and Existing Consumer Unit to indicate the presence of on-site generation and indicating the position of the main A.C switch disconnector.



An APS Inverter should be labelled stating "Inverter - isolate A.C. and D.C. before carrying out work". The Micro-Inverters also have this warning label as standard.



An AC isolator Label should be placed next to the Plug-In Solar Connection Unit and all other A.C switches/disconnects (if applicable). ON and OFF positions should be clearly labelled.

To ensure the Fire and Rescue Service are aware that Solar is installed on the roof the following sign shall also be fitted next to the existing consumer unit in the building. You do not need this label for Ground Mount systems.

In addition to this safety labelling, you must also display an electrical schematic diagram next to the existing consumer unit in the property. You will have been provided with an electrical schematic diagram relevant to your kit, but can see an example in Appendix 2. Please note the diagram in Appendix 2 is non-prescriptive and is for illustrative purposes only.

INSPECTING AND TESTING YOUR PLUG-IN SOLAR INSTALLATION

As part of the G98 on-site commissioning tests you shall carry out a functional check of the loss of mains protection, for example by removing the supply to the Plug-In Solar kit during operation and checking that the Plug-In Solar Connection Unit operates to disconnect the Plug-In Solar Kit from the DNO's Distribution System.

In the UK the installation of a Plug-In Solar Kit is considered non-notifiable electrical work under Part P of the Building Regulations 2013, as it is an alteration to an existing installation (the mains grid).

"Regulation 12(6A) sets out electrical installation work that is notifiable. All other electrical installation work is not notifiable – namely additions and alterations to existing installations outside special locations, and replacements, repairs and maintenance anywhere."

Installation of a non-notifiable Plug-In Solar kit should still be designed, installed, inspected, tested and certificated in accordance with **BS 7671**.

For more information on how to do this, you can find a copy of Part P building regulations here:
http://www.planningportal.gov.uk/uploads/br/BR_PDF_AD_P_2013.pdf

COMMISSIONING YOUR PLUG-IN SOLAR INSTALLATION

Once you have installed, inspected and tested your Plug-In Solar kit, it is a requirement that you complete and return a G98 Engineering Recommendation Form to your Distribution Network Operator (DNO) within 28 days.

Distribution Network Operators (DNOs) own and operate the distribution network of towers and cables that bring electricity from the national transmission network to homes and businesses. They don't sell electricity to consumers, this is done by the electricity suppliers. Informing the DNO of your installation allows them to manage the grid more effectively.

There are 9 different DNO's across the UK, so you must make sure you submit your form to the correct DNO in your area. You can find your DNO by entering your postcode using this website: <https://www.ssepd.co.uk/Whoismynetworkoperator/>

Once you have identified your DNO you must download a G98 Engineering Recommendation Form from their website (or request that they e-mail one to you).

Completing G98 Engineering Recommendation Form

An example G98 Engineering Recommendation Form can be found in Appendix 3 of this Installation Manual. Please note G98 forms differ between DNO's, this is an example only.

The G98 Engineering Recommendation Form is relatively self-explanatory, however there are a number of sections that you must complete correctly:

Installation Address Details Section

Installation details			
Address		1 The Road One Place Sussex <i>Found on your electricity bill</i>	
Post Code		AB12 3CD	
MPAN(s)		17 123456789000	

S 01 123 456
12 1234 5678 345

A Meter Point Administration Number, also (MPAN), is a 21-digit reference used in the UK to uniquely identify electricity supply points. You must correctly fill in your own MPAN in this section of the form.

Your MPAN can be found on your electricity bill and often looks like the image on the left.

SSEG Micro-Generator Details Section

Summary details of Micro-generators - where multiple Micro-generators will exist within one premises.						
Manufacturer	Date of Installation	Technology Type	Manufacturer's Ref No (this number should be registered on the ENA Type Test Verification Report Register as Product ID)	Micro-generator Registered Capacity in kW		
				3-Phase Units	Single Phase Units	
Hoymiles Converter Technology Co., Ltd	01/01/2021	Solar PV	MI-600	1kW		>0.99
Input kW Size of your Plug-In Solar Kit						

Within the SSEG Details section of the form, fill in the details of your installation. The capacity will be the size of the Plug-In Solar kit you purchased, i.e. 1kW. The Primary Energy Source must always be filled as 'Solar PV'. If you have any existing SSEG's (e.g. wind/solar) you must also declare these here.

SSEG Installer Details Section

Installer Details:	
Installer	Mr No. Body
Accreditation / Qualification	N/A (Self-installed)
Address	1 The Road One Place Sussex
Post Code	AB12 3CD
Contact person	Mr No. Body
Telephone Number	01234 567891
E-mail address	nobody@pmail.com
Installer signature	[Redacted]

As Plug-In Solar kits are DIY, self installed solar systems you should complete this section as the installer. In the Accreditation/Qualification section you should fill this in as 'N/A (Self-Installed)', unless you have an appropriate accreditation. This section of the form also needs to be signed.

Along with the completed G98 Engineering Recommendation Form, you must also supply the DNO with the following:

1. An electrical schematic diagram for your installation (A relevant electrical schematic diagram will be provided with your Plug-In Solar Kit). An example can be seen in Appendix 2.
2. A copy of the G98 Type Verification Test Report Certificate for the Micro-Inverters (This can be found with the email you were sent with this Installation Manual.)
3. A photograph of your existing electricity meter (be sure to include the make and model of the meter)

Email/Fax/Post the information above to your DNO using the contact supplied on the Commissioning Form. Do not send it to Plug-In Solar, we cannot apply to the DNO on your behalf.

When the DNO has received your form and it has been processed, you will get a confirmation email/letter to say it has been accepted.

Notifying the DNO of changes to a Plug-In Solar kit

If during the lifetime of the Plug-In Solar kit it is necessary to replace a major component of the Plug-In Solar kit, it is only necessary to notify the DNO if the operating characteristics of the Plug-In Solar kit or the Plug-In Solar Connection Unit have been altered when compared against the unit that was originally commissioned.

Notifying the DNO of the decommissioning of a Plug-In Solar kit

In the event that a Plug-In Solar kit is to be decommissioned and will no longer operate as a source of electrical energy in parallel with the DNO's Distribution System, you must notify the DNO by completing a G98 Decommissioning Confirmation Form. Please contact your DNO for a copy of this form.

COMPLETING YOUR SOLAR INSTALLTION

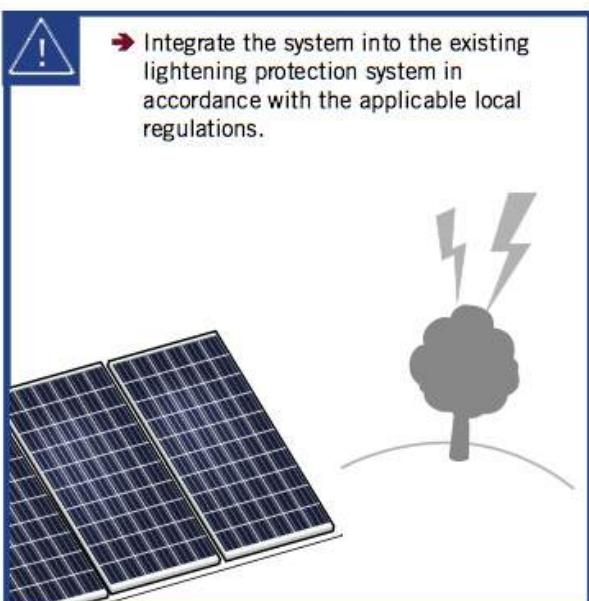


- Ensure that all necessary safety and functional tests have been carried out according to applicable standards.



NOTE! Module damage may occur!

- Ensure that the plug connections are secured away from any water-channelling surface.

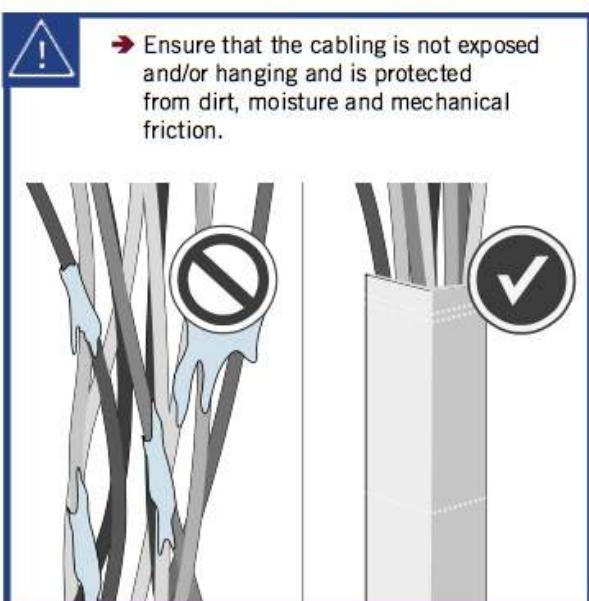


- Integrate the system into the existing lightening protection system in accordance with the applicable local regulations.



WARNING! Fire Risk!

- Do not use light concentrators (e.g. mirrors or lenses).

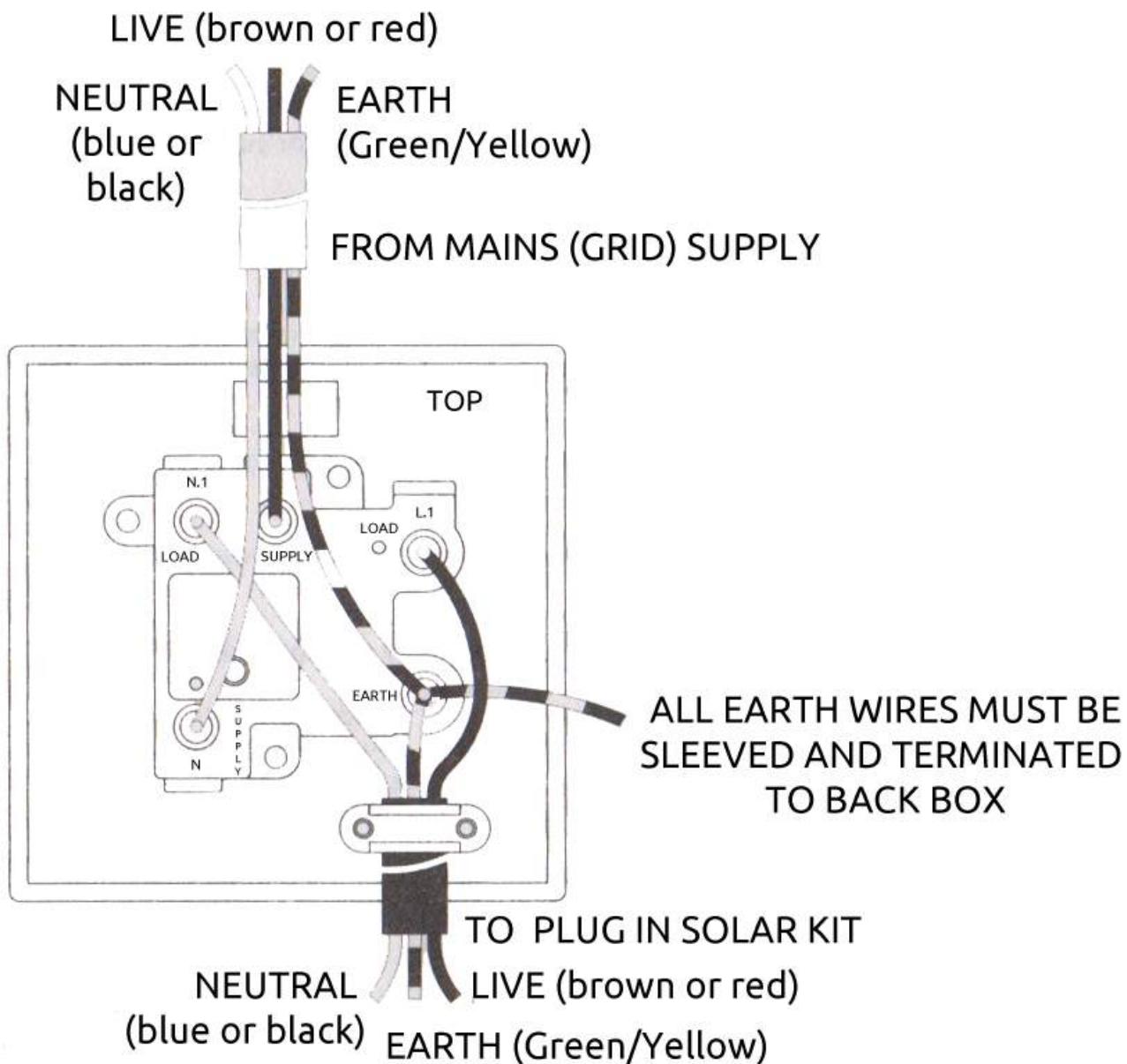


- Ensure that the cabling is not exposed and/or hanging and is protected from dirt, moisture and mechanical friction.

APPENDIX 1. PLUG-IN SOLAR CONNECTION UNIT – WIRING DIAGRAM

ALWAYS FOLLOW THE IET WIRING REGULATIONS

IF YOU ARE NOT ABSOLUTELY CERTAIN ABOUT ANY ASPECT OF ELECTRICAL WORK,
SEEK PROFESSIONAL ADVICE

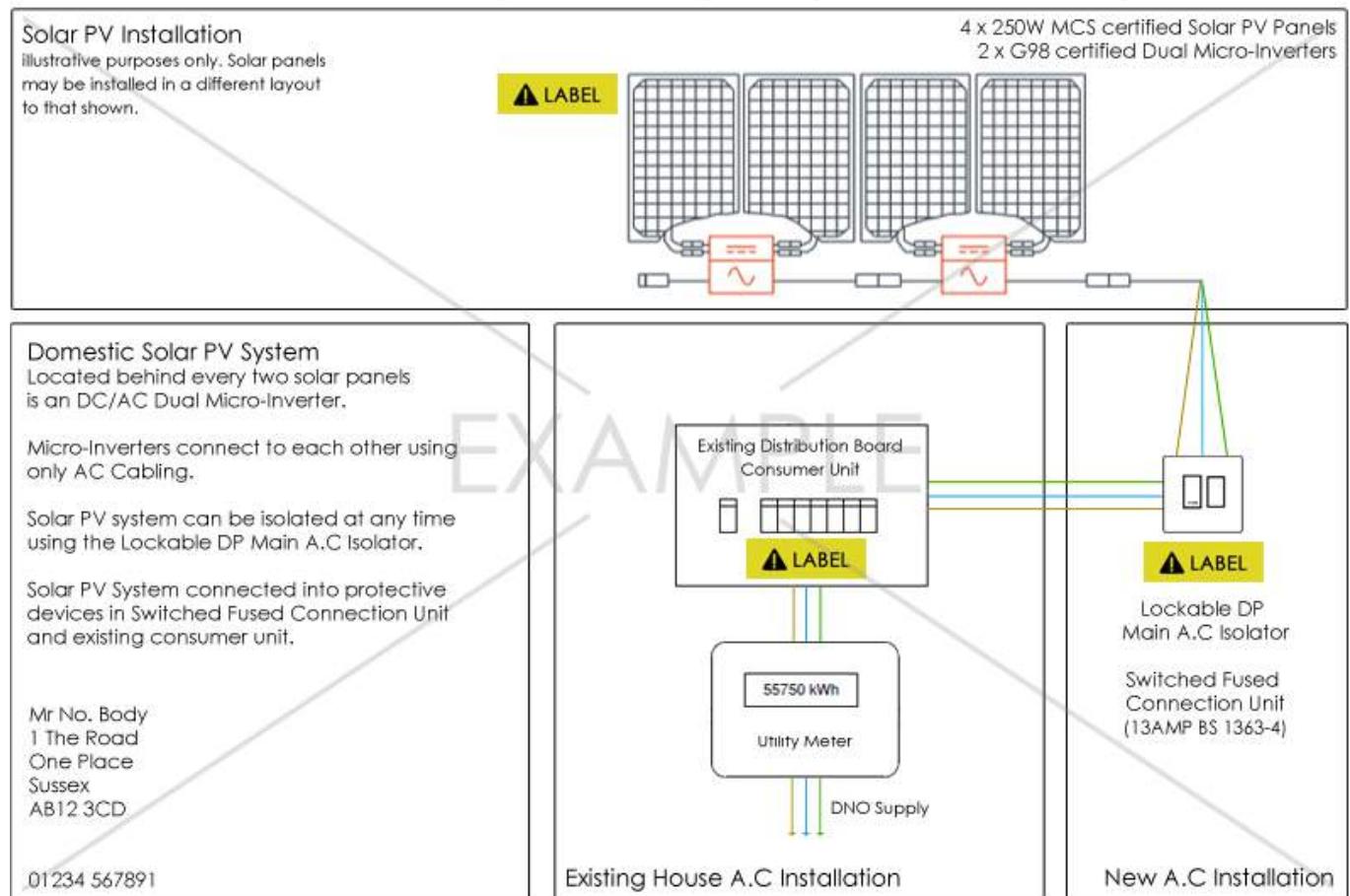


Please note: The Enphase Q Cable does not contain an earth cable, as the IQ Micro-Inverters are equipped with a class II double-insulated enclosure.

APPENDIX 2. EXAMPLE ELECTRICAL SCHEMATIC DIAGRAM

This is non-prescriptive and is for illustrative purposes only.

Electrical Schematic Diagram for 1kW (1000W) Domestic Solar PV System



Form B: Installation Document for connection under G98

Please complete and provide this document for each premises, once **Micro-generator** installation is complete.

To	ABC electricity distribution	DNO
	99 West St, Imaginary Town, ZZ99 9AA	abced@wxyz.com
Customer Details:		
Customer (name)	Mr No. Body	
Address	1 The Road One Place Sussex	
Post Code	AB12 3CD	
Contact person (if different from Customer)		
Telephone number	01234 567891	
E-mail address	nobody@mail.com	
Customer signature	
Installer Details:		
Installer	Mr No. Body	
Accreditation / Qualification	N/A (Self-Installed)	
Address	1 The Road One Place Sussex	
Post Code	AB12 3CD	
Contact person	Mr No. Body	
Telephone Number	01234 567891	
E-mail address	nobody@mail.com	
Installer signature	

Input "N/A (Self-Installed)" here

Installation details			
Address 1 The Road One Place Sussex Found on your electricity bill			
Post Code AB12 3CD			
MPAN(s) 17 123456789000			
Location within Customer's Installation Garage			
Location of Lockable Isolation Switch Utility Room			
Details of Micro-generator			
Manufacturer / Reference Hoymiles Converter Technology Co., Ltd			
Date of Installation 01/01/2021			
Primary Energy source Solar PV			
Power Factor >0.99			
Manufacturer's reference number MI-600			
Emerging technology classification (if applicable)			
Micro-generator Registered Capacity in kW	3-Phase Units		
	Single Phase Units	PH1	1kW
		PH2	
		PH3	
Declaration – to be completed by Installer for Micro-generators Tested to EREC G98			
I declare that the relevant Micro-generators and the installation which together form a Micro-generating Plant within the scope of EREC G98 at the above address, conform to the requirements of EREC G98. This declaration of compliance is confined to Micro-generating Plant tested to EREC G98 or EREC G83 as applicable at the time of commissioning.			
Signature: 		Date: 01/01/2021	

Summary details of Micro-generators - where multiple Micro-generators will exist within one premises.						
Manufacturer	Date of Installation	Technology Type	Manufacturer's Ref No (this number should be registered on the ENA Type Test Verification Report Register as Product ID)	Micro-generator Registered Capacity in kW		
				3-Phase Units	Single Phase Units	
					PH1	PH2
Hoymiles Converter Technology Co., Ltd	01/01/2021	Solar PV	MI-600	1kW		>0.99
Input kW Size of your Plug-In Solar Kit						

Use a separate line for new and existing installations and for different Primary Energy sources above.
Use PH 1 column for single phase supply.

Installing Enphase IQ 7, IQ 7+ and IQ 7X Microinverters

To install Enphase IQ Series Microinverters, read and follow all warnings and instructions in this guide and in the *Enphase IQ 7 and IQ 7+ Microinverter Installation and Operation Manual* at: enphase.com/support. Safety warnings are listed on the back of this guide.

The Enphase Microinverter models listed in this guide do not require grounding electrode conductors (GEC) or equipment grounding conductors (EGC). The microinverter has a Class II double-insulated rating, which includes ground fault protection (GFP). To support GFP, use only PV modules equipped with DC cables labeled **PV Wire** or **PV Cable**.

IMPORTANT: Enphase IQ Series Microinverters require the Q Cable and are not compatible with previous Enphase cabling. An Envoy-S is required to monitor performance of the IQ Microinverters. The Q Accessories work only with Enphase IQ Series Microinverters.

PREPARATION

- A) Download the Enphase Installer Toolkit mobile app and open it to log in to your Enlighten account. With this app, you can scan microinverter serial numbers and connect to the Enphase Envoy-S to track system installation progress. To download, go to enphase.com/toolkit or scan the QR code at right.



- B) Refer to the following table and check PV module compatibility at: enphase.com/en-us/support/module-compatibility.

Model	DC connector	PV module cell count
IQ7-60-2-INT	MC-4 locking type	Pair only with 60-cell modules.
IQ7PLUS-72-2-INT	MC-4 locking type	Pair with 60- or 72-cell modules.
IQ7X-96-2-INT	MC-4 locking type	Pair only with 96-cell modules.

- C) In addition to the Enphase Microinverters, PV modules and racking, you will need these **Enphase items**:

- An Enphase Envoy-S (model ENV-S-WM-230 or ENV-S-WB-230-F/G/I) communications gateway is required to monitor solar production and may be required to propagate a grid profile to the microinverters.
- NOTE:** Depending on your region, IQ Series Microinverters may not produce until an Envoy-S is installed and configured with the appropriate grid profile. See the [Envoy-S Quick Install Guide](#) for details.
- Enphase Q Relay, single phase (Q-RELAY-1P-INT) or Enphase Q Relay, multiphase (Q-RELAY-3P-INT).
- Tie wraps or cable clips (ET-CLIP-100) - works with both multiphase and single-phase cable
- Enphase Sealing Caps (Q-SEAL-10): for any unused connectors on the Enphase Q Cable
- Enphase Terminator (Q-TERM-R-10 for single phase or Q-TERM-3P-10 for multiphase): one for each AC cable segment end.
- Enphase Disconnect Tool (Q-DISC-10)
- Enphase Q Cable for single-phase or multiphase:

Cable model	Connector spacing*	PV module orientation	Connectors per box
Single-phase			
Q-25-10-240	1.3m	Portrait (all)	240
Q-25-17-240	2.0m	Landscape (60- and 96-cell)	240
Q-25-20-200	2.3m	Landscape (72-cell)	200
Multiphase			
Q-25-10-3P-200	1.3m	Portrait (all)	200
Q-25-17-3P-160	2.0m	Landscape (60- and 96-cell)	160
Q-25-20-3P-160	2.3m	Landscape (72-cell)	160

*Allows for 30 cm of cable slack.

- D) Check that you have these other items:

- An AC junction box.
- Tools: screwdrivers, wire cutter, voltmeter, torque wrench, sockets, and wrenches for mounting hardware
- Field Wireable Connectors (Q-CONN-R-10M and Q-CONN-R-10F for single phase Q Cable or Q-CONN-3P-10M and Q-CONN-3P-10F for multiphase Q Cable): optional male and female connectors.

- E) Protect your system with lightning and/or surge suppression devices. It is also important to have insurance that protects against lightning and electrical surges.

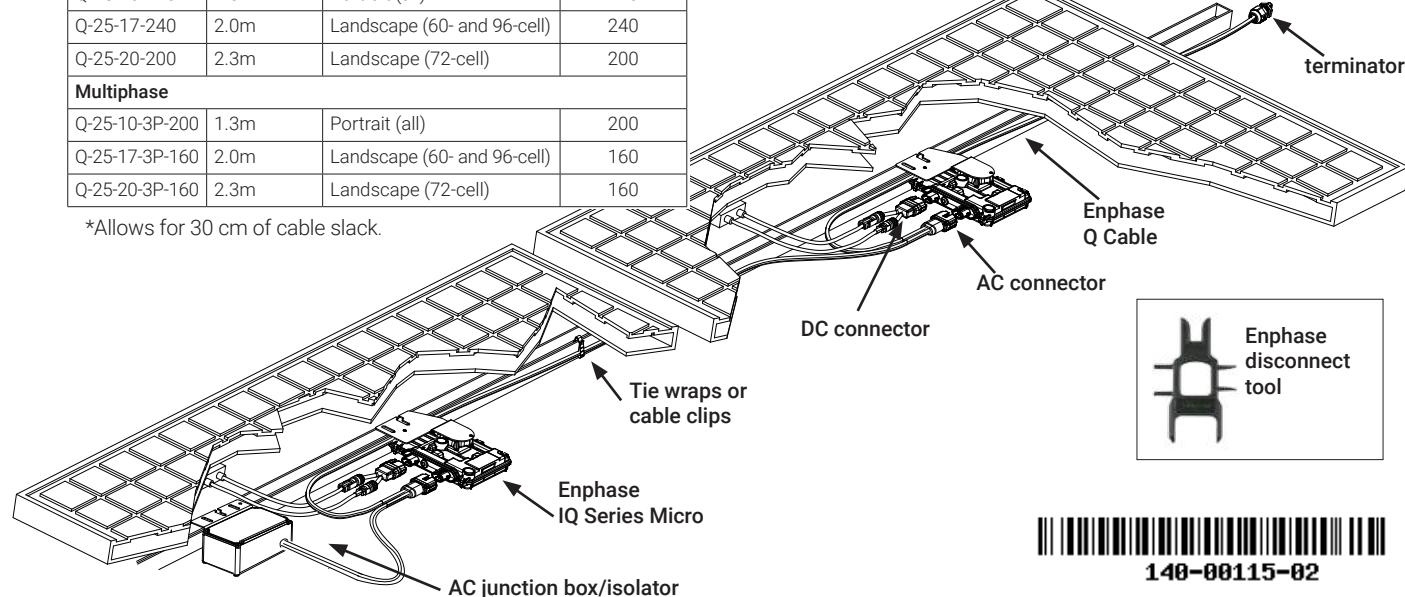
- F) Plan your AC branch circuits to meet the following limits for maximum number of microinverters per branch when protected with a 20-amp over-current protection device (OCPD). For multiphase installations, use a 3-pole 20A OCPD.

Maximum* IQ Micros per AC branch circuit		
	IQ 7 Micros	IQ 7+ Micros
Single-phase	16	13
Multiphase	48	39

* Limits may vary. Refer to local requirements to define the number of microinverters per branch in your area.

- G) Size the AC wire gauge to account for voltage rise. Select the correct wire size based on the distance from the beginning of the Enphase Q Cable to the breaker in the load center. Refer to the Voltage Rise Technical Brief at enphase.com/support for more information.

Best practice: Center-feed the branch circuit to minimize voltage rise in a fully-populated branch.



140-00115-02

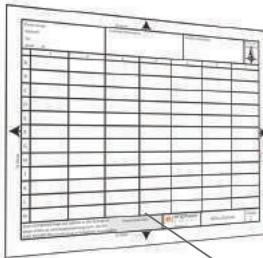
INSTALLATION

1 Position the Enphase Q Cable

- A) Plan each cable segment to allow connectors on the Enphase Q Cable to align with each PV module. Allow extra length for slack, cable turns, and any obstructions.
- B) Mark the approximate centers of each PV module on the PV racking.
- C) Lay out the cabling along the installed racking for the AC branch circuit.
- D) Cut each segment of cable to meet your planned needs.



WARNING: When transitioning between rows, secure the cable to the rail to prevent cable or connector damage. Do not count on the connector to withstand tension.



Affix serial number labels

2 Position the Junction Box

- A) Verify that AC voltage at the site is within range:

Single-Phase Service		Three-Phase Service	
L1 to N	207 to 253 VAC	L1 to L2 to L3	360 to 440 VAC
		L1, L2, L3 to N	207 to 253 VAC

- B) Install a junction box at a suitable location on the racking.
- C) Provide an AC connection from the junction box back to the electricity network connection using equipment and practices as required by local jurisdictions.

3 Mount the Microinverters

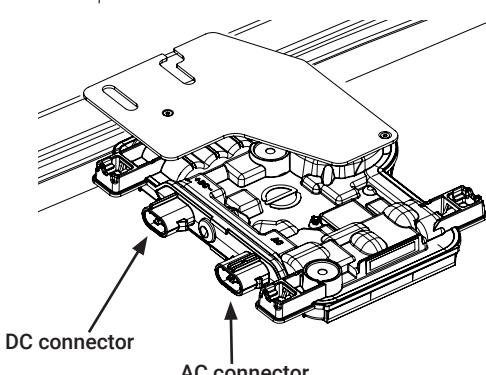
- A) If the Enphase DC bulkhead connectors are not already attached to the microinverters, attach them now. Make sure they are fully seated.
- B) **Mount the microinverter bracket side up (as shown) and under the PV module, away from rain and sun.** Allow a minimum of 1.9 cm between the roof and the microinverter. Also allow 1.3 cm between the back of the PV module and the top of the microinverter.



WARNING: Install the microinverter under the PV module to avoid direct exposure to rain, UV, and other harmful weather events. Do not mount the microinverter upside down.

- C) Torque the mounting fasteners as follows. Do not over torque.

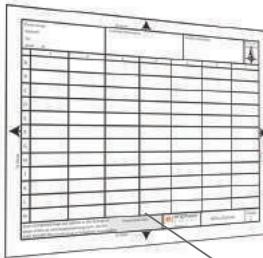
- 6 mm mounting hardware: 5 N m
- 8 mm mounting hardware: 9 N m
- When using mounting hardware, use the manufacturer's recommended torque value



4 Create an Installation Map

Create a paper installation map to record microinverter serial numbers and position in the array.

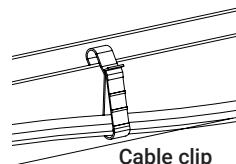
- A) Peel the removable serial number label from each microinverter and affix it to the respective location on the paper installation map.
- B) Peel the label from the Envoy-S and affix it to the installation map.
- C) Always keep a copy of the installation map for your records.



Affix serial number labels

5 Manage the Cabling

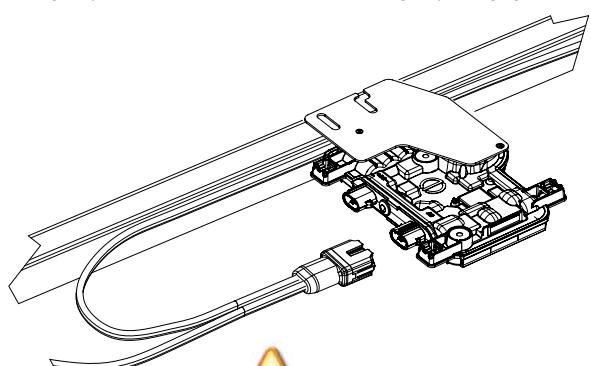
- A) Use cable clips or tie wraps to attach the cable to the racking. The cable must be supported at least every 1.8 m.
- B) Dress any excess cabling in loops so that it does not contact the roof. Do not form loops smaller than 12 cm in diameter.



Cable clip

6 Connect the Microinverters

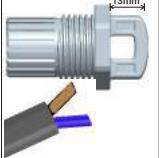
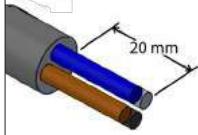
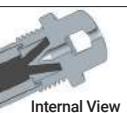
- A) Connect the microinverter. Listen for a click as the connectors engage.
- B) Cover any unused connectors on the AC cable with Enphase Sealing Caps. Listen for a click as the sealing caps engage.



WARNING: Install sealing caps on all unused AC connectors as these connectors become live when the system is energized. Sealing caps are required for protection against moisture ingress.

To remove a sealing cap or AC connector, you must use an Enphase disconnect tool.

7 Terminate the Unused End of the Q Cable

Single-phase Q Cable : Q-TERM-R-10	Three-phase Q Cable : Q-TERM-3P-10
A) Remove 13 mm of the cable sheath from the conductors. Use the terminator body loop to measure.	A) Remove 20 mm of the cable sheath from the conductors.
	
B) Slide the hex nut onto the cable. The grommet inside the terminator body must remain in place.	B) Slide the hex nut onto the cable. The grommet inside the terminator body must remain in place.
	
C) Insert the cable into the terminator body so that the two wires land on opposite sides of the internal separator.	C) Insert the cable into the terminator body so that the four wires land on separate sides of the internal separator.
	
D) Insert a screwdriver into the slot on the top of the terminator to hold it in place. Hold the terminator body stationary with the screwdriver and turn only the hex nut to prevent the conductors from twisting out of the separator. Torque the nut to 7.0 Nm.	D) Bend the wires down into the recesses of the terminator body and trim as needed. Place the cap over the terminator body. Insert a screwdriver into the slot on the terminator cap to hold it in place. Rotate the hex nut with your hand or a wrench until the latching mechanism meets the base. Do not over torque.
	
E) Attach the terminated cable end to the PV racking with a cable clip or tie wrap so that the cable and terminator do not touch the roof.	E) Attach the terminated cable end to the PV racking with a cable clip or tie wrap so that the cable and terminator do not touch the roof.

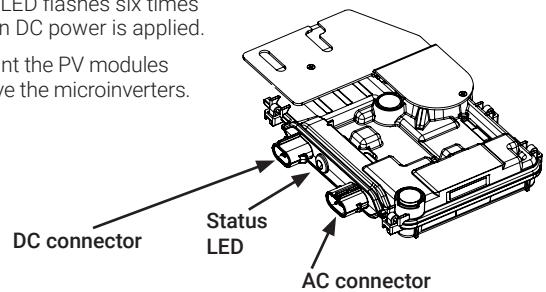
WARNING: The terminator can not be re-used. If you unscrew the nut, you must discard the terminator.

9 Connect the PV Modules



DANGER! Electric shock hazard. The DC conductors of this PV system are ungrounded and may be energized.

- A) Connect the DC leads of each PV module to the DC input connectors of the corresponding microinverter.
- B) Check the LED on the connector side of the microinverter. The LED flashes six times when DC power is applied.
- C) Mount the PV modules above the microinverters.



10 Energize the System

- A) Turn ON the AC disconnect or circuit breaker for the branch circuit.
- B) Turn ON the main utility-grid AC circuit breaker. Your system will start producing power **after a five-minute wait time**.
- C) Check the LED on the connector side of the microinverter:

LED	Indicates
Flashing green	Normal operation. AC grid function is normal and there is communication with the Envoy-S.
Flashing orange	The AC grid is normal but there is no communication with the Envoy-S.
Flashing red	The AC grid is either not present or not within specification.
Solid red	There is an active "DC Resistance Low, Power Off" condition. To reset, refer to the <i>Enphase Envoy-S Installation and Operation Manual</i> at: http://www.enphase.com/support .

8 Complete Installation of the Junction Box

- A) Connect the Enphase Q Cable into the junction box.
- B) Note that the Q Cable uses the following wiring color code:

Single-Phase	Three-Phase
Brown – L1	Brown – L1
Blue - N	Black – L2
	Grey – L3
	Blue - N

NOTE: The Q Cable internally rotates L1, L2, and L3 to provide balanced 400 VAC (three-phase), thus alternating phases between microinverters.

NOTE: Minimise the number of unused Q Cable connectors with three-phase systems. When cable connectors are left unused on a three-phase system, it creates a phase imbalance on the branch circuit. If multiple cable connectors are skipped over multiple branch circuits, the imbalance can multiply.

ACTIVATE MONITORING AND SELECT GRID PROFILE

After you have installed the microinverters, follow the procedures in the *Enphase Envoy-S Quick Install Guide* to activate system monitoring, set up grid management functions, and complete the installation.

- Connect the Envoy-S
- Detect devices and select grid profile
- Connect to Enlighten
- Register the system
- Build the virtual array

SAFETY

IMPORTANT SAFETY INSTRUCTIONS

SAVE THIS INFORMATION. This guide contains important instructions to follow during installation of the Enphase IQ 7, IQ 7+, and IQ7X Microinverters.



WARNING: Hot surface.

WARNING: Refer to safety instructions.

DANGER: Risk of electric shock.

Refer to manual

Double-Insulated

Safety Symbols

	DANGER: Indicates a hazardous situation, which if not avoided, will result in death or serious injury.
	WARNING: Indicates a situation where failure to follow instructions may be a safety hazard or cause equipment malfunction. Use extreme caution and follow instructions carefully.
	WARNING: Indicates a situation where failure to follow instructions may result in burn injury.
	NOTE: Indicates information particularly important for optimal system operation.

General Safety

	DANGER: Risk of electric shock. Do not use Enphase equipment in a manner not specified by the manufacturer. Doing so may cause death or injury to persons, or damage to equipment.
	DANGER: Risk of electric shock. Be aware that installation of this equipment includes risk of electric shock.
	DANGER: Risk of electric shock. The DC conductors of this photovoltaic system are ungrounded and may be energized.
	DANGER: Risk of electric shock. Always de-energize the AC branch circuit before servicing. Never disconnect the DC connectors under load.
	DANGER: Risk of electric shock. Risk of fire. Only use electrical system components approved for wet locations.
	DANGER: Risk of electric shock. Risk of fire. Only qualified personnel should troubleshoot, install, or replace Enphase Microinverters or the Enphase Q Cable and Accessories.
	DANGER: Risk of electric shock. Risk of fire. Ensure that all AC and DC wiring is correct and that none of the AC or DC wires are pinched or damaged. Ensure that all AC junction boxes are properly closed.
	DANGER: Risk of electric shock. Risk of fire. Do not exceed the maximum number of microinverters in an AC branch circuit as listed in this guide. You must protect each microinverter AC branch circuit with a 20A maximum breaker or fuse, as appropriate.
	DANGER: Risk of electric shock. Risk of fire. Only qualified personnel may connect the Enphase Microinverter to the utility grid.
	WARNING: Risk of equipment damage. Enphase male and female connectors must only be mated with the matching male/female connector.
	WARNING: Before installing or using the Enphase Microinverter, read all instructions and cautionary markings in the technical description, on the Enphase Microinverter System, and on the photovoltaic (PV) equipment.
	WARNING: Do not connect Enphase Microinverters to the grid or energize the AC circuit(s) until you have completed all of the installation procedures and have received prior approval from the electrical utility company.

General Safety, continued

	WARNING: When the PV array is exposed to light, DC voltage is supplied to the PCE.
	NOTE: To ensure optimal reliability and to meet warranty requirements, install the Enphase Microinverters and Enphase Q Cable according to the instructions in this guide.
	NOTE: Provide support for the Enphase Q Cable at least every 1.8 m.
	NOTE: Perform all electrical installations in accordance with all applicable local electrical codes.
	NOTE: The AC and DC connectors on the cabling are rated as a disconnect only when used with an Enphase Microinverter.
	NOTE: Protection against lightning and resulting voltage surge must be in accordance with local standards.

Enphase Q Cable Safety

	DANGER: Risk of electric shock. Do not install the Enphase Q Cable terminator while power is connected.
	DANGER: Risk of electric shock. Risk of fire. When stripping the sheath from the Enphase Q Cable, make sure the conductors are not damaged. If the exposed wires are damaged, the system may not function properly.
	DANGER: Risk of electric shock. Risk of fire. Do not leave AC connectors on the Enphase Q Cable uncovered for an extended period. You must cover any unused connector with a sealing cap.
	DANGER: Risk of electric shock. Risk of fire. Make sure protective sealing caps have been installed on all unused AC connectors. Unused AC connectors are live when the system is energized.
	WARNING: Use the terminator only once. If you open the terminator following installation, the latching mechanism is destroyed. Do not reuse the terminator. If the latching mechanism is defective, do not use the terminator. Do not circumvent or manipulate the latching mechanism.
	WARNING: When installing the Enphase Q Cable, secure any loose cable to minimize tripping hazard
	NOTE: When looping the Enphase Q Cable, do not form loops smaller than 12 cm in diameter.
	NOTE: If you need to remove a sealing cap, you must use the Enphase disconnect tool.
	NOTE: When installing the Enphase Q Cable and accessories, adhere to the following: <ul style="list-style-type: none"> Do not expose the terminator or cable connections to directed, pressurized liquid (water jets, etc.). Do not expose the terminator or cable connections to continuous immersion. Do not expose the terminator or cable connections to continuous tension (e.g., tension due to pulling or bending the cable near the connection). Use only the connectors and cables provided. Do not allow contamination or debris in the connectors. Use the terminator and cable connections only when all parts are present and intact. Do not install or use in potentially explosive environments. Do not allow the terminator to come into contact with open flame. Fit the terminator using only the prescribed tools and in the prescribed manner. Use the terminator to seal the conductor end of the Enphase Q Cable; no other method is allowed.

Microinverter Safety

	DANGER: Risk of electric shock. Risk of fire. Do not attempt to repair the Enphase Microinverter; it contains no user-serviceable parts. If it fails, contact Enphase customer service to obtain an RMA (return merchandise authorization) number and start the replacement process. Tampering with or opening the Enphase Microinverter will void the warranty.
	DANGER: Risk of fire. The DC conductors of the PV module must be labeled "PV Wire" or "PV Cable" when paired with the Enphase Microinverter.
	WARNING: You must match the DC operating voltage range of the PV module with the allowable input voltage range of the Enphase Microinverter.
	WARNING: The maximum open circuit voltage of the PV module must not exceed the specified maximum input DC voltage of the Enphase Microinverter.
	WARNING: Risk of equipment damage. Install the microinverter under the PV module to avoid direct exposure to rain, UV, and other harmful weather events. Always install the microinverter bracket side up. Do not mount the microinverter upside down. Do not expose the AC or DC connectors (on the Enphase Q Cable connection, PV module, or the microinverter) to rain or condensation before mating the connectors.
	WARNING: Risk of equipment damage. The Enphase Microinverter is not protected from damage due to moisture trapped in cabling systems. Never mate microinverters to cables that have been left disconnected and exposed to wet conditions. This voids the Enphase warranty.
	WARNING: Risk of equipment damage. The Enphase Microinverter functions only with a standard, compatible PV module with appropriate fill-factor, voltage, and current ratings. Unsupported devices include smart PV modules, fuel cells, wind or water turbines, DC generators, and non-Enphase batteries, etc. These devices do not behave like standard PV modules, so operation and compliance is not guaranteed. These devices may also damage the Enphase Microinverter by exceeding its electrical rating, making the system potentially unsafe.
	WARNING: Risk of skin burn. The chassis of the Enphase Microinverter is the heat sink. Under normal operating conditions, the temperature could be 20°C above ambient, but under extreme conditions the microinverter can reach a temperature of 90°C. To reduce risk of burns, use caution when working with microinverters.
	NOTE: The Enphase Microinverter has field-adjustable voltage and frequency trip points that may need to be set, depending upon local requirements. Only an authorized installer with the permission and following requirements of the local electrical authorities should make adjustments.

INSTALLATION MAP

To sheet / Vers la page / Al foglio / Zu Blatt / Naar pagina: _____ ↑

Panel Group / Groupe de modules / Modulgruppe / Modulegroep:

Azimuth / Azimut:

Tilt / Inclinaison / Inclinazione / Neigungswinkel / Helling:
sheet / page / foglio / Blatt / pagina _____ / _____

Client / Cliente / Kunde / Cliënt:

Installer / Installateur / Installatore:

N S E W / N S E O
N S O W / N Z O W

NSSEOW / NSZOW



	1	2	3	4	5	6	7
A							
B							
C							
D							
E							
F							
G							
H							
J							
K							

Envoy serial label /
étiquette de numéro de série /
etichetta di serie Envoy /
Serien Nummer / Label seriennummer:

 ENPHASE®

INSTALLATION MAP / PLAN D'INSTALLATION
MAPPA INSTALLAZIONE / INSTALLATIONSPLAN
INSTALLATIE KAART

To sheet / Vers la page / Al foglio / Zu Blatt / Naar pagina: _____

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This Limited Warranty is a voluntary manufacturer's warranty provided by Enphase Energy, Inc. ("Enphase") in respect of the products set forth below:

- **IQ™7-series and IQ6-series microinverters, and microinverters with product SKU C250-72-2LN-S2** which, in each case, are connected to the internet through an Envoy™ product, listed below (each a "Microinverter");
- **IQ Envoy, IQ Combiner+, IQ Combiner, IQ Commercial Envoy, Envoy-S Standard, Envoy-S Metered, or AC Combiner Box** (each, an "Envoy"); and
- **Q Aggregator, Q Commercial Aggregator, Mobile Connect, or Consumption CT;**
each a "Covered Product".

This Limited Warranty applies in addition to statutory rights available to consumers under UK consumer laws, including under the Consumer Rights Act 2015.

If you are a consumer and your Covered Product is defective or does not conform with the contract of sale, you can choose to make a claim under UK consumer laws or under this Limited Warranty (whichever is applicable).

We have set out below a summary of UK consumer rights under the Consumer Rights Act 2015. This is not an exhaustive description of the rights available to consumers under UK consumer laws. For more information about UK consumer laws, contact your local consumer organisation (e.g. your local trading standards or citizens advice bureau).

UK Consumer Laws

The Consumer Rights Act 2015 automatically introduces certain terms into contracts for the sale of goods to consumers including, for example, that the goods (i) will match the description given of them, (ii) will be of satisfactory quality and (iii) will be reasonably fit for any particular purpose made known to the seller.

If goods are defective or do not conform with the contract of sale, a consumer may be entitled to (i) a repair or a replacement free of charge, (ii) a discount or (iii) a refund by the seller.

The primary responsibility to provide these remedies will sit with the seller from whom the consumer purchased the goods. So, if you purchased a Covered Product from a third party reseller and not directly from Enphase, you would need to contact that reseller in order to make a claim.

For goods purchased in England and Wales, these rights expire six years from delivery of the goods. For goods purchased in Scotland, these rights expire five years from delivery of the goods.

Limited Warranty

In addition to your rights under UK consumer laws, subject to the terms of this Limited Warranty (including the limitations and exclusions set out below), Enphase warrants to the Covered Owner (as defined below) that the Covered Product will be free from defects in workmanship and materials for the applicable warranty period set forth below (each a "Warranty Period"), provided that the Covered Product is (i) purchased from Enphase or an entity expressly authorized by Enphase to resell the Covered Product (the "Authorised Reseller"), (ii) the Covered Product remains at the original End User location (the "Original Location"), and (iii) the Original Location is within the United Kingdom.

Covered Product(s) and Limited Warranty Period(s)

<u>Covered Product(s)</u>	<u>Limited Warranty Period(s)</u>
IQ™ 7-series, IQ6-series microinverters connected to the internet through an Envoy product	25 years commencing on the earlier of (i) the date the Covered Product is shipped from Enphase, or (ii) the date the Covered Product is activated* in Enphase's Enlighten™ system (such applicable date is referred to as the " Warranty Start Date ").
SKU C250-72-2LN-S2 microinverters connected to the Internet through an Envoy product	10 years from the Warranty Start Date.
IQ Envoy™, IQ Combiner 3, IQ Combiner+, IQ Combiner, IQ Commercial Envoy, Envoy-S Standard, Envoy-S Metered, or AC Combiner Box	5 years from the Warranty Start Date.
Q Aggregator, Q Commercial Aggregator, Mobile Connect or Consumption CT	5 years from the Warranty Start Date.

*A Covered Product is considered “activated” when the PV solar system has received “permission to operate” by authorities having jurisdiction.

If Enphase repairs or replaces a Covered Product, the Limited Warranty will continue on the repaired or replacement product until the later of (i) the end of the original Limited Warranty Period as set in the table above or (ii) 90 days from the date of receipt of the repaired or replacement product, as long as the repaired or replacement product is installed and (where the repaired or replacement product is a Microinverter) connected to the internet through an Envoy (as described in the Installation and Operation Manual found at www.enphase.com) within 45 consecutive days from the date on which you receive the repaired or replacement product.

This Limited Warranty is given only to the end user who acquired and put the Covered Product into use for the first time (the “**End User**”) or to a subsequent end user (the “**Transferee**”) (each of the End User or Transferee being a “**Covered Owner**”) as long as (i) the Covered Product remains at the Original Location, and (ii) the Transferee submits to Enphase a “**Change of Ownership Form**” and pays the applicable fee (the “**Transfer Fee**”) within 30 days from the date of transfer to the Transferee. This submission is a requirement for continued coverage under this Limited Warranty. The Transfer Fee is set out in the Change of Ownership Form and is subject to reasonable adjustment from time to time (as determined at Enphase’s discretion). The Change of Ownership Form and payment instructions are available at <http://www.enphase.com/warranty>.

A claim under the Limited Warranty must be submitted by following the procedures set out in Paragraph 3 below (RMA Process).

1. Warranty Exclusions.

- i. This Limited Warranty will not apply in the following circumstances:
 - a) if the Covered Product is not registered with Enphase and (where the Covered Product is a Microinverter) connected to the internet through an Envoy (as described in the Installation and Operation Manual found at www.enphase.com) within 45 consecutive days following the Warranty Start Date;

- b) if the Covered Product is not installed, operated, handled, or used in accordance with the Quick Install Guide (provided with the Covered Product) or Installation and Operation Manual or under conditions for which the Covered Product was not designed;
 - c) if the defect arises after the expiration of the Warranty Period;
 - d) if the Covered Product has been altered, modified, or repaired (unless such alteration, modification or repair is made by Enphase or a third party acting on its behalf);
 - e) if the Covered Product has been misused, neglected, tampered with or otherwise damaged;
 - f) if the Covered Product has been used otherwise than in accordance with applicable laws;
 - g) if the Covered Product has been subjected to fire, water, generalized corrosion, biological infestations, acts of nature, or input voltage that creates operating conditions beyond the maximum or minimum limits listed in the Covered Product specifications set out in the Installation and Operation Manual, including high input voltage from generators or lightning strikes;
 - h) if the defect has been caused by another component of the attached solar system not manufactured by Enphase;
 - i) if the original identification markings (including trademark or serial number) of the Covered Product have been defaced, altered, or removed;
 - j) if the Grid Profile (utility approved operating parameters) of a Microinverter has been altered, and such alteration causes the product to malfunction, fail, or fail to perform; and/or
 - k) if the defect occurs during shipping or transportation after the Covered Product is sold by Enphase to an Authorised Reseller.
- ii. In addition, this Limited Warranty does not cover:
- a) the cost of labour for removal or installation of a Covered Product,
 - b) normal wear and tear or deterioration, or cosmetic, technical or design defects of a Covered Product which do not materially affect energy production or degrade form, fit, or function of the Covered Product;
 - c) theft or vandalism of the Covered Product;
 - d) the removal, installation or troubleshooting of the End User's or the Transferee's electrical systems; and/or
 - e) software programs installed in the Covered Product and/or the recovery and reinstallation of such software programs and data.

2. **Remedies.** If Enphase confirms the existence of a defect that is covered by this Limited Warranty, Enphase will, at its option, either (a) repair or replace the Covered Product free of charge, or (b) issue a prorated credit or refund for the Covered Product to the End User or Transferee in an amount equal to the current market value of the Covered Product at the time the End User or Transferee notifies Enphase of the defect, as determined in Enphase's sole discretion. If Enphase elects to repair or replace the Covered Product, Enphase will, at its option, use new or reconditioned parts or products of original, comparable, or improved design.

3. **RMA Process.** To make a claim under this Limited Warranty, the End User or Transferee must comply with the Return Merchandise Authorization (“RMA”) Procedure available at <http://www.enphase.com/warranty>.

4. **Assignment.** Enphase expressly reserves the right to novate or assign its rights and obligations under this Limited Warranty to a third party with the demonstrated expertise and requisite resources needed to effectively discharge the obligations hereunder.

5. **Limitation of Liability.**

- i. Enphase will not be responsible for any loss or damage which is not Enphase's fault or is not foreseeable. Loss or damage is foreseeable if either it is obvious that it will happen or if, at the time the contract of sale was made, both we and you knew it might happen.
- ii. Enphase only provides the Covered Product for domestic and private use. If you use the Covered Product for any commercial or business purpose, Enphase will not be responsible for business losses including, for example, loss of profits, loss of business, business interruption or loss of business opportunity.
- iii. Nothing in this Limited Warranty will limit or exclude Enphase's liability for (a) death or personal injury caused by its negligence, (b) fraud or fraudulent misrepresentation, (c) any breach of your legal rights in relation to the Covered Product (including as summarised above under “UK Consumer Laws”) or (c) for any other liability which cannot be limited or excluded under applicable law.

6. **Governing law.** If you purchased the Covered Product in England, Wales or Northern Ireland, this Limited Warranty is governed by and construed under the laws of England and each party submits to the non-exclusive jurisdiction of the English courts. If you purchased the Covered Product in Scotland, this Limited Warranty is governed by and construed under the laws of Scotland and each party submits to the non-exclusive jurisdiction of the Scottish courts.

7. **Severability.** If any term of this Limited Warranty is held to be illegal or unenforceable, it will be excluded from this Limited Warranty and the legality or enforceability of the remaining terms will not be affected.

This Limited Warranty is offered by Enphase Energy, Inc.

Contact Details:

United Kingdom

<https://enphase.com/en-uk/support/>

The grant of this Limited Warranty is expressly conditioned upon the acceptance and agreement by the End User and any permitted Transferee to the terms, conditions, and requirements herein.



PEIMAR SRL • Via Creta 72, 25124 - BRESCIA - Italy • Tel.: +39 030223292 • Fax: +39 0307772102 • info@peimar.com • www.peimar.com

ORIGINAL LIMITED WARRANTY FOR PV MODULES

Peimar Srl ("PEIMAR") hereby grants the following Limited Warranty to the customer (the "Buyer") any of the specified (and no other) brand models listed below (the "Products"):

1) WARRANTED PRODUCTS

This Limited Warranty shall only apply to the following Products:

a) Polycrystalline Solar Panels

All the models manufactured by PEIMAR. also including OEM (co-branding)

b) Monocrystalline Solar Panels

All the models manufactured by PEIMAR. also including OEM (co-branding)

2) WARRANTY

a) 20 Year Limited Product Warranty

Peimar warrants that for a period of 20 years commencing on the Warranty Start Date (as defined below) the Product(s) will be free from defects in design, material, workmanship or manufacture that materially impede their functioning, and will conform to the specifications and the drawings applicable thereto.

Any deterioration in appearance of the Product (including any scratches, stains, mechanical wear, rust, or mold), or any other changes to the Product which occur after delivery (Incoterms 2010) to the Buyer, do not constitute a defect under this Limited Warranty unless it materially impairs the Product's power output as warranted pursuant to Sec. 2 b). A claim in the event of glass breakage arises only to the extent that there was no external cause of the breakage.

b) 30 Year Limited Power Output Warranty

In addition, Peimar warrants that for a period of thirty years commencing on the Warranty Start Date, the loss of power output relating to the initial guaranteed power which is defined as Peak Power Watts Pmax(Wp) plus Peak Power Watts Pmax(Wp) multiplied by the lower limit of the Power Output Tolerance Pmax(%)—as specified in the relevant Product Data Sheet and measured at Standard Test Conditions (STC), net of the measurement tolerances applied in the laboratory where the tests are run- for the Product(s) shall not exceed

- For Poly-crystalline Products (as defined in Sec. 1 a): 2% in the first year, thereafter 0.6% per year, ending with 80.6% in the 30th year after the Warranty Start Date,
- For Mono-crystalline Products (as defined in Sec. 1 b): 3% in the first year, thereafter 0.59% per year, ending with 79.90% in the 30th year after the Warranty Start Date.

3) WARRANTY START DATE

The Warranty Start Date is the date of delivery (Incoterms 2010) of the Product(s) to the Buyer.

4) EXCLUSIONS AND LIMITATIONS

The aforementioned "Limited Warranty" does not apply to any Products which have been subjected to

- a) Failure to pay the purchase price towards Peimar or its subsidiaries which have put the modules on the market provided that (i), the payment was due and (ii) the Buyer who has obtained the modules from Peimar or one of its distributors (Direct Customer) is not entitled to withhold the purchase price or parts of the purchase price. Peimar 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 modules. In case that Peimar can reject the claim under this warranty based on this provision, the Buyer can deposit the amount not paid in order to trigger the warranty claims;
- b) Failure to comply with Peimar's installation manual applicable during the Validity of this Limited Warranty pursuant to Sec 10;
- c) Service by service technicians who are not qualified under the relevant law and/or applicable regulations at the place of installation;
- d) The Product's type, nameplate or module serial number is changed, erased or made illegible (other than by any act or omission of Peimar);
- e) The Product's installation on mobile units (except photovoltaic tracking system), such as vehicles, ships or offshore-structures;
- f) Exposure to voltage in excess to the maximum system voltage or power surges;
- g) Defective components in the construction on which the module is mounted;
- h) exposure to mold discoloration or similar external effects;
- i) exposure to any of the following: extreme thermal or environmental conditions or rapid changes in such conditions, corrosion, oxidation, unauthorized modifications or connections, unauthorized opening, servicing by use of unauthorized spare parts, accident, force of nature (such as lightning strike, earthquake), influence from chemical products or other acts beyond Peimar's reasonable control (including damage by fire, flood, etc.);

5) REPAIR, REPLACEMENT OR REFUND REMEDY

- a) As Buyer's sole and exclusive remedy under this Limited Warranty Peimar will, at its sole discretion, either, with regard to the applicable:

- i. refund the purchase price of the relevant Product(s) annually reduced by a linear depreciation, taking into account an anticipated life time of 30 years; or
 - ii. repair the defective Product(s) at no charge (subject to the following paragraph); or
 - iii. replace the defective Product(s) or part thereof by a new or remanufactured equivalent at no charge (subject to the following paragraph).

In the event that Peimar opts for options ii) or iii), Peimar shall bear all insurance and transportation charges (except air freight), customs clearance and any other costs for shipping the repaired or replaced Product(s) to Buyer. The costs and expenses for the removal, installation, return of the defective Product(s) to Peimar or reinstallation shall remain with Buyer.

- a) The warranty period(s) as defined in Sec. 2 a) and b) shall not extend or renew upon the repair or replacement of a defective Product by Peimar. The warranty period for replaced or repaired Product(s) is the remainder of the warranty on the original new Product(s).
- b) All other claims under this Limited Warranty against Peimar shall be excluded. Under this Limited Warranty, Peimar is not responsible for any special, incidental or consequential damages (including loss of profits, 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.

6) RIGHTS AND REMEDIES AGAINST THIRD PARTIES

This Limited Warranty shall be construed as a separate warranty and independent from any other contractual arrangement with third parties relating to the Product(s). 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 Buyer may be entitled by agreements with such third parties or by law.

7) CLAIMS PROCEDURE, NOTICE PERIODS, EXPIRATION OF WARRANTY CLAIMS AND LIMITATIONS.

- a) Buyer shall notify Peimar under this Limited Warranty using Peimar's Customer Service Portal at the web address <http://www.peimar.com/en/contact/>; alternatively by letter or fax to:

Europe and other locations	North, Central and South America
Customer Support	Customer Support
Peimar Srl	Peimar Inc
Via Creta 72	309 Fellowship Rd,
25124 Brescia - Italy	East Gate Center, Suite 115
T +39 030223292	Mt Laurel, NJ 08054
F +39 0307772102	T +1 8566424035
info@peimar.com	info@peimar.com

specifying each alleged claim including evidence of the claims and the serial numbers of the Product(s) at issue.

- b) Any dispute on technical facts relating to claims brought under this Limited Warranty for defects of Products shall be determined by expert determination. Peimar and the Buyer will, at the Buyer's cost, appoint as independent expert and appraiser a researcher from TÜV or from another accredited organization ("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; (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 Limited Warranty must be brought within two (2) months after discovery of the breach.
- d) The return of any defective Product(s) will not be accepted unless prior written authorization has been given by Peimar .



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8) FORCE MAJEURE

Peimar shall not be responsible or liable in any way to the Buyer for any non-performance or delay in performance under this 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 Product(s) or the notification of the relevant warranty claim under this Limited Warranty.

9) WARRANTY ASSIGNMENT

This Limited Warranty is transferable when the Products remain installed in their original installation location.

10) VALIDITY

This Limited Warranty shall apply to Product(s) delivered to Buyer from 1st of January 2018 (Incoterms 2010).

This Limited Warranty shall be valid until a new revision is issued by Peimar.

11) NO OTHER EXPRESS WARRANTY

Except as otherwise provided by applicable statutory law (cf. Sec. 5 d) and 5 e) above) or unless modified in writing and signed by an officer of Peimar, the Limited Warranty set forth herein is the only express warranty (whether written or oral) by Peimar applicable to the Products and no one is authorized to restrict, expand or otherwise modify this Limited Warranty.

12) MISCELLANEOUS

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

13) APPLICABLE LAW AND JURISDICTION

The validity of this Limited Warranty, the construction of its terms and the interpretation and enforcement of the rights and duties of the Buyer and Peimar shall be governed by the Italian laws and the authorized court will be exclusively the BRESCIA (Italy) one.

MetaSole+

DE	Installationsanleitung	DK	Installationsvejledning
GB	Installation Instructions	SE	Installationsanvisning
FR	Notice d'installation	CZ	Návod pro instalaci
IT	Manuale di installazione	PL	Instrukcja instalacji
ES	Manual de instalación	LT	montavimo instrukcijos
NL	Installatiehandleiding	HU	Telepítési útmutatók

DE | Lesen Sie diese Installationsanleitung vor Montagebeginn!
Montage nur durch sachkundige, qualifizierte Personen!

GB | Read these instructions before installation!
Installation should only be carried out by skilled, qualified personnel!

FR | Prenez soin de lire le présent manuel d'installation avant le début du montage!
Montage seulement par des personnes compétentes et qualifiées!

IT | Leggere le presenti istruzioni di installazione prima di intraprendere i lavori di montaggio!
Il montaggio è consentito esclusivamente a personale esperto e qualificato!

ES | Lea estas instrucciones de instalación antes de comenzar el montaje!
El montaje solo debe realizarlo personal experto y cualificado.

NL | Lees deze installatiehandleiding alvorens met de montage te beginnen!
De montage mag uitsluitend plaatsvinden door deskundige, gekwalificeerde personen!

DK | Læs installationsvejledningen før montagen påbegyndes!
Montagen må kun udføres af fagligt kvalificerede personer!

SE | Läs den här installationsanvisningen innan monteringen påbörjas!
Installationen bör endast utföras av utbildad, kvalificerad personal!

CZ | Přečtěte si tento návod k instalaci před začátkem montáže!
Montáž smí provádět jen odborné a kvalifikované osoby!

PL | Przed rozpoczęciem montażu przeczytać niniejszą instrukcję!
Montaż tylko przez wykwalifikowanych fachowców!

LT | Prieš montuodamis perskaitykite šią įrengimo instrukciją!
Montuoti leidžiamas tik profesionalams, kvalifikuotiemis asmenims!

HU | A szerelés megkezdése előtt olvassa el ezt a telepítési útmutatót!
A szerelést csak megfelelő szakképesítéssel rendelkező jogosult személy végezheti!



DE | Verwendung

Montagesystem für die Installation von gerahmten PV-Modulen von 30 bis 50 mm Dicke auf Schrägdächern mit folgenden Eigenschaften:

- Stahl- und Aluminiumtrapezblech
- Blechstärke Stahl ab 0,4 mm
- Blechstärke Aluminium ab 0,5 mm
- Breite Hochsicke min. 20 mm
- Dachneigung 3° - 70°

Eine Montage auf Sandwichdächern erfordert die Zustimmung des Herstellers.

Module sind immer quer zu montieren.

Berücksichtigen Sie bei der Montage die gültigen Regelwerke, den Stand der Technik und die aktuellen Arbeitsschutzrichtlinien, insbesondere bei Arbeiten auf dem Dach.

Prüfung/Zertifizierung:

Bauaufsichtliche Zulassung:

- 14.1-4
- 14.1-537
- 14.1-181
- 14.4-426
- TÜV 33130

Mitgeltende Dokumente

"Allgemeine Installations-, Wartungs- und Montagehinweise"

"Sicherheitshinweise zur Installationsanleitung"

"Garantiebedingungen und Haftungsausschluss."

Diese Dokumente sind verfügbar unter www.renusol.com

Gewährleistung:

Die Gewährleistung gilt nur bei Verwendung des original MetaSole Komplettsystems.

Den aktuellsten Stand der Montageanleitung finden Sie unter: www.renusol.com



GB | Use

Mounting system for installing framed PV modules with thicknesses of between 30 and 50 mm on pitched roofs with the following characteristics:

- Steel and aluminium trapezoidal metal sheet roof
- Steel sheet thickness from 0.4 mm
- Aluminium sheet thickness from 0.5 mm
- Min. width of raised beads 20 mm
- Roof pitch 3° - 70°

The manufacturer's consent must be obtained prior to installation on sandwich roofing.

Modules are always to be mounted in landscape.

Be sure to observe the relevant regulations, latest technology standards and current health and safety guidelines during installation and, in particular, while working on the roof.

Testing/certification:

Technical approval:

- 14.1-4
- 14.1-537
- 14.1-181
- 14.4-426
- TÜV 33130

Applicable Documents

"General installation, maintenance and assembly instructions"

"Safety Instructions for Installation Instructions"

"Warranty and Disclaimer."

These documents are available at www.renusol.com

Warranty:

The warranty only applies if an original MetaSole complete system is used.

The current version of these installation instructions is available at:

www.renusol.com



FR | Utilisation

Système de montage pour l'installation de modules photovoltaïques cadrés d'une épaisseur de 30 - 50 mm sur des toitures pentues de caractéristiques suivantes:

- Toiles trapézoïdales en acier et en aluminium
- Épaisseur de tôle acier à partir de 0,4 mm
- Épaisseur de tôle aluminium à partir de 0,5 mm
- Largeur de nervure min. 20 mm
- Pente du toit 3° - 70°

Un montage sur des toitures sandwichs requiert l'autorisation préalable de son constructeur.

Tenez compte lors du montage des règles de l'art, de l'état de la technique et des directives actuelles concernant la sécurité et la santé au travail, notamment lors de travaux effectués en toiture.

Essai/certification:

Agrément technique dans la construction:

- 14.1-4
- 14.1-537
- 14.1-181
- 14.4-426
- TÜV 33130

Garantie:

La garantie fabricant n'est valable que dans le cas de l'utilisation du système MetaSole original intégral.

La version actuelle de cette notice de montage est disponible sur le site: www.renusol.com



Vor Montage muss die Standsicherheit des PV-Systems nachgewiesen werden. Die Gebäudekonstruktion muss die zusätzlichen Lasten sicher aufnehmen können.



The structural stability of the PV system must be verified before installation. The building must be able to support the additional weight safely.



La stabilité statique du système photovoltaïque doit être validée avant le montage. La construction du bâtiment doit pouvoir absorber sûrement les charges supplémentaires indues au montage.



IT | Applicazioni

Sistema di supporto per moduli fotovoltaici con spessore di 30 - 50 mm su tetti inclinati dalle seguenti caratteristiche:

- Lamiera grecata in acciaio o alluminio
- Spessore lamiera di acciaio min. 0,4 mm
- Spessore lamiera di alluminio min. 0,5 mm
- Larghezza nervatura min. 20 mm
- Inclinazione tetto 3° - 70°

Il montaggio su tetti con pannelli sandwich necessita del nulla osta del costruttore.

In fase di montaggio, osservare le regolamentazioni vigenti in materia, lo stato della tecnica e le norme di sicurezza sul lavoro, in particolare quelle inerenti a lavori svolti sui tetti di edifici.

Controllo/certificazione:

Approvazione edilizia:

- 14.1-4
- 14.1-537
- 14.1-181
- 14.4-426
- TÜV 33130

Garanzia legale:

La validità della garanzia legale sottintende l'impiego del sistema MetaSole originale nella sua completezza.

La versione aggiornata delle istruzioni di montaggio sono reperibili al sito web:
www.renusol.com



ES | Uso

Sistema de montaje para instalar módulos fotovoltaicos con marco de 30 hasta 50 mm de grosor en tejados inclinados con las siguientes características:

- Chapa trapezoidal de acero y aluminio
- Grosor de la chapa de acero a partir de 0,4 mm
- Grosor de la chapa de aluminio a partir de 0,5 mm
- Ancho del reborde elevado mín. 20 mm
- Inclinación del tejado 3° - 70°

Un montaje sobre tejados tipo sándwich requiere la aprobación del fabricante.

Tenga en cuenta durante el montaje los códigos vigentes, el estado de la técnica y las directivas de protección en el trabajo, sobre todo en los trabajos en el tejado.

Comprobación/certificación:

Autorización del órgano de inspección de obras:

- 14.1-4
- 14.1-537
- 14.1-181
- 14.4-426
- TÜV 33130

Garantía:

La garantía solo tiene validez si se usa el sistema completo MetaSole original.

Encontrará la última actualización de las instrucciones de montaje en:
www.renusol.com



NL | Gebruik

Montagesysteem voor de installatie van omraamde fotovoltaïsche modules van 30 tot 50 mm dikte op schuine daken met de volgende eigenschappen:

- Trapeziumvormige dakplaten van staal en aluminium
- Plaatdikte staal vanaf 0,4 mm
- Plaatdikte aluminium vanaf 0,5 mm
- Breedte hoge rib min. 20 mm
- Dakafschot 3° - 70°

Voor de montage op sandwichdaken is de voorafgaande goedkeuring van de producent nodig.

Neem bij de montage de geldende voorschriften, de stand van de techniek en de actuele ARBO-richtlijnen in acht, met name tijdens de werkzaamheden op het dak.

Keuring / certificering:

Goedkeuring bouwinspectie:

- 14.1-4
- 14.1-537
- 14.1-181
- 14.4-426
- TÜV 33130

Wettelijke garantie:

De wettelijke garantie geldt uitsluitend bij gebruik van het originele MetaSole totaal-systeem.

De actuele stand van de montagehandleiding is te vinden op:
www.renusol.com



Vóór de montage moet de stabiliteit van de zonnestroominstallatie worden aangetoond. Om veiligheidsredenen moet de constructie van het gebouw ruim berekend zijn op de extra belasting.



Il montaggio può aver luogo solo previa certificazione della sicurezza statica dell'impianto fotovoltaico. La struttura dell'edificio deve essere in condizione di sopportare in sicurezza i carichi supplementari su esso applicati.



Antes del montaje se debe verificar la estabilidad del sistema fotovoltaico. El edificio debe poder recibir con seguridad las cargas adicionales.



DK | Anvendelse

Montagesystemet til installation af indrammede PV-moduler fra 30 til 50 mm tykkelse på skrå tage med følgende egenskaber:

- Stål- og aluminiumtrapeztage
- Pladetykkelse stål fra 0,4 mm
- Pladetykkelse aluminium fra 0,5 mm
- Bredde vulster mindst 20 mm
- Tagets hældning 3° - 70°

En montage på sandwichtage kræver fabrikantens samtykke.

Under montagen skal der tages højde for national lovgivning, den tekniske stand samt aktuelle forskrifter for arbejdssikkerhed, især under arbejdet på taget.

Afprøvning/certificering:

Tilsynstilladelse:

- 14.1-4
- 14.1-537
- 14.1-181
- 14.4-426
- TÜV 33130

Mangelbeføjelse:

Mangelbeføjelsen gælder kun, hvis der anvendes et originalt MetaSole komplet system.

Den seneste montagevejledning fås på:
www.renusol.com



SE | Användning

Monteringssystem för installation av inramade solcellsmoduler från 30 till 50 mm tjocklek på lutande tak med följande egenskaper:

- Stål och aluminium byggplåt
- Stålplåt tjocklek från 0,4 mm
- Aluminum plåttjocklek från 0,5 mm
- bredd pålbor min. 20 mm
- Taklutning 3° - 70°

Installation på termo tak kräver tillverkares godkännande.

Moduler måste alltid monteras på tvären.

Tänk vid montering av giltiga bestämmelser, aktuella och gällande regler för hälsa och säkerhet, särskilt vid arbete på taket.

Certifiering:

Tekniska godkännande:

- 14.1-4
- 14.1-537
- 14.1-181
- 14.4-426
- TÜV 33130

Garanti:

Garantin gäller endast vid användning av MetaSole komplettsystem.

Aktuella installationsanvisningar finns på:
www.renusol.com



CZ | Použití

Montážní systém pro instalaci rámovaných PV modulů o tloušťce 30 až 50 mm na šikmých střechách s následujícími vlastnostmi:

- Ocelový a hliníkový lichoběžníkový plech
- Tloušťka plechu ocel od 0,4 mm
- Tloušťka plechu hliník od 0,5 mm
- Šířka žlábků min. 20 mm
- Sklon střechy 3° - 70°

Montáž na sendvičových střechách vyžaduje svolení výrobce.

Při montáži zohledňte platné předpisy, stav techniky a aktuální směrnice bezpečnosti a ochrany zdraví při práci, zejména při pracích na střeše.

Kontroly a atesty:

Povolení stavebního dozoru:

- 14.1-4
- 14.1-537
- 14.1-181
- 14.4-426
- TÜV 33130

Záruka:

Záruka platí jen při použití originálního kompletního systému MetaSole.

Aktuální stav montážního návodu najdete vždy na:
www.renusol.com



Kontroller, om PV-systemet står stabilt, før montagen påbegyndes. Bygningens uformning skal kunne klare ekstra belastninger uden problemer.



Kontrollera om solcellsystelet är stabilt innan montering. Tak- och byggnadskonstruktionen måste kunna klara ytterligare last på ett säkert sätt.



Před montáží je nutné prokázat stabilitu PV systému. Konstrukce budovy musí být schopná bezpečně unést přidavné zátěže.



PL | Zastosowanie

System montażu do instalacji modułów PV z ramą, o grubości od 30 do 50 mm, na dachach skośnych o następujących właściwościach:

- Blacha stalowa i aluminiowa trapezowa
- Grubość blachy stalowej od 0,4 mm
- Grubość blachy aluminiowej od 0,5 mm
- Szerokość korony min. 20 mm
- Nachylenie dachu 3° - 70°

Montaż na dachach warstwowych (sandwich) wymaga zgody producenta.

W trakcie montażu uwzględnić obowiązujące zasady, stan techniki i aktualne przepisy BHP dotyczące w szczególności prac na dachu.

Kontrola/Certyfikacja:

Aprobata techniczna:

- 14.1-4
- 14.1-537
- 14.1-181
- 14.4-426
- TÜV 33130

Gwarancja:

Gwarancja obowiązuje tylko w przypadku stosowania oryginalnego, kompletnego systemu MetaSole.

Aktualną wersję instrukcji montażu można znaleźć na stronie:
www.renusol.com



LT | Naudojimas

Ant nuožulnių stogų montuojamų įreminčiu PV modulių, nuo 30 iki 50 mm storio, montavimo sistema, pasižyminti šiomis savybėmis:

- Plieno ir aluminio trapezinė skarda
- Plieninės skardos storis nuo 0,4 mm
- Alumininės skardos storis nuo 0,5 mm
- Lakšto griovelio plotis min. 20 mm
- Stogo nuokrypis 3° - 70°

Montuojant ant daugiasluoksninių stogų reikalinas gamintojo sutikimas.

Montuodami atsižvelkite į galiojančias taisyklės, technikos lygi ir esamas darbo sau-gos direktyvas, ypač dirbdami ant stogo.

Patikrinimas / sertifikavimas:

Techninis sertifikatas:

- 14.1-4
- 14.1-537
- 14.1-181
- 14.4-426
- TÜV 33130

Garantija:

Garantija galioja tik naudojant visą originalią MetaSole sistemą.

Naujausią montavimo instrukcijos versiją rasite:

www.renusol.com



HU | Alkalmazás

Szerelőkészlet keretes, 30-50 mm vastagságú PV-modulok következő tulajdonságokkal rendelkező ferdetetőkre történő telepítéséhez:

- Acél és alumínium trapézlemez
- Acéllemez vastagsága min. 0,4 mm
- Alumíniumlemez vastagsága min. 0,5 mm
- Magasperem szélessége min. 20 mm
- Tető dőlősszöge 3° - 70°

A szendvicsszerkezetű tetőkre való felszereléshez a gyártó hozzájárulása szükséges.

A szerelés során tartsa be az érvényes szabályzatokat, az aktuális műszaki ismereteket, valamint a legfrissebb munkavédelmi irányelveket, különös tekintettel a tetőn végzett munkára vonatkozóra.

Vizsgák/tanúsítványok:

Építési felügyeleti engedély:

- 14.1-4
- 14.1-537
- 14.1-181
- 14.4-426
- TÜV 33130

Garancia:

A garancia kizárálag a komplett, eredeti MetaSole rendszer alkalmazása esetén érvényes.

A szerelési útmutató legfrissebb változatát a következő weboldalon találja:
www.renusol.com



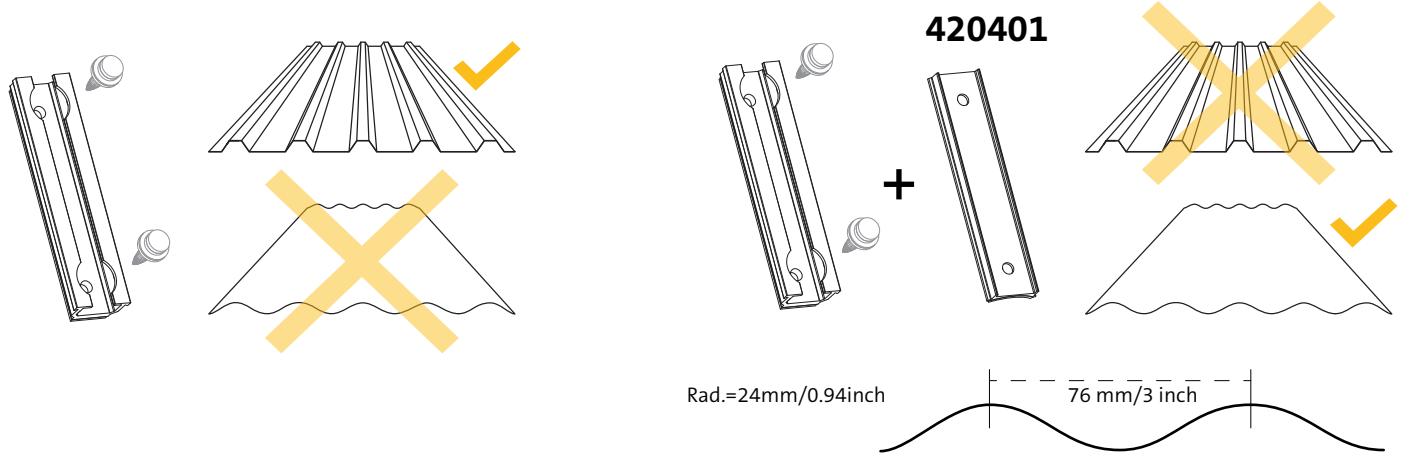
Przed montażem trzeba stwierdzić stateczność systemu fotowoltaicznego. Konstrukcja budynku musi mieć zdolność niezawodnego przyjęcia dodatkowych obciążen.



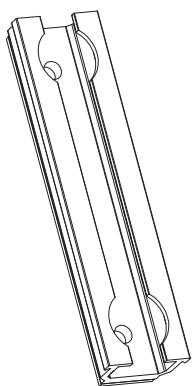
Prieš montuojant reikia įrodyti PV sistemos stabilumą. Pastato konstrukcija turi patikimai atlaikyti papildomas apkrovas.



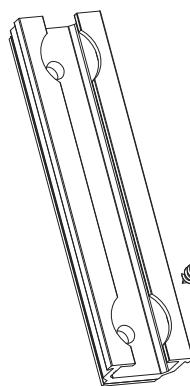
Szerelés előtt igazolni kell a PV rendszer stabilitását. Az épületszerkezetnek alkalmasnak kell lennie arra, hogy a járulékos terhelést biztonságosan felvegye.



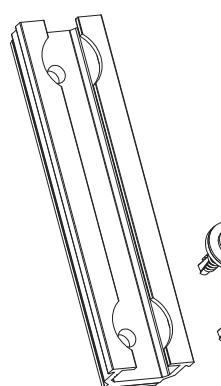
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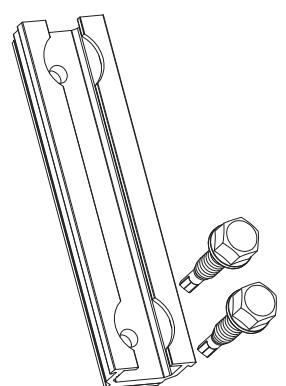
B 420403



C 420404



D 420405



A



RP-T2 6,0 x 25 E16
✿ SIT 30 (TX30)
FE (0,50-1,50 mm)
AL (0,50-2,00mm)

B



SFS-SDK2-S-377-6,0x35
□ SFS
FE (0,75-1,20 mm)

C



JT3-X-2-6,0 x 25 A16/2
◎ ● 8
FE (0,40-1,00 mm)

D



Faynot P1 6,3 x 38
◎ ● 8
FE (0,75 mm)

+

A

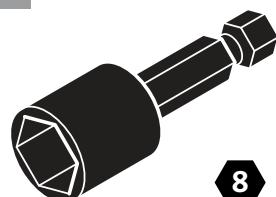


SIT 30
(TX 30)

B 999900



C

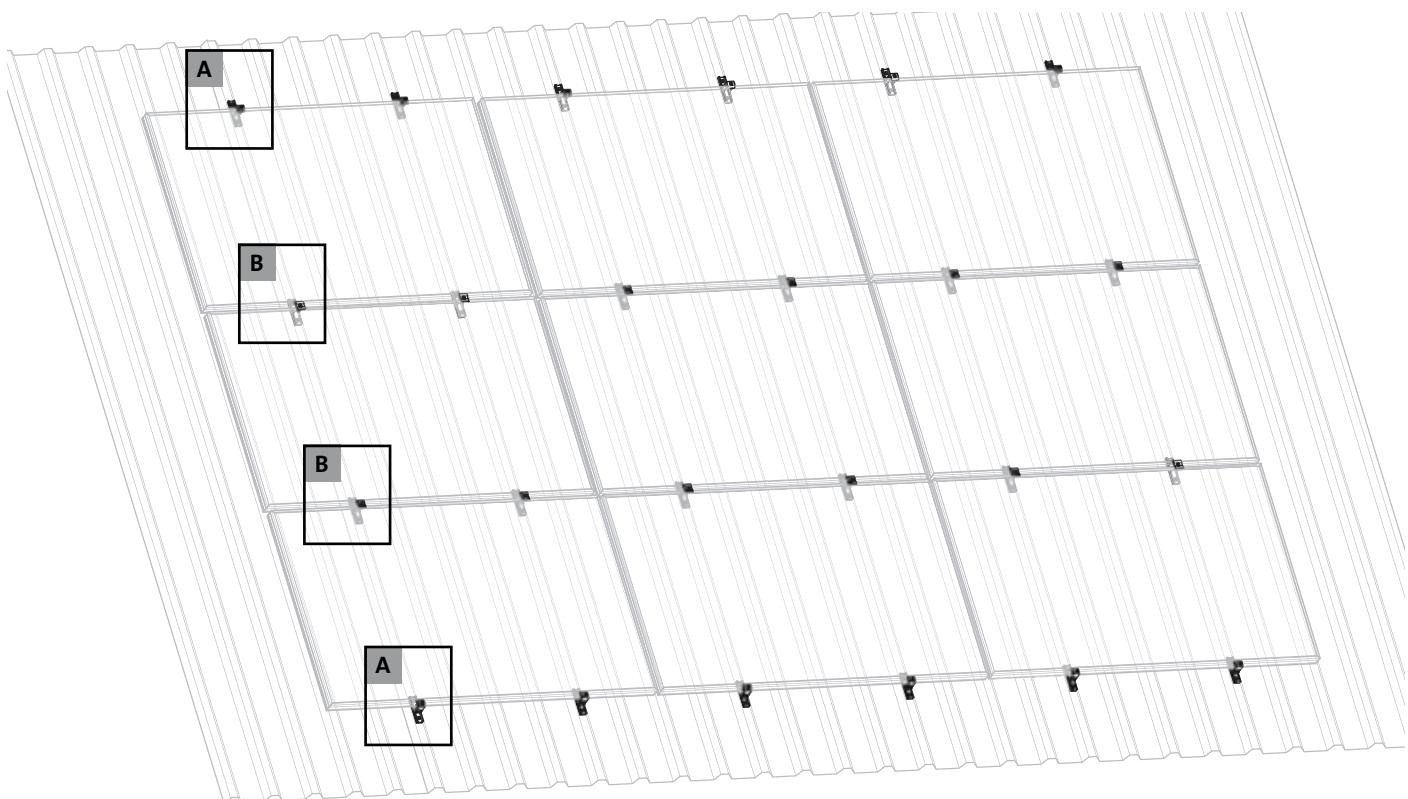


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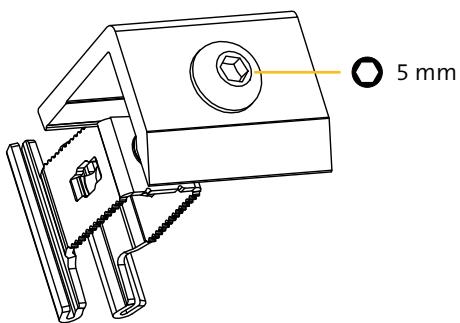
D



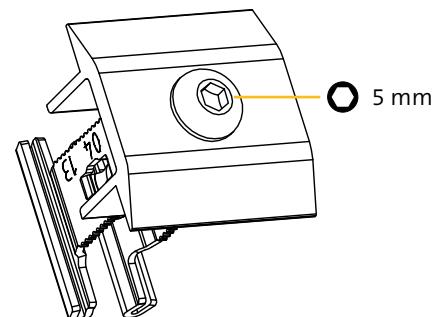
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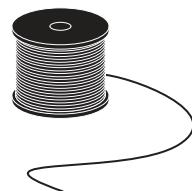
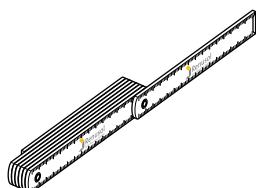
A 420081

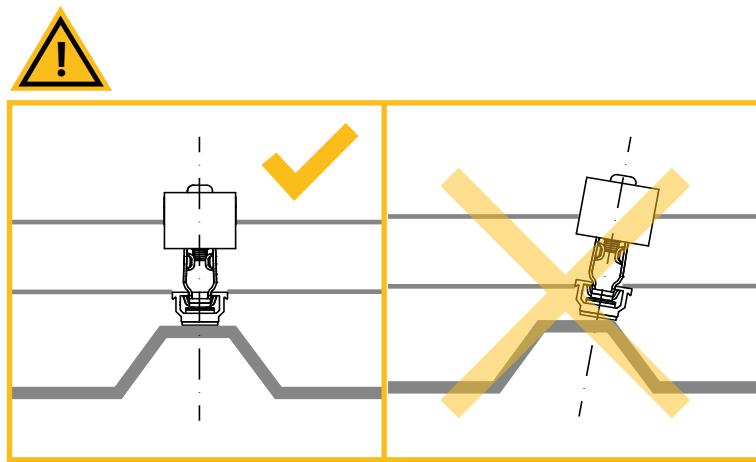
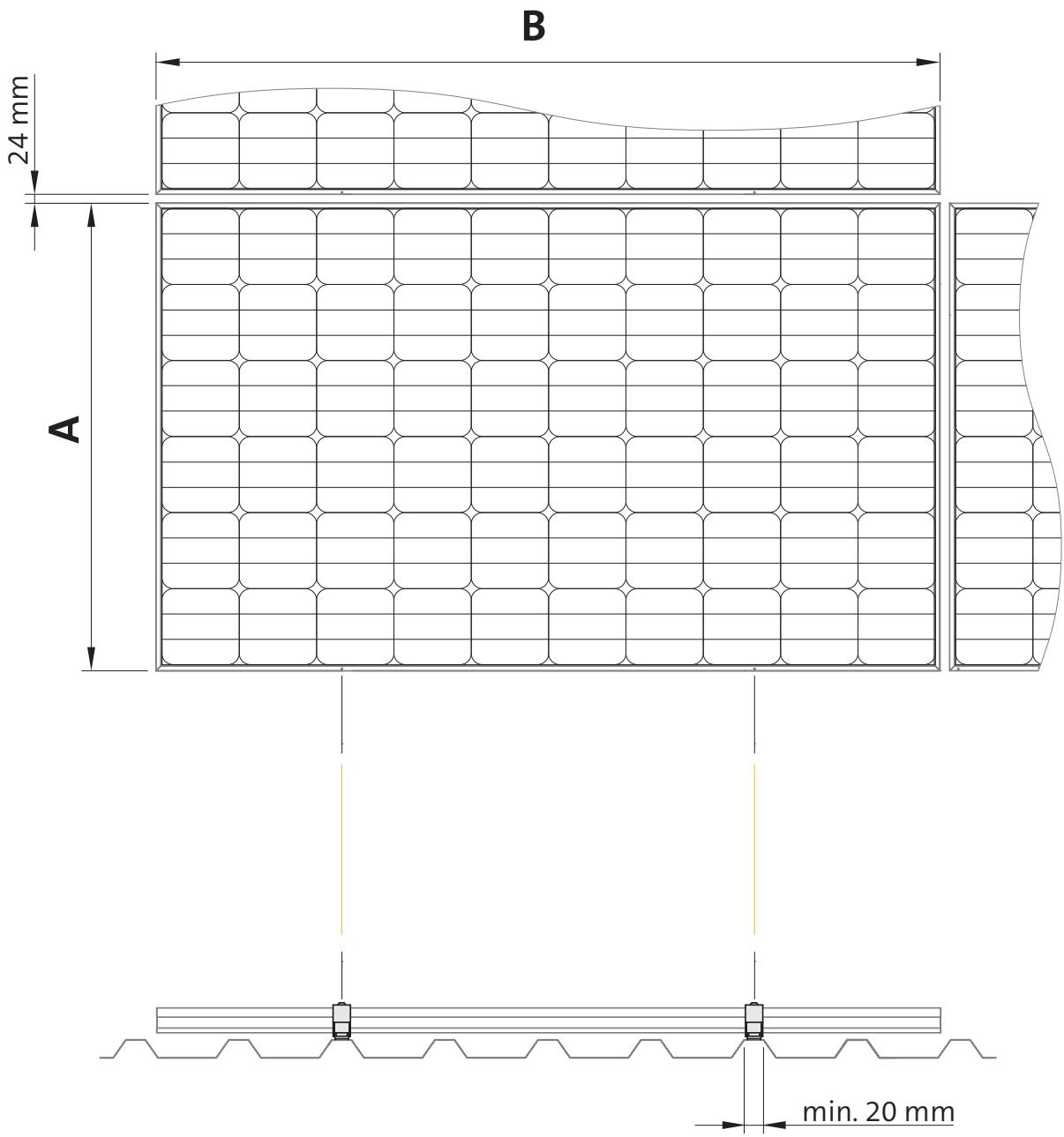


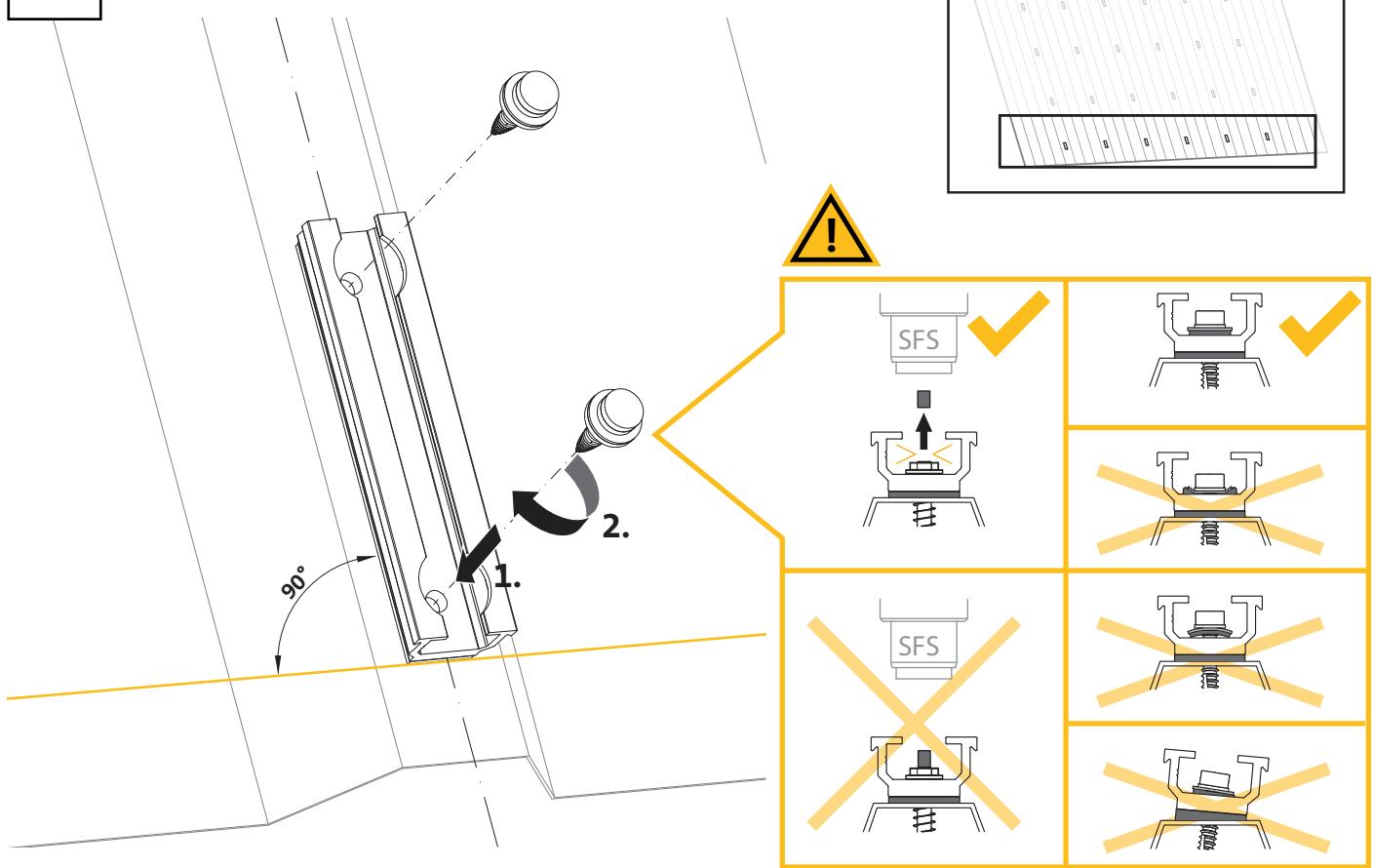
B 420082



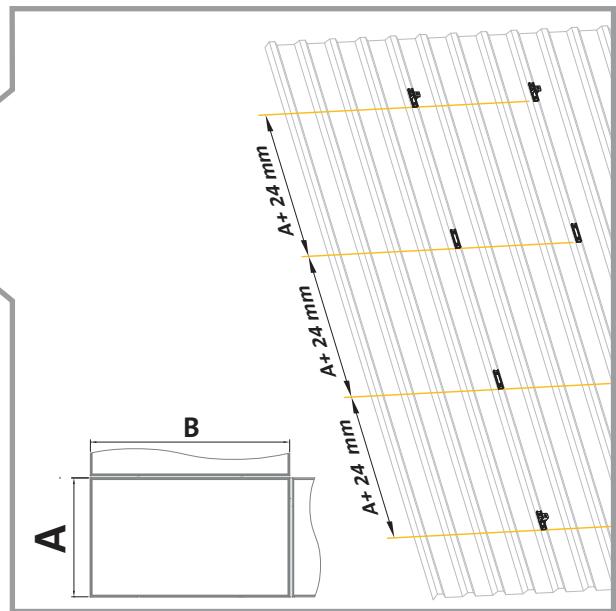
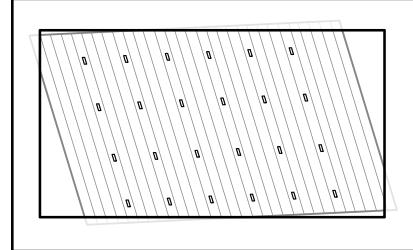
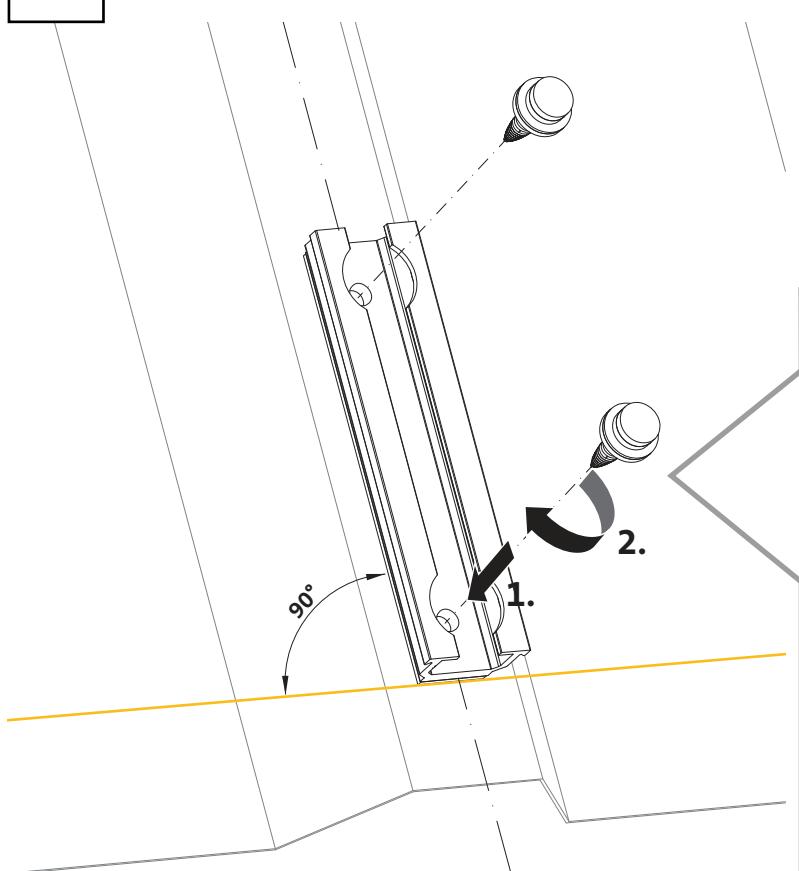
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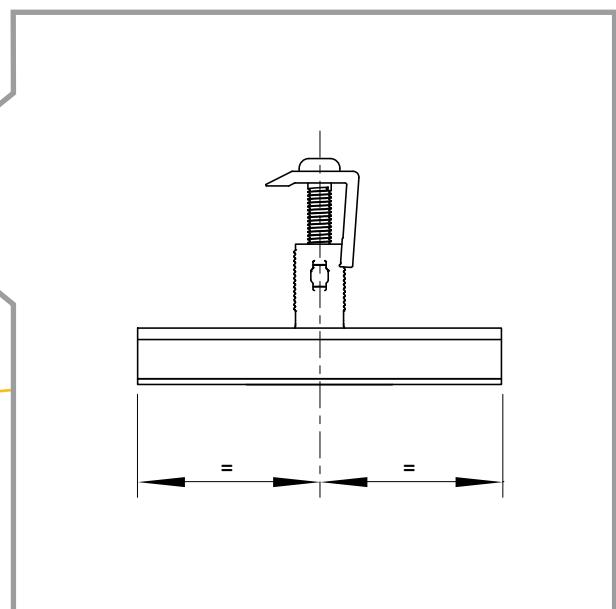
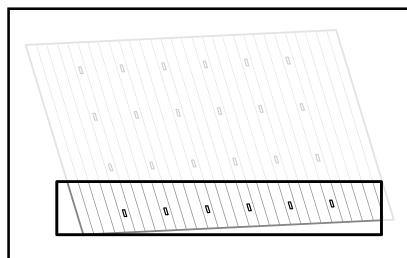
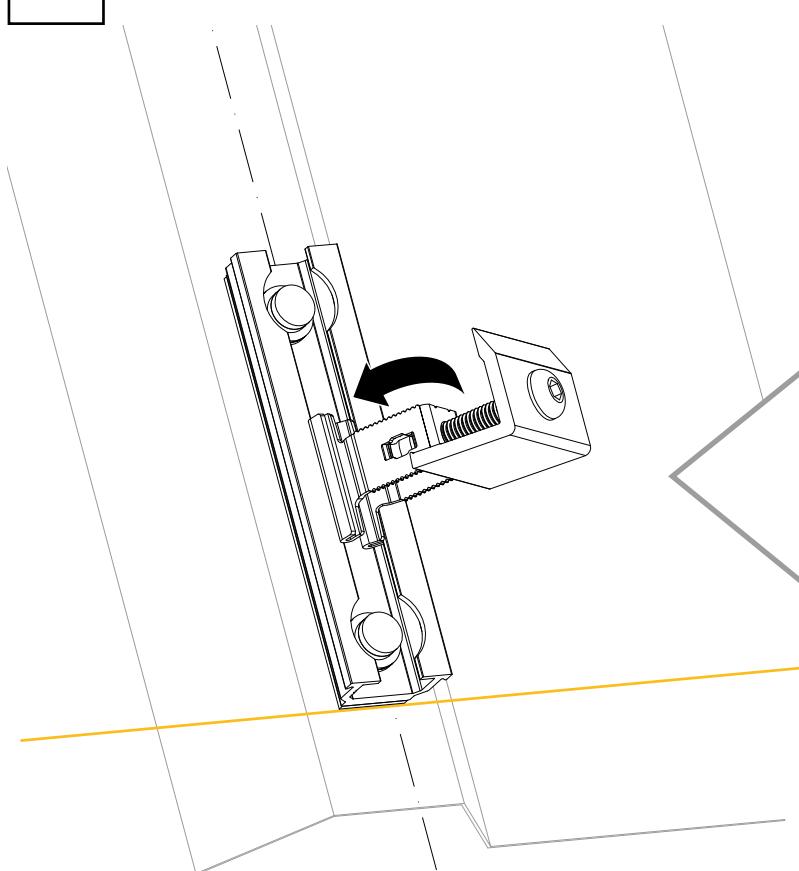


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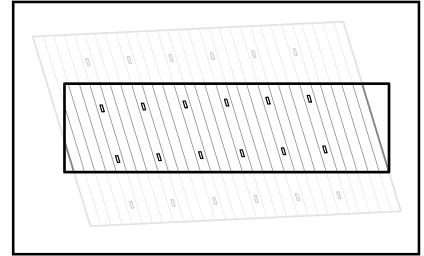
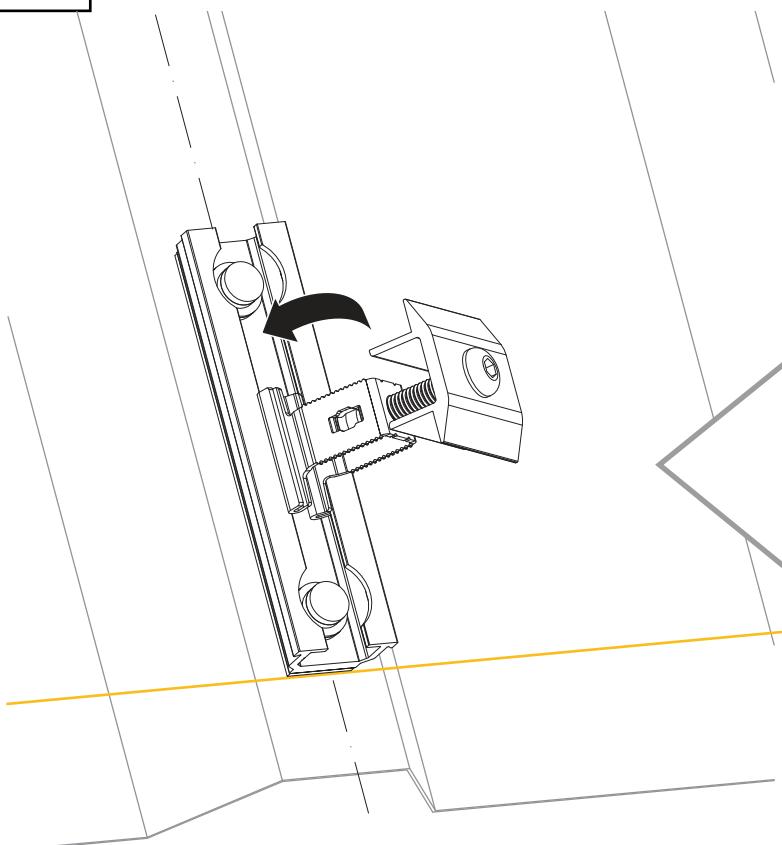
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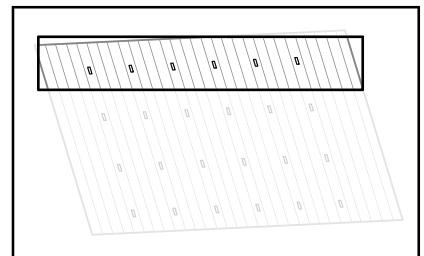
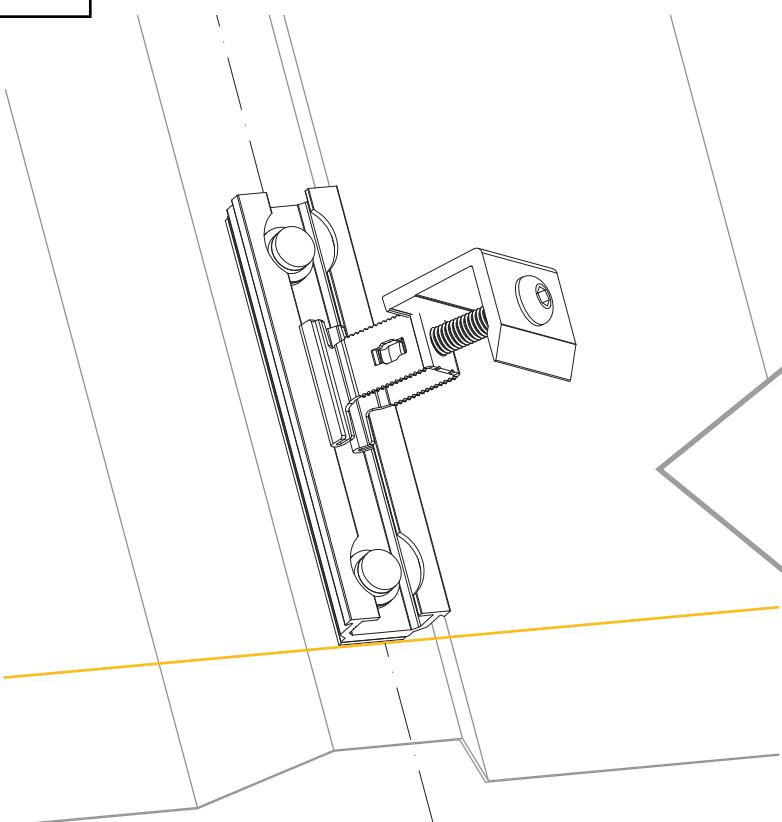
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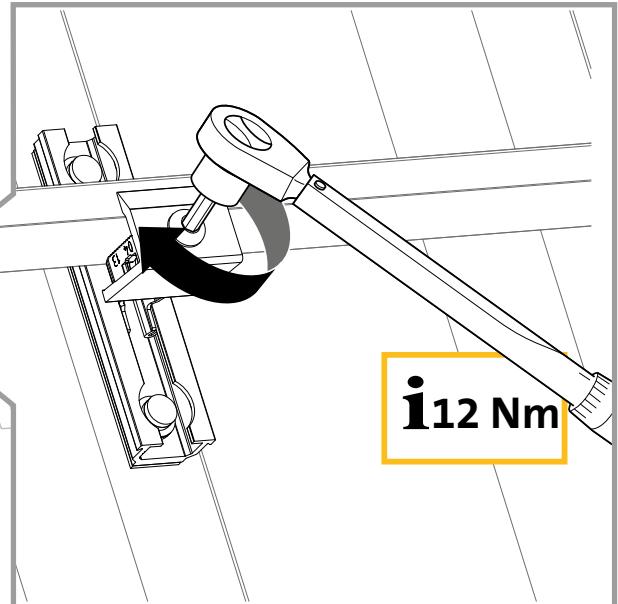
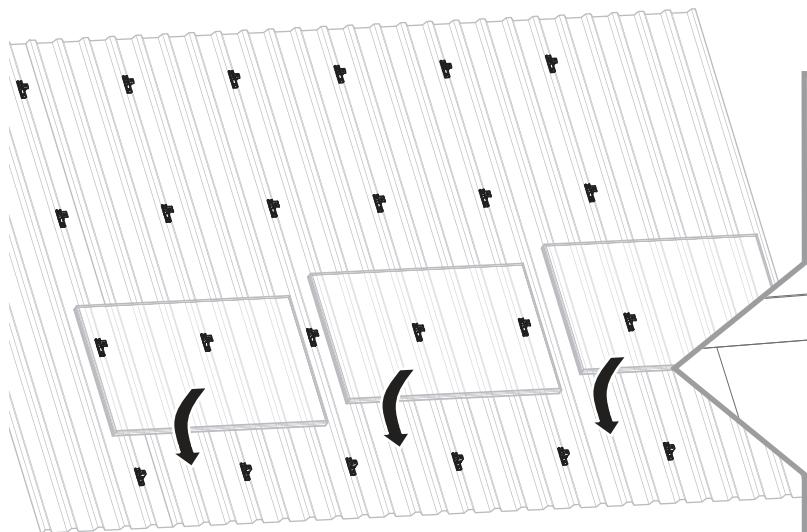
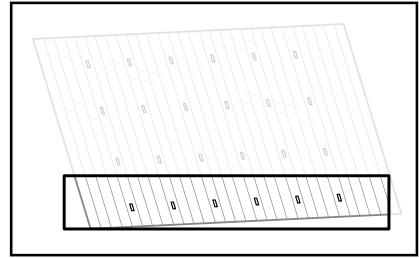
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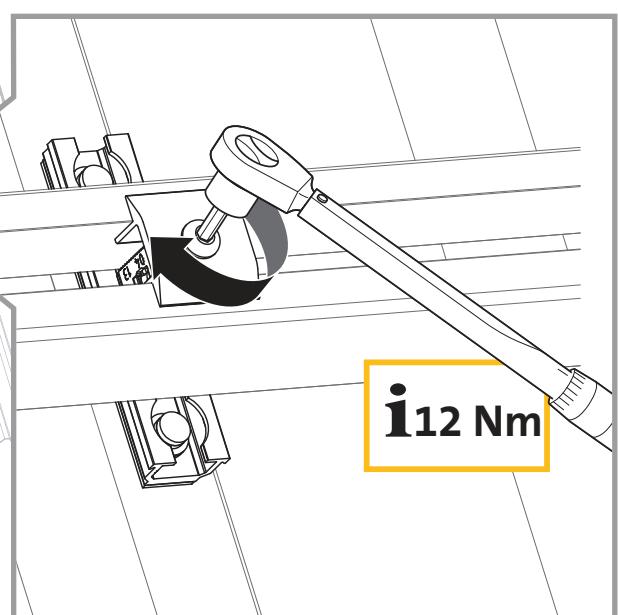
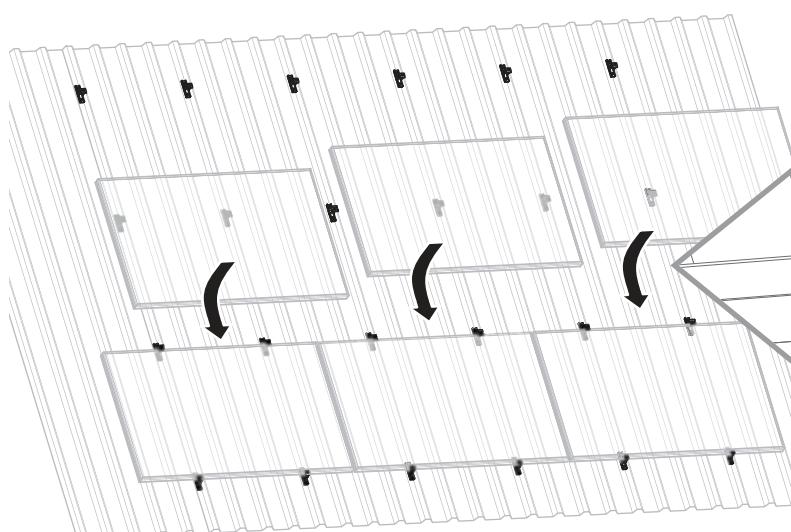
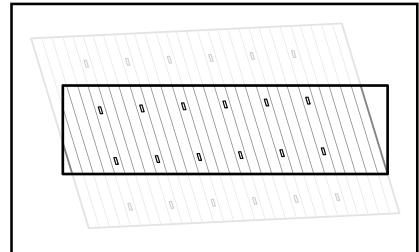
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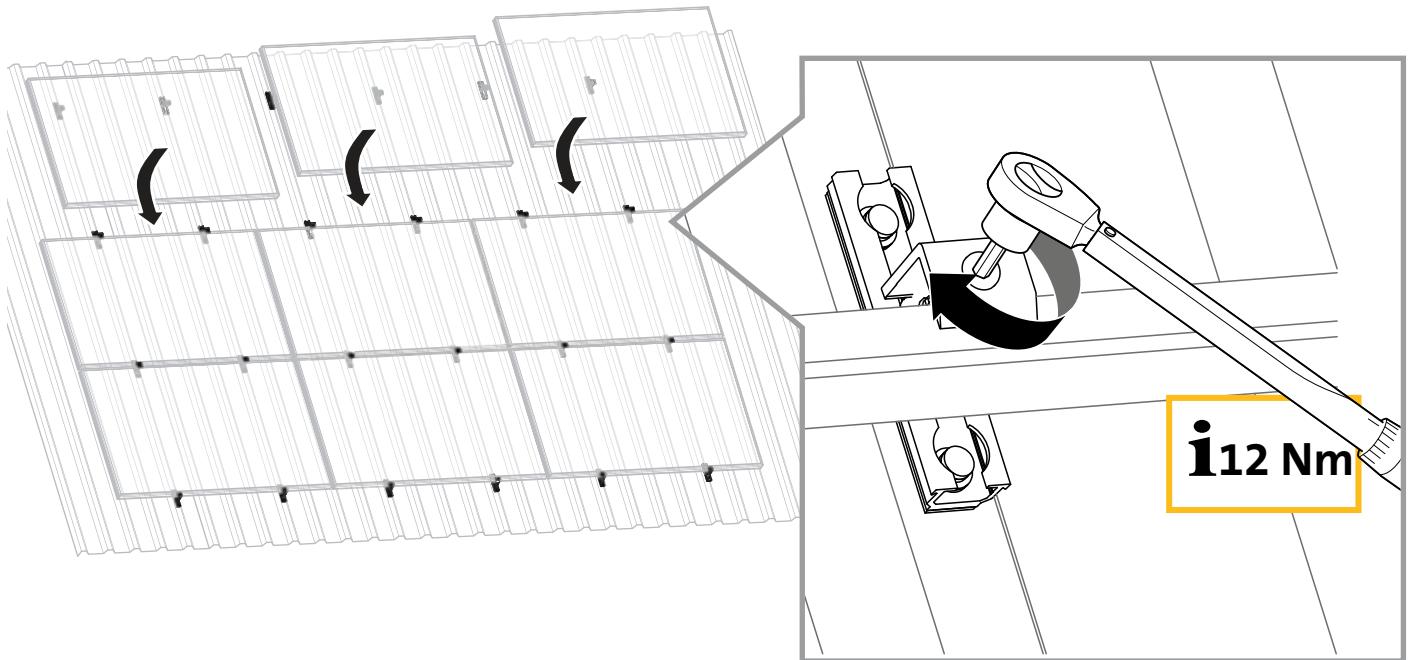
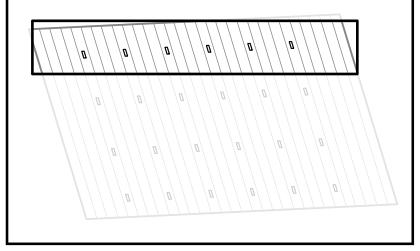
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8.



9.



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Email: marketing@renusol.com

DE | Abbildungen und Texte entsprechen dem aktuellen technischen Stand bei Drucklegung, Änderungen vorbehalten.

GB | The images and texts in these instructions relate to the latest technology at the time of printing, subject to modifications.

FR | Les illustrations et textes sont conformes à l'état de la technique au moment de mise sous presse. Sous toutes réserves de modifications.

IT | Figure e testi corrispondono allo stato più attuale della tecnica al momento dell'ordine di stampa. Con riserva di modifiche.

ES | Las imágenes y los textos se corresponden al estado actual de la técnica en el momento de la impresión, reservado el derecho a las modificaciones.

NL | Afbeeldingen en teksten voldoen aan de actuele stand van de techniek op het moment van ter perse gaan. Wijzigingen voorbehouden.

DK | Afbildninger og tekster overholder den tekniske stand ved trykningen, der tages forbehold for ændringer.

SE | Bilder och texter motsvarar den nuvarande tekniska tillstånd vid tidpunkten för tryckning, med förbehåll för ändringar.

CZ | Vyobrazení a texty odpovídají aktuálnímu technickému stavu při odevzdání do tisku. Změny vyhrazeny.

PL | Ilustracje i teksty odpowiadają stanowi techniki aktualnemu w chwili oddania instrukcji do druku. Zastrzega się prawo do zmian.

LT | Spausdinami paveikslėliai ir tekstas atitinka naujausią technikos lygį. Pasiliekame teisę į pakeitimų.

HU | Az ábrák és a szövegek a nyomtatás időpontjában rendelkezésünkre álló legfrissebb műszaki ismereteknek felelnek meg; a módosítások jogát fenntartjuk.

Warranty Conditions of Renusol Europe GmbH

(As at January 21st, 2020)

Renusol Europe GmbH, Piccoloministraße 2, 51063 Cologne, Germany ("Renusol") sells the products ("Goods") listed in **Annex A**. Renusol provides a warranty ("Warranty") to the Purchaser ("Customer") in accordance with the provisions of these warranty conditions.

1. Scope of Application of the Warranty

- 1.1 The *Warranty* applies only to *Goods* that the *Customer* has purchased directly from *Renusol*. If the *Customer* has purchased the *Goods* from a third party, any claims shall be asserted only against such third party.
- 1.2 The *Warranty* only applies if *Renusol* has declared vis-à-vis the *Customer* that this *Warranty* is to apply (esp. by letter, email or fax). A verbal undertaking does not suffice.
- 1.3 The *Customer's* claims for defects in accordance with clauses 7 and 8 of *Renusol's* General Terms and Conditions of Business ("T&Cs") in the version applicable to the *Customer* and the respective purchase shall apply in addition to the rights of the *Customer* under this *Warranty* and shall not be affected by the rights granted to the *Customer* under this *Warranty*.

2. Warranty Period

- 2.1 The *Warranty* shall commence at the time at which the risk passes to the *Customer* pursuant to clause 6 of the *T&Cs*.
- 2.2 The warranty period in relation to the *Goods* is set out in **Annex A**.
- 2.3 If *Renusol* provides goods or services to the *Customer* under this *Warranty* (repair or replacement of the *Goods* pursuant to clause 4.3), this shall not affect the length of the warranty period.

3. Making Claims under the Warranty

- 3.1 If the *Goods* are defective, the *Customer* shall immediately notify *Renusol*, in text form (esp. by letter, fax, email) and enclosing a copy of the warranty certificate, no later than within two weeks from detection of the defect; the notice of defect is deemed to have been submitted in time if it was sent within the prescribed time limit. If the *Customer* fails to notify *Renusol* of any defect within the prescribed time limit, any claims against *Renusol* under this *Warranty* are excluded.
- 3.2 The damage report must be submitted in text form (esp. by letter, fax, email) and include a description of all the circumstances of which the *Customer* is aware and which are relevant in order to determine the cause of defect; this description needs to be worded so as to be understood by a *Renusol* technician. This includes, in particular, the nature and location of the installation of the *Goods*, any modifications, repairs or other alterations or work carried out by the *Customer* or *third parties* in relation to the *Goods* as well as a description of the cause of the defect and any consequences. If the above details are not included, claims against *Renusol* under this *Warranty* are excluded. This does not apply if the *Customer* cannot be reasonably expected or is unable to provide these details as part of the damage report. In this case the *Customer* must provide the details without delay as soon as he is able to or as soon it can reasonably be expected of him.
- 3.3 At the request of *Renusol* the *Customer* shall send the *Goods*, at the *Customer's* cost and risk, to an address in Germany specified by *Renusol*, provided this can reasonably be expected of the *Customer*. *Renusol* will reimburse the *Customer* for the costs incurred in this regard if the defect is covered by the *Warranty* or if the *Customer*, through no fault of his own, has failed to realise that the defect is not covered by the *Warranty*. The costs for returning *Goods* that have been repaired or replaced under the *Warranty* are borne by *Renusol* "ex works".
- 3.4 In derogation from clause 3.4, the assertion of claims for defects within the statutory warranty period does not entail any costs for the *Customer*; any costs incurred by the *Customer* are borne by *Renusol* (section 439(2) German Civil Code ["*Bürgerliches Gesetzbuch*", "BGB"]). As a consequence, within the warranty period the *Customer* has to bear return and/or shipment costs under the *Warranty* only if, following a check of the notice of defect, it transpires that *Renusol* is not responsible for the defect asserted by the *Customer* and the

Customer is responsible for the unjustified notice of defect, and in particular if the *Customer* could have realised that *Renusol* was not responsible for the defect claimed.

- 3.5 *Renusol* shall acquire ownership in the *Goods* returned by the *Customer* provided they are not repaired and returned to the *Customer*.
- 3.6 For any items that are additionally sent to *Renusol* by the *Customer* and that do not form part of the *Goods*, *Renusol* shall be liable in accordance with clauses 7 and 8 of the *T&Cs* and the statutory provisions.
- 3.7 If the *Customer* had already firmly connected the *Goods* to a facility and in particular to a building so that, pursuant to sections 93, 94 BGB, the *Goods* have become an integral component of the facility, the *Customer* may request that the *Goods* be checked by way of an on-site assessment; clauses 3.3 and 3.4 shall apply mutatis mutandis with regard to any costs incurred in this regard.

4. Scope of the Warranty

- 4.1 A defect for purposes of this *Warranty* shall only include defects in the *Goods'* material, which limit their suitability for normal or intended use in accordance with the contract concluded with the *Customer*.
- 4.2 If the defect reported by the *Customer* is covered by this *Warranty*, *Renusol* will repair the *Goods* affected by the defect or replace them by supplying new *Goods*. *Renusol* will bear the costs thereof except for the costs for installing or removing the *Goods* at the *Customer's* premises; the *Customer* shall bear these costs himself. *Renusol* shall make the decision whether to repair or replace the *Goods* at its reasonable discretion (section 315 BGB). *Renusol* shall be free to exchange the *Goods*, where required, also for completely overhauled *Goods*.
- 4.3 *Renusol* is entitled to commission third parties to fulfil any rights under the *Warranty*. The *Customer* does not have any claim for *Renusol* to fulfil any rights under the *Warranty*.
- 4.4 Should it transpire that the defect reported by the *Customer* is not covered by this *Warranty*, *Renusol* reserves the right to charge the *Customer* for the cost of checking and, where relevant, transporting the *Goods*. This does not apply if the *Customer* has failed to recognise, through no fault of his own, that the defect is not covered by the *Warranty*. *Renusol* is entitled, in relation to any deliverables under the *Warranty* that are not owed, to charge a flat rate of 20 % of the sale price of the *Goods* reported by the *Customer* to be defective. The *Customer* shall be entitled to prove that *Renusol* has, in fact, not incurred any costs or significantly lower costs.
- 4.5 No claims other than those under clause 4.2 – in particular claims for a reduction of the purchase price, claims for withdrawal or damages claims – shall arise on the basis of this *Warranty*.

5. Exclusion of the Warranty

- 5.1 The following defects are excluded from this *Warranty*:
 - all defects that are not based on a defect in the *Goods'* material (clause 4.1),
 - all defects of *Goods* in relation to which a manufacturing or serial number attached by *Renusol* has been removed or rendered illegible,
 - all defects that have arisen from non-intended use of the *Goods* by the *Customer* or a third party, i.e. where the *Customer* or third party has failed to use the *Goods* for the purpose that was contractually intended or typical,
 - all defects that have arisen in disregard of or as a result of a breach of installation, operating, repair or other instruction manuals pertaining to the *Goods* that may have been provided by *Renusol*,
 - all defects that have arisen from the installation or maintenance of the *Goods* if the installation or maintenance was not carried out by a suitable and professional specialist firm,
 - all defects that have arisen due to external influences on the *Goods* after they have been delivered to the *Customer*, in particular due to changes, modifications, extensions, repairs, maintenance work, use of the *Goods* with non-original parts belonging to the *Customer* or third parties, improper transport or packaging of the *Goods*, vandalism, damage caused by animals, riots, civil unrest (civil war, demonstrations), war, earthquakes, floods, overvoltage, fire, explosion or lightning strike, and
 - all defects caused to *Goods* of *Renusol* that are not included in any of the product groups listed in **Annex A**.
- 5.2 In addition to clause 5.1., defects of the respective *Goods* that have arisen due to a failure to use the *Goods* in accordance with the standard terms and conditions of use as set out in **Annex B** are excluded from the *Warranty*.

6. Final Provisions

- 6.1 This *Warranty* and all claims related hereto shall be subject to substantive German law only, to the exclusion of the UN Convention on Contracts for the International Sale of Goods and any conflict of law provisions; this shall not affect article 3(3) and (4) Rome I.
- 6.2 Insofar as translations of these warranty conditions into languages other than German are produced, only the German version shall be legally binding.
- 6.3 If the *Customer* is a merchant, a legal person under public law or a special fund under public law, the exclusive place of jurisdiction for all disputes arising directly or indirectly under this contractual relationship anywhere in the world shall be Cologne, Germany. The same applies even if the *Customer* does not have any general place of jurisdiction in Germany or if his place of residence or habitual abode is not known at the time these legal proceedings are brought. *Renusol* is entitled to assert claims against the *Customer* at its general place of jurisdiction.
- 6.4 Any amendments or supplements to the *Warranty* as well as all declarations and notifications related to the *Warranty* must be made in text form (esp. by letter, fax, email). This shall also apply to the repeal of this requirement for text form.
- 6.5 If any provision of this *Warranty* is or becomes invalid or unenforceable, in whole or in part, this shall not affect the remainder of the provisions. Statutory provisions shall apply in place of the invalid provision. This shall apply accordingly in relation to any omissions in these provisions that the parties had not foreseen.

A n n e x A

These warranty conditions shall apply to the following *Goods* with the respective warranty period as set out in clause 2.2:

- FS10-S – warranty period: ten years
- FS18-S – warranty period: ten years
- FS10-EW – warranty period: ten years
- ConSole/CS+ – warranty period: ten years
- InterSole – warranty period: ten years
- VarioSole/VS+ – warranty period: ten years
- MetaSole/MS+/MS+P – warranty period: ten years
- IntraSole – warranty period: ten years
- TS+ – warranty period: ten years

A n n e x B

In accordance with clause 5.2, *Goods* in the ConSole and CS+ product group shall be subject to the following standard terms and conditions of use:

- the *Goods* shall only be used subject to a sufficient structural basis, in particular installation on a load bearing device that is sufficiently strong to carry the weight of the *Goods* as well as any additional weather-related loads such as water, wind, leaves or snow,
- surface friction coefficient no less than 0.6,
- wind speeds of no more than 130 km/h, and
- ambient temperatures of no less than -30 °C and no more than 50 °C.

In accordance with clause 5.2, *Goods* in the InterSole, VarioSole, MetaSole and IntraSole product groups shall be subject to the following standard terms and conditions of use:

- the *Goods* shall only be used subject to a sufficient structural basis, in particular installation on a load bearing device that is sufficiently strong to carry the weight of the *Goods* as well as any additional weather-related loads such as water, wind, leaves or snow,
- wind speeds of no more than 115 km/h, and
- ambient temperatures of no less than -30 °C and no more than 50 °C.

In accordance with clause 5.2, *Goods* in the FS10-S and FS10-EW product groups shall be subject to the following standard terms and conditions of use:

- the *Goods* shall only be used subject to a sufficient structural basis, in particular installation on a load bearing device that is sufficiently strong to carry the weight of the *Goods* as well as any additional weather-related loads such as water, wind, leaves or snow,
- surface friction coefficient no less than 0.5,
- dynamic wind pressure of no more than $q_p=1.5 \text{ kN/m}^2$ (for snow load $s_k \leq 1.5 \text{ kN/m}^2$) or $q_p=1.0 \text{ kN/m}^2$ (for snow load $s_k \leq 2.5 \text{ kN/m}^2$), and
- ambient temperatures of no less than -30 °C and no more than 50 °C.

In accordance with clause 5.2, *Goods* in the FS18-S product groups shall be subject to the following standard terms and conditions of use:

- the *Goods* shall only be used subject to a sufficient structural basis, in particular installation on a load bearing device that is sufficiently strong to carry the weight of the *Goods* as well as any additional weather-related loads such as water, wind, leaves or snow,
- surface friction coefficient no less than 0.5,
- dynamic wind pressure of no more than $q_p=1.0 \text{ kN/m}^2$ (for snow load $s_k \leq 2.37 \text{ kN/m}^2$) and
- ambient temperatures of no less than -30 °C and no more than 50 °C.