

# Plug-In Solar Installation Instructions

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Plug-In Solar – Power Your Future  
[www.pluginsolar.co.uk](http://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

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

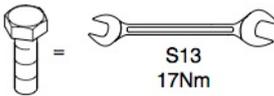
8mm Socket Tool



6mm Hex (Allen) Key



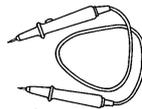
9,10,13,17,19mm Spanners



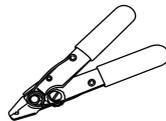
Drill with Torx30 (AW30 Bit)



Voltage Tester



Wire Strippers



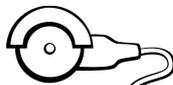
Flathead Screwdriver



Phillips Screwdriver



Angle Grinder (with Stone Disk)

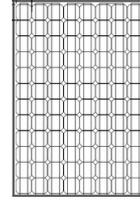


## COMPONENT GUIDE

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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.

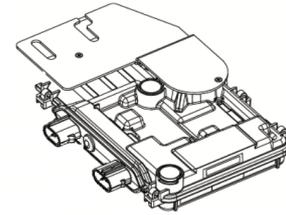
Solar Panel(s)



Adjustable Metal Frames (two per panel)  
Including all fixings (see Appendix 7 for more information)



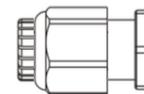
Enphase Micro-Inverter(s)



Enphase Q Cable(s)



Enphase Branch Terminator(s)



Plug-In Solar Connection Unit(s)



## SAFETY INSTRUCTIONS

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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

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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

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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  $-40\text{ }^{\circ}\text{C}$  to  $+85\text{ }^{\circ}\text{C}$  ( $-40\text{ }^{\circ}\text{F}$  to  $+185\text{ }^{\circ}\text{F}$ ).

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!**

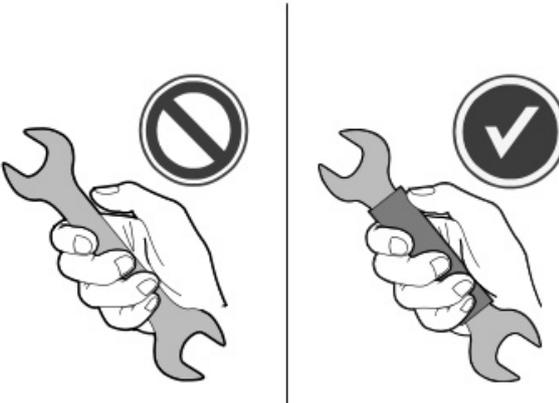
- Do not stack modules.

**NOTE! Module damage may occur!**

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

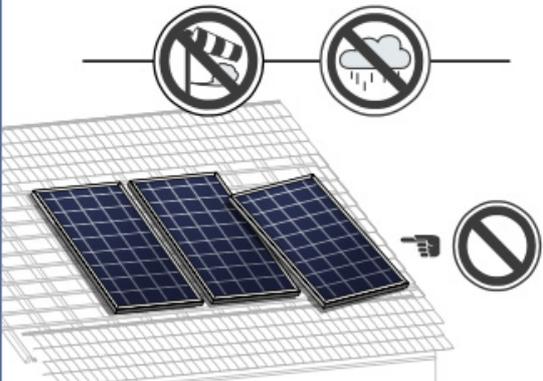
**!** **DANGER! Risk of fatal injury due to electric shock!**

➔ Only use dry, insulated tools.



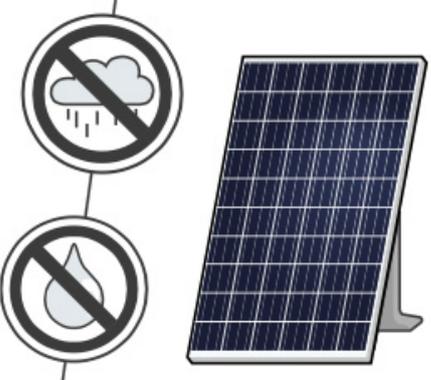
**!** **WARNING! Risk of injury due to falling modules!**

➔ Secure modules during installation.  
➔ Do not install modules in windy or wet weather.

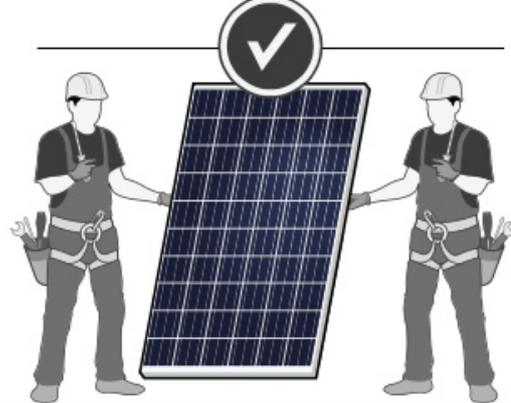


**!** **DANGER! Risk of fatal injury due to electric shock!**

➔ Ensure that modules and tools are not subject to moisture or rain at any time during installation.

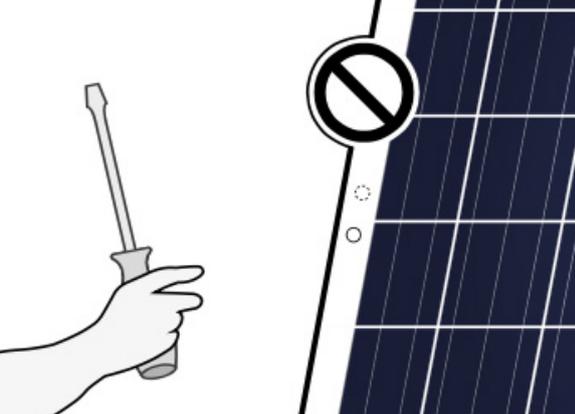


**!** ➔ Do not carry out the installation alone.



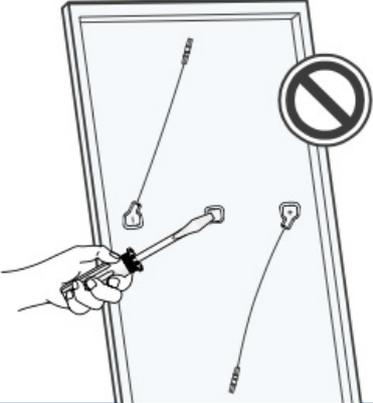
**!**

- Only install undamaged modules and components.
- ➔ Do not modify the module (e.g. do not drill any additional holes).



**!** **DANGER! Risk of fatal injury due to electric shock!**

- ➔ Never open the junction box.
- ➔ Do not remove bypass diodes.



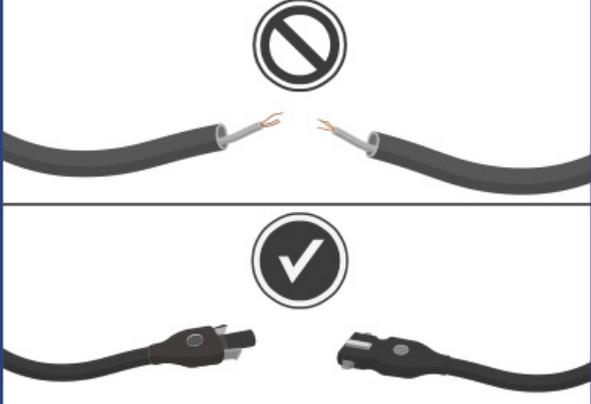
**!** **DANGER! Risk of fatal injury due to electric shock!**

- ➔ Never touch live contacts with bare hands.
- ➔ Cover connectors by suitable protective caps until installation.



**!** **DANGER! Risk of fatal injury due to electric shock!**

- ➔ Insulate any exposed cable ends.
- ➔ Only connect cables with plugs.



## ADJUSTABLE MOUNT SYSTEM INSTALLATION

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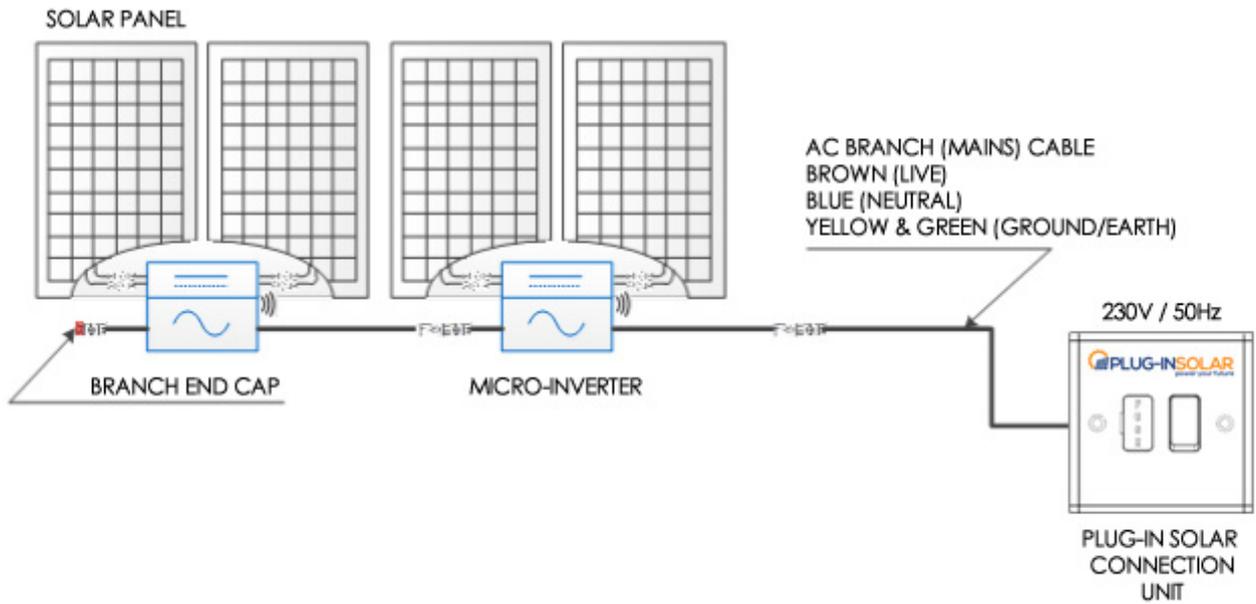
For installation instructions for the Adjustable Mount Kit, please refer to the Manual provided in Appendix 7.

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

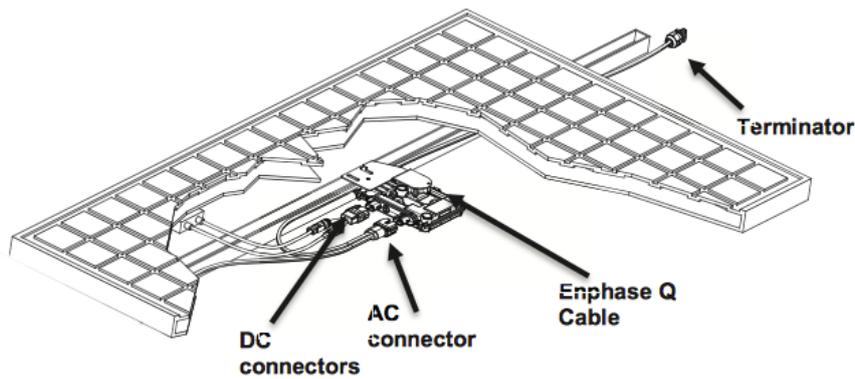
Once you have completed the installation on your roof, please return to the Micro-Inverter installation section of this manual for information on how to wire your solar panels to the Micro-Inverters.

# ENPHASE MICRO-INVERTER INSTALLATION

## 1. System Wiring Diagram



2. 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.

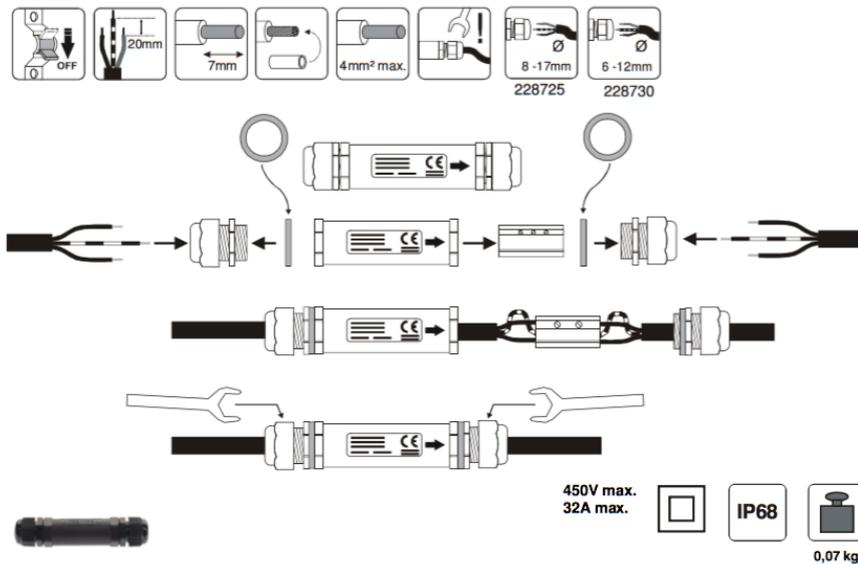


3. For installation instructions for the Enphase Micro-Inverter, please refer to the Enphase Manual provided in Appendix 4.
4. Each Micro-Inverter has serial number labels affixed. Once the micro-inverters are installed, please peel one label off each micro-inverter and stick them to the warranty card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

External Wire size(AWG)	Number of Micro-Inverters in branch							
	2	3	4	5	6	7	8	9
	<i>Maximum External cable length ( ft )</i>							
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 EXISTING 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.

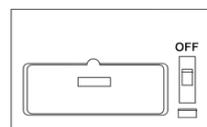
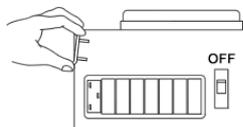
You must NOT install the Plug-In Solar Connection Unit in the following locations as set out by Part P:

- (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

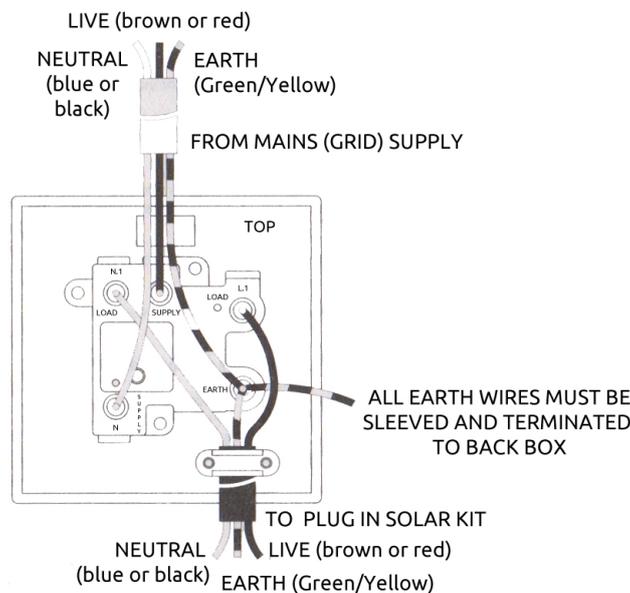
1.1. Switch off the power and remove the fuse for the relevant circuit before carrying out any work, or inspecting, either it, or the appliances connected to it. Never inspect, or carry out work on, any part of the system with the power on. Make sure that someone else cannot inadvertently restore power.



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

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

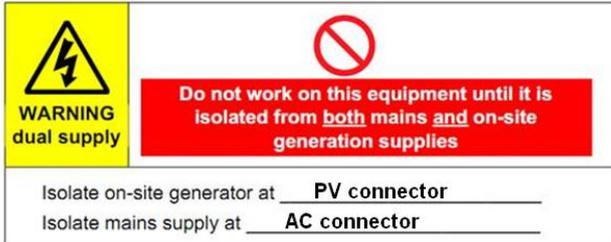
The Plug-In Solar Connection Unit, is a double pole Switched Fused Connection Unit, that adheres to British Standard BS1363-4, and offers on load isolation from the grid.

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).

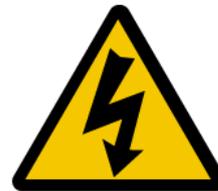


## PLACING WARNING LABELS

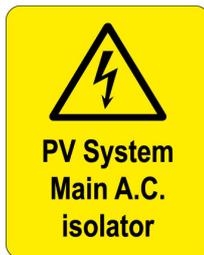
When installing a Plug-In Solar kit you must place labelling at the **Plug-In Solar Connection Unit, Existing Consumer Unit** and at all points of isolation between the **Plug-In Solar Connection Unit** and the **Solar Panels** within your premises. This is to indicate the presence of a Small Scale Embedded 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.



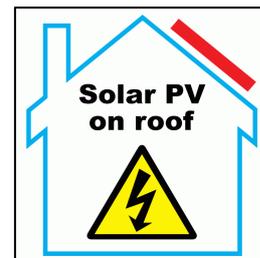
Dual supply labelling should be placed at the Plug-In Solar Connection Unit between the PV system and Existing Consumer Unit to indicate the presence of on-site generation and indicating the position of the main A.C switch disconnector.



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 AC 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

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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](http://www.planningportal.gov.uk/uploads/br/BR_PDF_AD_P_2013.pdf)

## COMMISSIONING YOUR PLUG-IN SOLAR INSTALLATION

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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 Found on your electricity bill
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			Power Factor
				3-Phase Units	Single Phase Units		
				PH1	PH2	PH3	
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	.....

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

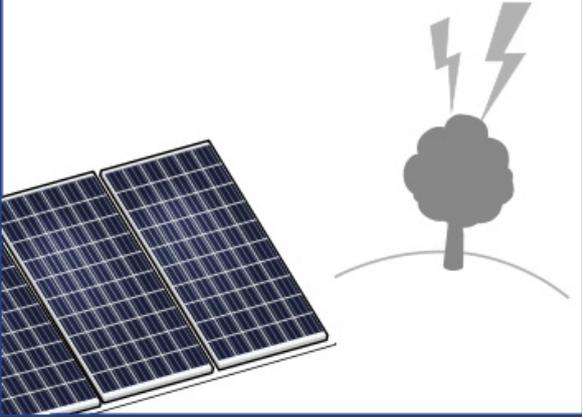
 → Ensure that all necessary safety and functional tests have been carried out according to applicable standards.



 **NOTE! Module damage may occur!**  
→ Ensure that the plug connections are secured away from any water-channelling surface.



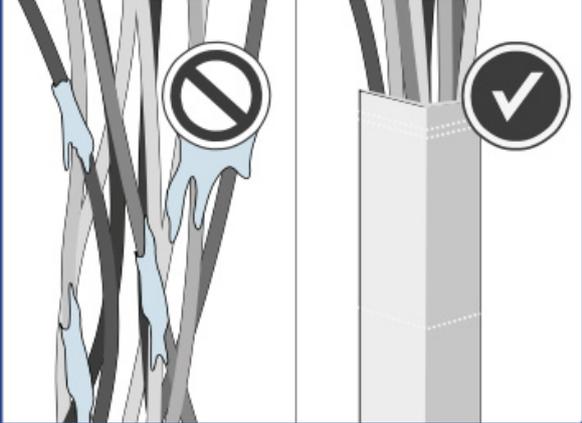
 → Integrate the system into the existing lightening protection system in accordance with the applicable local regulations.



 **WARNING! Fire Risk!**  
→ Do not use light concentrators (e.g. mirrors or lenses).



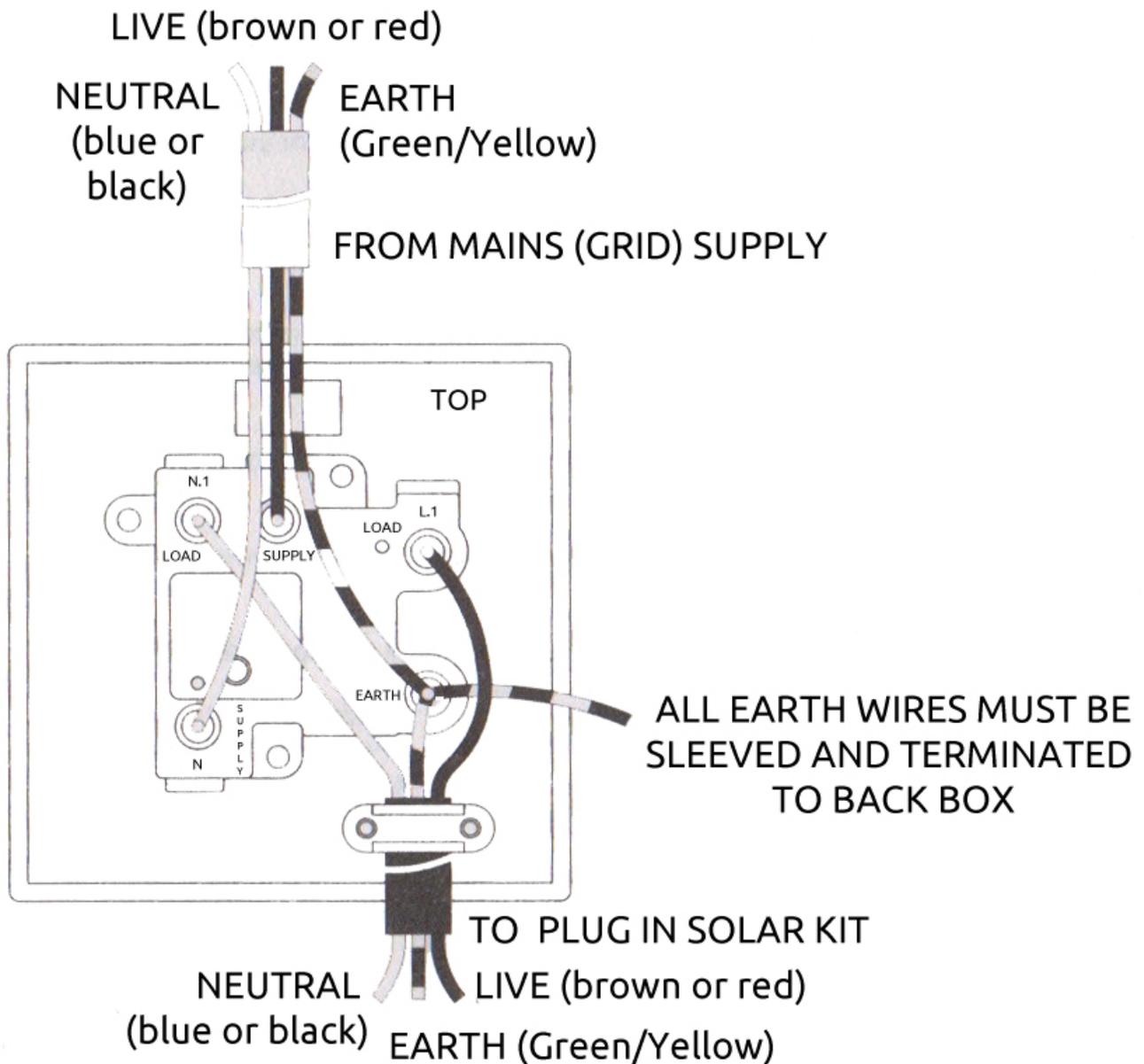
 → Ensure that the cabling is not exposed and/or hanging and is protected from dirt, moisture and mechanical friction.



## 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

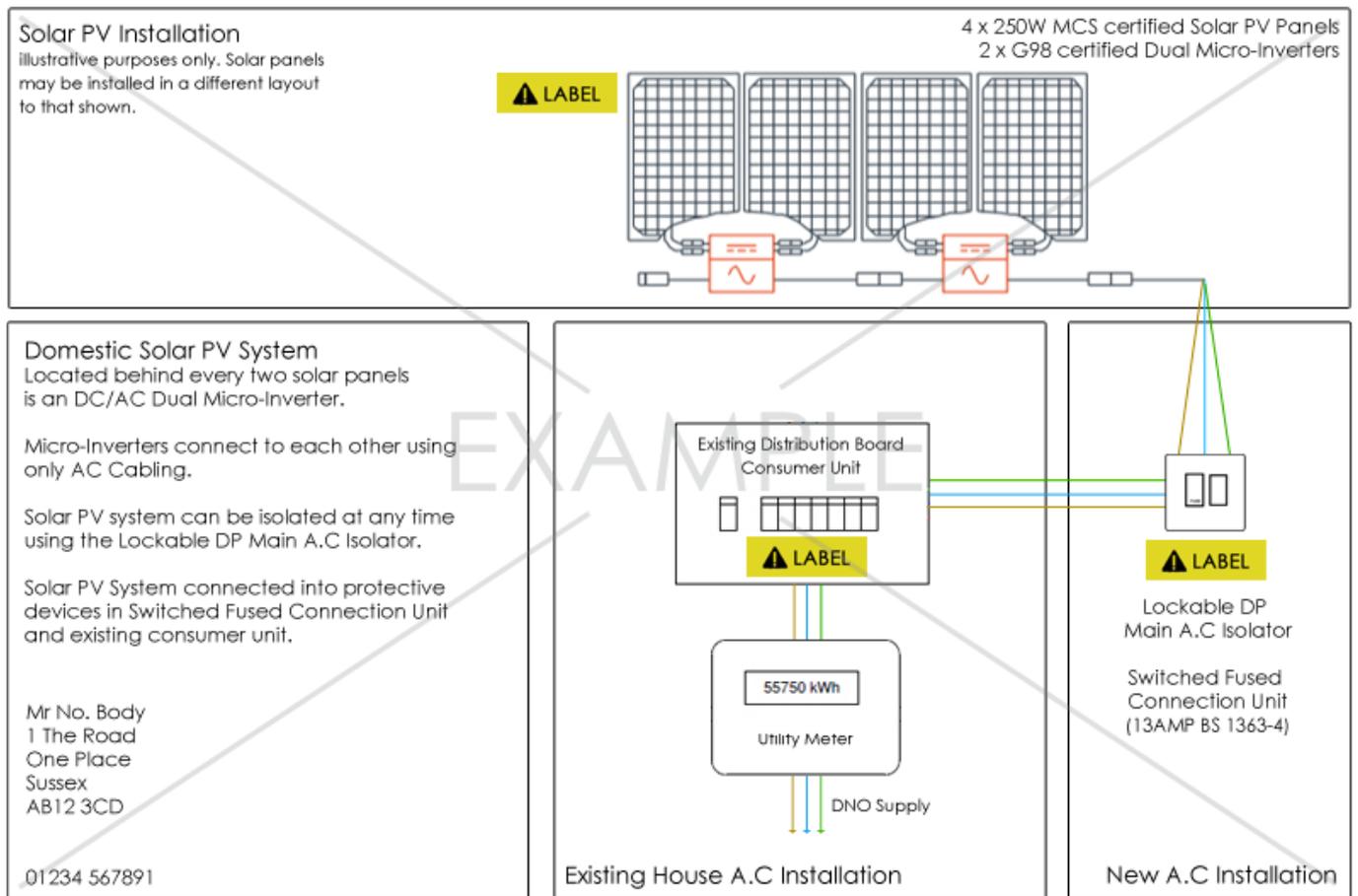


Please note: The Enphase Q Cable does not contain an earth cable, as the IQ Micro-Inverters are equipped with a class II double-insulated enclosure.

## 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



<b>Form B: Installation Document for connection under G98</b>	
Please complete and provide this document for each premises, once <b>Micro-generator</b> installation is complete.	
To	ABC electricity distribution <span style="float: right;"><b>DNO</b></span>
	99 West St, Imaginary Town, ZZ99 9AA <span style="float: right;">abcd@wxyz.com</span>
Customer Details:	
Customer (name)	Mr No. Body
Address	1 The Road One Place Sussex
Post Code	AB12 3CD
Contact person (if different from <b>Customer</b> )	
Telephone number	01234 567891
E-mail address	nobody@pmail.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@pmail.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 <b>Customer's Installation</b>		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)		Input kW Size of your Plug-In Solar Kit	
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 <b>Micro-generators</b> and the installation which together form a <b>Micro-generating Plant</b> within the scope of EREC G98 at the above address, conform to the requirements of EREC G98. This declaration of compliance is confined to <b>Micro-generating Plant</b> 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	PH3					
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](http://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](http://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](http://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
<b>Single-phase</b>			
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
<b>Multiphase</b>			
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.

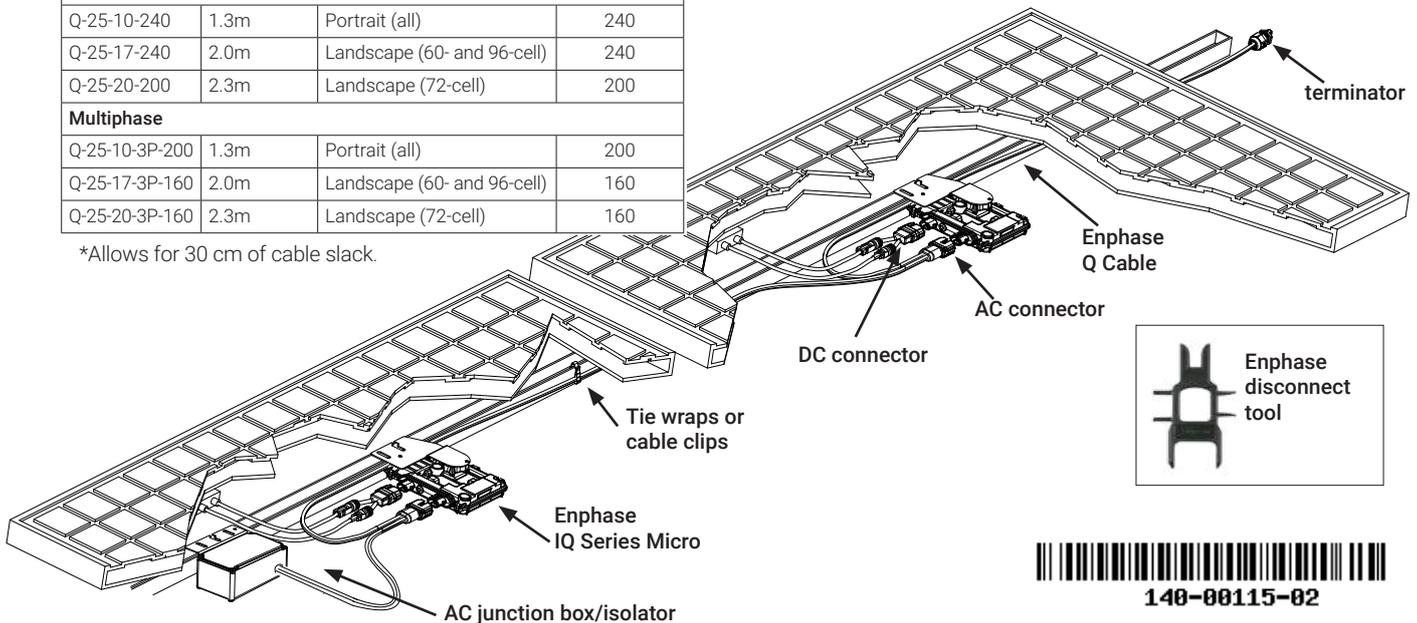
F) Plan your AC branch circuits to meet the following limits for maximum number of microinverters per branch when protected with a 20-amp over-current protection device (OCPD). For multiphase installations, use a 3-pole 20A OCPD.

Maximum* IQ Micros per AC branch circuit			
	IQ 7 Micros	IQ 7+ Micros	IQ 7X Micros
Single-phase	16	13	12
Multiphase	48	39	36

\* 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](http://enphase.com/support) for more information.

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



# 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.

## 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

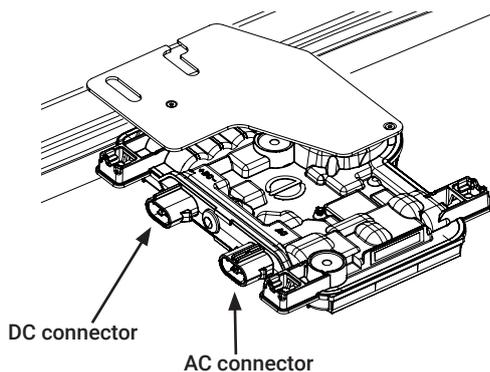
- A) If the Enphase DC bulkhead connectors are not already attached to the microinverters, attach them now. Make sure they are fully seated.
- B) **Mount the microinverter bracket side up (as shown) and under the PV module, away from rain and sun.** Allow a minimum of 1.9 cm between the roof and the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

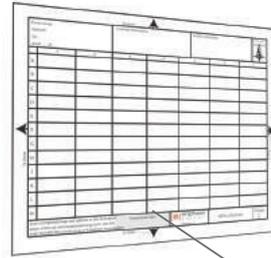
- 6 mm mounting hardware: 5 N m
- 8 mm mounting hardware: 9 N m
- When using mounting hardware, use the manufacturer's recommended torque value



## 4 Create an Installation Map

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

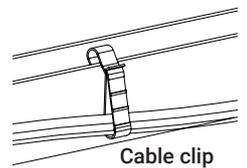
- A) Peel the removable serial number label from each microinverter and affix it to the respective location on the paper installation map.
- B) Peel the label from the Envoy-S and affix it to the installation map.
- C) Always keep a copy of the installation map for your records.



Affix serial number labels

## 5 Manage the Cabling

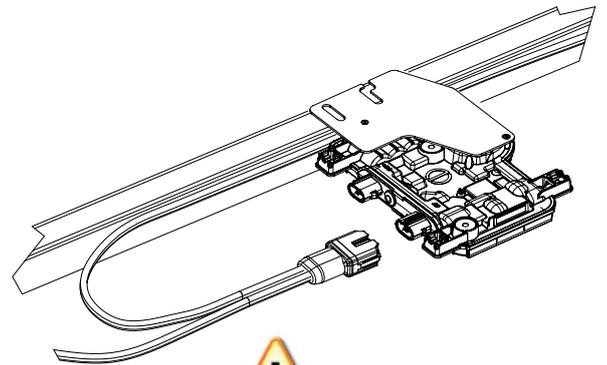
- A) Use cable clips or tie wraps to attach the cable to the racking. The cable must be supported at least every 1.8 m.
- B) Dress any excess cabling in loops so that it does not contact the roof. Do not form loops smaller than 12 cm in diameter.



Cable clip

## 6 Connect the Microinverters

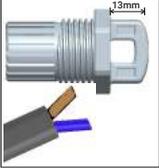
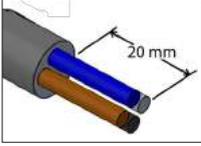
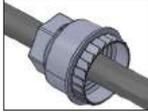
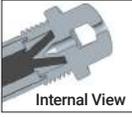
- A) Connect the microinverter. Listen for a click as the connectors engage.
- B) Cover any unused connectors on the AC cable with Enphase Sealing Caps. Listen for a click as the sealing caps engage.



**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
<p><b>A)</b> Remove 13 mm of the cable sheath from the conductors. Use the terminator body loop to measure.</p> 	<p><b>A)</b> Remove 20 mm of the cable sheath from the conductors.</p> 
<p><b>B)</b> Slide the hex nut onto the cable. The grommet inside the terminator body must remain in place.</p> 	<p><b>B)</b> Slide the hex nut onto the cable. The grommet inside the terminator body must remain in place.</p> 
<p><b>C)</b> Insert the cable into the terminator body so that the two wires land on opposite sides of the internal separator.</p> 	<p><b>C)</b> Insert the cable into the terminator body so that the four wires land on separate sides of the internal separator.</p> 
<p><b>D)</b> 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.</p> 	<p><b>D)</b> 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.</p> 
<p><b>E)</b> 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.</p>	<p><b>E)</b> 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.</p>



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

## 8 Complete Installation of the Junction Box

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

Single-Phase	Three-Phase
Brown – L1 Blue - N	Brown – L1 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.

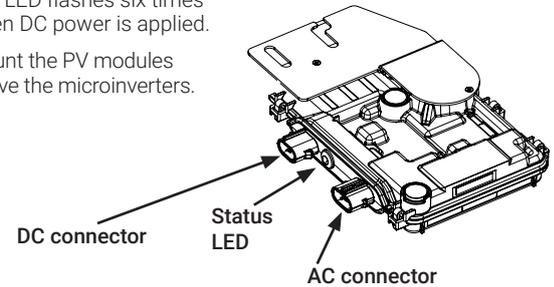
**NOTE:** Minimise the number of unused Q Cable connectors with three-phase systems. When cable connectors are left unused on a three-phase system, it creates a phase imbalance on the branch circuit. If multiple cable connectors are skipped over multiple branch circuits, the imbalance can multiply.

## 9 Connect the PV Modules



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

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



## 10 Energize the System

- Turn ON the AC disconnect or circuit breaker for the branch circuit.
- Turn ON the main utility-grid AC circuit breaker. Your system will start producing power **after a five-minute wait time**.
- 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: <a href="http://www.enphase.com/support">http://www.enphase.com/support</a> .

## 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.

	<b>WARNING:</b> Hot surface.
	<b>WARNING:</b> Refer to safety instructions.
	<b>DANGER:</b> Risk of electric shock.
	<b>Refer to manual</b>
	<b>Double-Insulated</b>

### Safety Symbols

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

### General Safety

	<b>DANGER:</b> 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.
	<b>DANGER:</b> Risk of electric shock. Be aware that installation of this equipment includes risk of electric shock.
	<b>DANGER:</b> Risk of electric shock. The DC conductors of this photovoltaic system are ungrounded and may be energized.
	<b>DANGER:</b> Risk of electric shock. Always de-energize the AC branch circuit before servicing. Never disconnect the DC connectors under load.
	<b>DANGER:</b> Risk of electric shock. Risk of fire. Only use electrical system components approved for wet locations.
	<b>DANGER:</b> Risk of electric shock. Risk of fire. Only qualified personnel should troubleshoot, install, or replace Enphase Microinverters or the Enphase Q Cable and Accessories.
	<b>DANGER:</b> 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.
	<b>DANGER:</b> 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.
	<b>DANGER:</b> Risk of electric shock. Risk of fire. Only qualified personnel may connect the Enphase Microinverter to the utility grid.
	<b>WARNING:</b> Risk of equipment damage. Enphase male and female connectors must only be mated with the matching male/female connector.
	<b>WARNING:</b> 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.
	<b>WARNING:</b> 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

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

### Microinverter Safety

	<b>DANGER:</b> 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.
	<b>DANGER:</b> Risk of fire. The DC conductors of the PV module must be labeled "PV Wire" or "PV Cable" when paired with the Enphase Microinverter.
	<b>WARNING:</b> You must match the DC operating voltage range of the PV module with the allowable input voltage range of the Enphase Microinverter.
	<b>WARNING:</b> The maximum open circuit voltage of the PV module must not exceed the specified maximum input DC voltage of the Enphase Microinverter.
	<b>WARNING:</b> 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.
	<b>WARNING:</b> 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.
	<b>WARNING:</b> 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.
	<b>WARNING:</b> 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.
	<b>NOTE:</b> 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.

### Enphase Q Cable Safety

	<b>DANGER:</b> Risk of electric shock. Do not install the Enphase Q Cable terminator while power is connected.
	<b>DANGER:</b> 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.
	<b>DANGER:</b> 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.
	<b>DANGER:</b> 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.
	<b>WARNING:</b> 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.
	<b>WARNING:</b> When installing the Enphase Q Cable, secure any loose cable to minimize tripping hazard.
	<b>NOTE:</b> When looping the Enphase Q Cable, do not form loops smaller than 12 cm in diameter.
	<b>NOTE:</b> If you need to remove a sealing cap, you must use the Enphase disconnect tool.
	<b>NOTE:</b> When installing the Enphase Q Cable and accessories, adhere to the following: <ul style="list-style-type: none"> <li>Do not expose the terminator or cable connections to directed, pressurized liquid (water jets, etc.).</li> <li>Do not expose the terminator or cable connections to continuous immersion.</li> <li>Do not expose the terminator or cable connections to continuous tension (e.g., tension due to pulling or bending the cable near the connection).</li> <li>Use only the connectors and cables provided.</li> <li>Do not allow contamination or debris in the connectors.</li> <li>Use the terminator and cable connections only when all parts are present and intact.</li> <li>Do not install or use in potentially explosive environments.</li> <li>Do not allow the terminator to come into contact with open flame.</li> <li>Fit the terminator using only the prescribed tools and in the prescribed manner.</li> <li>Use the terminator to seal the conductor end of the Enphase Q Cable; no other method is allowed.</li> </ul>

# INSTALLATION MAP

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Panel Group / Groupe de modules / Gruppo di moduli / Modulgruppe / Modulegroep:		Client / Cliente / Kunde / Client:			Installer / Installateur / Installatore:		N S E W / N S E O N S O W / N Z O W
Azimuth / Azimut: Tilt / Inclination / Inclinazione / Neigungswinkel / Helling: sheet / page / foglio / Blatt / pagina _____ / _____							
1	2	3	4	5	6	7	
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Envoy serial label /  
étiquette de numéro de série /  
etichette di serie Envoy /  
Serien Nummer / Label seriennummer:



ENPHASE.COM

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

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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)**

<b><u>Covered Product(s)</u></b>	<b><u>Limited Warranty Period(s)</u></b>
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 “ <b>Warranty Start Date</b> ”).
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](http://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](http://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.

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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.

# LIMITED WARRANTY FOR CRYSTALLINE PHOTOVOLTAIC MODULES FROM Q CELLS

Valid from January 1st, 2020

This limited warranty ("Limited Warranty") is issued by Hanwha Solutions Corporation, 86 Cheonggyecheon-ro Jung-gu, Seoul, Republic of Korea 04541, or its successors or assigns ("HSC"), and applies exclusively to Q CELLS Modules (as defined in Section 1.a).

## 1. SCOPE

### a. Products

Q CELLS Modules are defined in this Limited Warranty as Q CELLS branded photovoltaic modules manufactured by HSC or its authorized manufacturers that are sold and installed within Canada, the European Union (except for Anguilla, Bermuda, Virgin Islands, British Indian Ocean Territory, Falkland Islands, Cayman Islands, Montserrat, Pitcairn Islands, Saint Helena, Ascension and Tristan da Cunha, South Georgia and the South Sandwich Islands Turks- und Caicos Islands, Clipperton, French Guiana, French Polynesia, French Southern and Antarctic Territories, Guadeloupe, Martinique, Mayotte, New Caledonia, Réunion, Saint-Barthélemy, Saint-Martin, Saint-Pierre and Miquelon, Wallis and Futuna, Aruba, Curaçao, Sint Maarten, Bonaire, Saba and Sint Eustatius, Bouvet Island, Ceuta, Melilla, Illhas Selvagens, Greenland, Jan Mayen, Svalbard, Faroe Islands, Guernsey, Isle of Man, Jersey, Gibraltar, Azores, Madeira), Norway, Switzerland and Turkey and are of the following product types:

- Q.PEAK DUO-G5, Q.PEAK DUO-G5.2, Q.PEAK DUO BLK-G5
- Q.PEAK DUO L-G5, Q.PEAK DUO L-G5.1, Q.PEAK DUO L-G5.2, Q.PEAK DUO L-G5.3
- Q.PEAK DUO-G6, Q.PEAK DUO-G6.2, Q.PEAK DUO BLK-G6
- Q.PEAK DUO L-G6, Q.PEAK DUO L-G6.1, Q.PEAK DUO L-G6.2, Q.PEAK DUO L-G6.3
- Q.PEAK DUO-G7, Q.PEAK DUO-G7.2, Q.PEAK DUO BLK-G7
- Q.PEAK DUO L-G7, Q.PEAK DUO L-G7.1, Q.PEAK DUO L-G7.2, Q.PEAK DUO L-G7.3
- Q.PEAK DUO-G8, Q.PEAK DUO-G8.2, Q.PEAK DUO BLK-G8
- Q.PEAK DUO L-G8, Q.PEAK DUO L-G8.1, Q.PEAK DUO L-G8.2, Q.PEAK DUO L-G8.3

### b. Beneficiary

The sole and exclusive beneficiary of this Limited Warranty is an end customer who purchases Q CELLS Modules from HSC or from any one of its authorized distributors ("Distributor") and is the

initial installer of such modules into a specific photovoltaic (PV) solar energy project ("Project"), and any of the end customer's permitted successors or assigns ("Customer").

### c. Validity

This Limited Warranty takes effect on January 1st, 2020 and shall remain valid until a new version of warranty applying to Q CELLS Modules is released by HSC.

### d. Term

The term of this Limited Warranty ("Term") for the Customer begins on the date of initial delivery to the Customer ("Warranty Start Date") and ends at the end of the warranty periods set forth in Section 2.. The performance of warranty services under this Limited Warranty does not extend the Term. HSC's obligations under this Limited Warranty are conditioned upon the Customer's compliance with its payment obligations for purchase of the applicable Q CELLS Module.

## 2. WARRANTY

### a. Product Warranty

Subject to the terms and conditions in this Limited Warranty, HSC warrants to the Customer for a period of twelve (12) years following the Warranty Start Date that the Q CELLS Modules, when installed, used, and serviced under normal operating conditions and in accordance with Q CELLS Module Installation Manual provided by HSC or Distributor will be free from any defects in materials and workmanship that have a significantly negative effect on the power output of the Q CELLS Modules (collectively, "Product Defect"). The Product Warranty does not warrant a specific power output of the Q CELLS Modules, which shall be exclusively covered under the Performance Warranty in Section 2. b.. Product Defect does not include any cosmetic changes or other changes in the Q CELLS Modules' appearance, including but not limited to, any color changes, mold and normal wear and tear.

### b. Performance Warranty

Subject to the terms and conditions of this Limited Warranty, HSC warrants to the Customer that the Q CELLS Modules are manufactured to (i) produce a power output of at least ninety-eight percent (98%) of the minimum power output specified in the applicable module data sheet during the first twelve (12)

months following the Warranty Start Date, and (ii) have a yearly maximum decrease (or degradation) of power of not more than fifty four hundredths of one percent (0.54%) from start of the second (2nd) twelve (12)-month period following the Warranty Start Date until the end of such twelve (12)-month period, and repeated for each successive twelve (12)-month period until the twenty-fifth (25th) anniversary of the Warranty Start Date, (collectively, "Performance Warranty"). As an example, the Q CELLS Module will be manufactured to have a minimum power output of eighty-five percent (85%) of the minimum power output specified in the applicable module data sheet at the end of the term of this Limited Warranty. Failure to meet the Performance Warranty is defined herein as a "Performance Defect." In the event of a Performance Defect claim, the power output of any Q CELLS Modules described in this Section 2. b. shall be measured by HSC under the Standard Test Conditions ("STCs") defined in the IEC standards EN 61215 and 60904-3 in effect as of the Warranty Start Date.

### 3. EXCLUSIONS

The Limited Warranty shall not apply to any Q CELLS Modules affected by the following events or conditions:

1. usage, transport, storage, installation and/or handling in any manner that fails to strictly comply with the Installation Manual and the Packaging and Transportation Information sheet applicable to the Q CELLS Modules;
2. system or components of such system that are of a design, configuration or installation that does not meet the standards typically used by experienced professionals in the industry;
3. incorrect, improper or inadequate service, operation or maintenance of the Q CELLS Modules or of the Project, or any normal wear and tear of the Q CELLS Modules;
4. damage caused by extreme environmental sources of impact, including, but not limited to (i) acid rain or snow, (ii) blowing sand, (iii) saline air, (iv) pollution of any kind in the air, soil or groundwater, (v) unusual oxidation levels, (vi) mold, or (vii) any nearby fire, explosion, smoke or charring;
5. damage caused by acts of nature or acts of God, including, but not limited to, lightning, hail, frost, snow, storms, tidal waves, floods, extreme temperatures, earthquakes, typhoons, tornadoes, volcanic eruptions, meteorites, ground motions, earth fissures or landslides;
6. damage caused directly or indirectly by acts of violence or intervention by third parties or external forces, including but not limited to, misadventure, riots, war, insurrection, communal violence, unintentional damage by third parties, vandalism, damage caused by animals, and/or acts or omissions by third parties beyond the reasonable control of HSC;

7. damage to the Project in which the Q CELLS Modules are installed caused by external factors, including, but not limited to, voltage fluctuations, power peaks, excess current, power failure, poor electrical or mechanical engineering work, or other faults occurring in a power supply system with or without mains connection, whether or not such faults in the power supply system was contributed to by any act or omission of the Customer;
8. Q CELLS Modules are modified or used in processes involving other products, without obtaining the prior written consent of HSC;
9. the serial number or product label has been removed, changed, deleted or made unrecognizable;
10. the Q CELLS Modules are used on any mobile carriers (such as motor vehicles or ships);
11. the conditions of use at the Project, at any time, exceed the specifications set out in the applicable module data sheet; and/or
12. the Customer fails to notify the Distributor or HSC of a Product Defect or Performance Defect within 30 days of the initial discovery or prior to the end of the applicable warranty period set forth in Section 2..

### 4. WARRANTY CLAIMS

#### a. Customer Inspection

The Customer must inspect the Q CELLS Modules for visible defects when delivered. The Customer must notify HSC of any defects immediately, but in no event later than thirty (30) days any such defects were discovered during such visible defect inspection process.

#### b. Warranty Claims

The Customer will be entitled to make claims under this Limited Warranty ("Warranty Claims") only if the Customer has provided documented evidence sufficient to prove that the malfunctioning or non-conformity of the Q CELLS Modules resulted exclusively from a Product Defect or Performance Defect covered by this Limited Warranty. If the Warranty Claim is based on glass breakage, then the Customer shall conduct a static load calculation on the substructure.

#### c. Warranty Claim Compliance

The Customer must comply with the HSC's then-current Return Merchandise Authorization ("RMA") process to make any Warranty Claim. HSC will not accept any Warranty Claims not in compliance with the RMA or Warranty Claims that use the delivery of any unauthorized return shipments of Q CELLS Modules.

#### d. Warranty Claim Procedure

The Customer is responsible for shipping the Q CELLS Modules to HSC for evaluation at the Customer's expense. HSC shall pay the costs of a technical inspection and, in the event that the warranty claim is confirmed by such inspection, transportation. Otherwise, the Customer shall be charged with these costs. To make a Warranty Claim, the Customer must submit the original receipt or invoice, which bears the date of the purchase and of the delivery, the serial numbers of the relevant Q CELLS Modules and the name of the authorized distributor or seller.

#### e. Ownership Interest

The Q CELLS Modules sent to HSC in the course of the RMA process shall remain the property of the Customer until any inspection has been completed and HSC provides a replacement or refund. At the time any refund or delivery of a replacement Q CELLS Module to the Customer takes place under this Limited Warranty, the ownership interest of the defective module passes to HSC. Any repaired, replaced or additionally supplied modules will be warranted only for the remainder of the original warranty period applicable to the original Q CELLS Modules.

### 5. REMEDIES

#### a. Product Defect Remedy

If HSC determines, following a Warranty Claim, that a Q CELLS Module has a Product Defect, then HSC shall, at its discretion, within a reasonable time: (i) remedy or repair the Product Defect; (ii) provide a replacement module in place of the Q CELLS Module with the Product Defect; or (iii) provide the Customer monetary compensation equal to the purchase price of the Q CELLS Module subject to an annual four percent (4%) depreciation rate on the original purchase price as evidenced by the invoice produced by the Customer; provided, however, if the Customer fails to produce an original invoice, then the price shall be based upon the then-current per watt market price of a comparable PV module in a similar market and the date shall be based upon the date of manufacture according to the HSC records.

#### b. Performance Warranty Remedy

If HSC determines following a Warranty Claim that a Q CELLS Module has a Performance Defect, then HSC shall, at its discretion, within a reasonable time: (i) remedy or repair the Performance Defect; (ii) provide a replacement module in place of the Q CELLS Module that has the Performance Defect; (iii) make up the difference to the guaranteed power output by providing additional modules; or (iv) provide to the Customer monetary compensation equal to the portion of the purchase price of the Q CELLS Module that is in the same proportion to the purchase price as the actual measured power is to the guaranteed power subject to an annual four percent (4%) depreciation rate on the original purchase price as evidenced by the invoice produced by the Customer; provided, however, if the Customer fails to produce an original invoice, then the price shall be based upon the then current per watt market price of a comparable PV module

in a similar market and the date shall be based upon the date of manufacture according to the HSC records.

#### c. Sole and Exclusive Remedy and Obligation

THE REMEDIES SET FORTH IN THIS SECTION 5. ARE HSC'S SOLE AND EXCLUSIVE LIABILITY AND OBLIGATION, AND THE CUSTOMER'S SOLE AND EXCLUSIVE REMEDIES, FOR ANY PRODUCT DEFECT OR PERFORMANCE DEFECT IN ANY Q CELLS MODULE. THE REMEDY EXTENDED TO THE CUSTOMER SPECIFICALLY EXCLUDES ANY REIMBURSEMENT FOR THE COSTS OR EXPENSES INCURRED IN THE DISMANTLING OR INSTALLATION OF THE Q CELLS MODULES, REPLACEMENT MODULES OR PARTS, OR LOSS OF POWER.

### 6. WARRANTY LIMITATIONS

THE WARRANTIES SET FORTH IN THIS LIMITED WARRANTY ARE IN LIEU OF ALL OTHER WARRANTIES, WHETHER EXPRESS, IMPLIED, OR STATUTORY, REGARDING ANY Q CELLS MODULES, INCLUDING ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT. HOWEVER, IF A Q CELLS MODULE IS SOLD AS A CONSUMER PRODUCT, TO THE EXTENT REQUIRED BY APPLICABLE LAW, ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT ARE LIMITED TO THE PERIODS OF THE LIMITED PRODUCT AND LIMITED PERFORMANCE WARRANTIES SET FORTH ABOVE, OR SUCH SHORTER PERIOD AS REQUIRED BY APPLICABLE LAW. THIS LIMITED WARRANTY GIVES THE CUSTOMER SPECIFIC LEGAL RIGHTS, AND THE CUSTOMER MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE. HSC IS NOT RESPONSIBLE OR LIABLE IN ANY WAY FOR DAMAGE OR INJURY TO PERSONS OR PROPERTY, OR FOR OTHER LOSS OR INJURY RESULTING FROM ANY CAUSE WHATSOEVER, ARISING OUT OF OR RELATED TO ANY Q CELLS MODULES UNLESS OTHERWISE STIPULATED BY MANDATORY STATUTORY LAW. IN PARTICULAR, HSC'S LIABILITY FOR FRAUDULENT OR WILLFUL INTENT, GROSS NEGLIGENCE OR PERSONAL INJURY, IN EACH CASE, UNDER APPLICABLE MANDATORY LIABILITY LAW SHALL REMAIN UNAFFECTED.

EXCEPT AS PROVIDED IN THIS SECTION 6., THE Q CELLS MODULES, THE PRODUCT DOCUMENTATION AND ALL INFORMATION ARE PROVIDED ON AN "AS IS" BASIS.

THE CUSTOMER ACKNOWLEDGES THAT THE FOREGOING LIMITATIONS ON LIABILITY ARE AN ESSENTIAL ELEMENT OF THE RELEVANT SALES AGREEMENT BETWEEN THE PARTIES AND THAT IN THE ABSENCE OF SUCH LIMITATIONS THE PURCHASE PRICE OF THE Q CELLS MODULES WOULD BE SUBSTANTIALLY HIGHER.

SOME JURISDICTIONS LIMIT OR DO NOT PERMIT DISCLAIMERS OF LIABILITY, SO THIS PROVISION MAY NOT APPLY TO THE

CUSTOMER IN SAID JURISDICTION. SOME JURISDICTIONS DO NOT ALLOW LIMITATIONS OR THE EXCLUSION OF DAMAGES SO THE ABOVE LIMITATIONS OR EXCLUSIONS MAY NOT APPLY TO THE CUSTOMER IN SAID JURISDICTION. THE CUSTOMER MAY HAVE SPECIFIC LEGAL RIGHTS OUTSIDE THIS LIMITED WARRANTY FOR Q CELLS MODULES, AND MAY ALSO HAVE OTHER MANDATORY RIGHTS THAT VARY FROM JURISDICTION TO JURISDICTION, WHICH SHALL REMAIN UNAFFECTED.

IN NO EVENT WILL HSC BE LIABLE FOR ANY CONSEQUENTIAL, INDIRECT, EXEMPLARY, SPECIAL OR INCIDENTAL DAMAGES, INCLUDING LOSS OF USE, LOST REVENUE AND/OR LOST POWER, ARISING FROM OR RELATING TO THIS WARRANTY OR ANY Q CELLS MODULE OR ANY REPLACEMENT OR ADDITIONAL MODULE SUPPLIED BY HSC HEREUNDER, EVEN IF HSC IS AWARE OF THE POSSIBILITY OF SUCH DAMAGES.

THE TOTAL LIABILITY OF HSC, ANY DISTRIBUTOR, AND/OR THEIR RESPECTIVE OFFICERS, DIRECTORS, EMPLOYEES AND AGENTS ARISING FROM OR RELATING TO THIS LIMITED WARRANTY, WHETHER IN CONTRACT, TORT OR OTHERWISE, WILL NOT EXCEED THE AMOUNT RECEIVED BY HSC FOR THE Q CELLS MODULE THAT IS THE SUBJECT OF THE CLAIM OR DISPUTE. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO THE CUSTOMER IN SAID JURISDICTION.

## 7. ASSIGNMENT

### Customer Assignment

Customer may assign this Limited Warranty for any Q CELLS Module to a new owner of the entire photovoltaic system in which such module is originally installed, provided that such system remains intact in its original place of installation. This Limited Warranty may not otherwise be assigned or transferred, and any attempt to assign or transfer in violation of this Section 7. shall be null and void.

## 8. MISCELLANEOUS

### a. Survival

If any provision of this Limited Warranty terms and conditions is held to be invalid, illegal or unenforceable in any respect, such provision will be changed and interpreted to accomplish the objectives of such provision to the greatest extent possible under applicable law and the remaining provisions will continue in full force and effect.

### b. Governing Law

All matters arising from or relating to this Limited Warranty shall be governed by the laws of Germany. The UN Convention on the International Sale of Goods shall not apply.

### c. Waiver of Jury Trial; Jurisdiction

Any dispute, controversy or claim arising out of or relating to this Limited Warranty or any of its provisions, or the breach, termination, interpretation, enforcement or validity thereof, including any dispute hereby is waived to the fullest extent permitted by applicable Law any right it may have to a trial by jury with respect to any litigation directly or indirectly arising out of, under or in connection with this Limited Warranty. Any dispute, controversy or claim arising out of or relating to this Limited Warranty or any of its provisions, or the breach, termination, interpretation, enforcement or validity thereof, including any dispute irrevocably is submitted to the jurisdiction of the courts of Leipzig, Germany, solely in respect of the interpretation and enforcement of the provisions of this Limited Warranty.

**EN** INSTALLATION INSTRUCTIONS

## Free Standing Mounting System

**ES** INSTRUCCIONES DE MONTAJE

## Estructura de montaje para tejado plano

**IT** ISTRUZIONI DI MONTAGGIO

## Struttura di supporto per piano

### **EN** Important Notes

- The dimensioning of the mounting system (number of mounting triangles) should be specifically carried out for each individual project, following the specified structural engineering standards and regulations.
- Prerequisite for the proper application always is a solid mounting base that can accommodate the occurring forces (weight, wind and snow loads).
- The installation instructions of the solar module manufacturers must be adhered to.

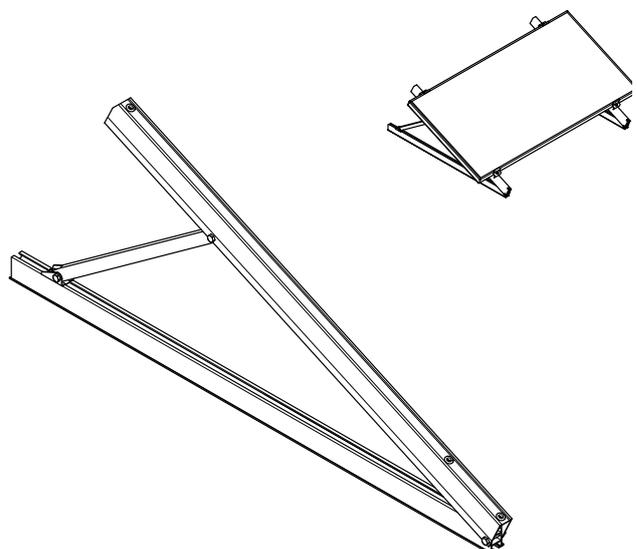
### **ES** Observaciones importantes

- Hay que realizar el dimensionamiento del sistema de montaje (número de triángulos) según cada proyecto y conforme con la normativa vigente.
- Comprobar las condiciones de suelo o tejado que va a soportar las fuerzas de nieve y viento.
- Las instrucciones de instalación del fabricante de los módulos deben ser cumplidas.

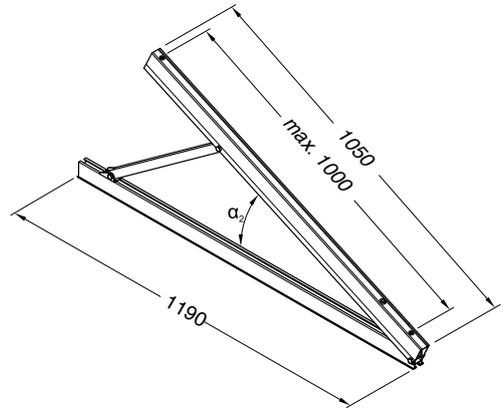
### **IT** Informazioni importanti

- Il dimensionamento del sistema di montaggio (Numero dei triangoli di supporto) deve essere eseguito considerando le norme rispettive.
- Deve essere garantita un'adeguata sottostruttura per il montaggio cioè di una sottostruttura in grado di sostenere le forze (peso proprio, carico di vento e di neve) che si verranno a creare.
- Rispettare le prescrizioni di montaggio del produttore dei moduli.

**TRIC F Quer**



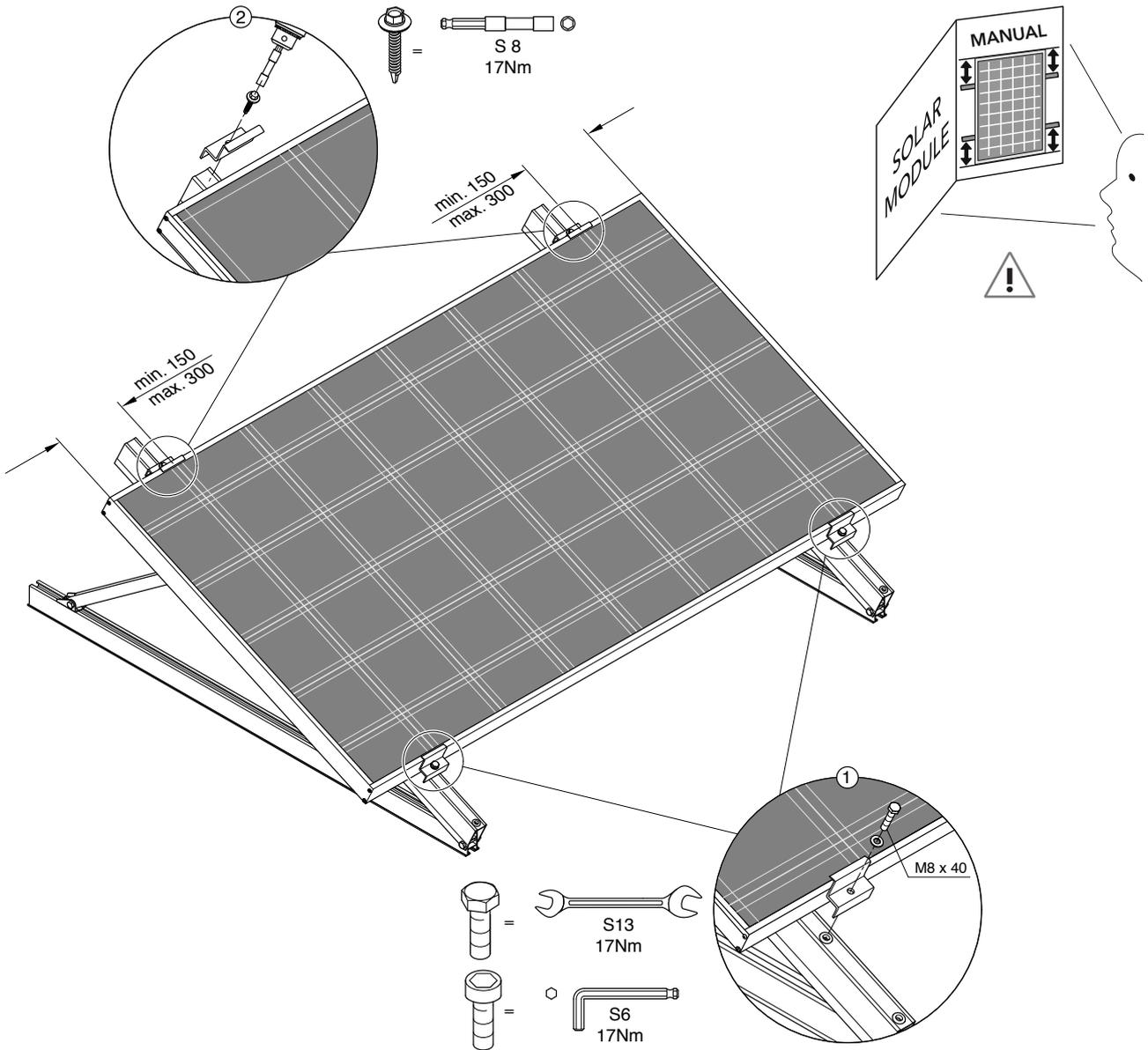
## TRIC F Quer



TRIC F Quer	$\alpha_2$
	18° - 43°



TRIC F Quer Module installation / Montaje de módulos / Montaggio moduli



# Functional Warranty TRIC Racking Systems



## Material and Workmanship

Wagner & Co guarantees functionality and durability of the TRIC racking system components as well as that they are free of material and production faults, provided they were installed, used and maintained according to the prescribed conditions and instructions.

Wagner & Co grants this warranty for a period of ten years after the date of sale to a retailer or installer.

## Entitlements

The value of potential warranty entitlements is limited to the net purchase price of the products.

In a warranty case Wagner & Co will decide on either replacing or repairing the faulty product or reimbursing the purchase price.

There are no additional liabilities or warranty entitlements. In particular Wagner & Co is not liable for:

- Costs of new installations and extensions,
- Appraisal and testing costs,
- Packaging and shipping costs as well as
- Foregone profits

All liability is excluded for damage caused by severe weather or force majeure.

## Limitations and Conditions

Potential warranty entitlements are limited to the prescribed period of this guarantee. In order to secure potential warranty entitlements the following conditions apply:

- The mounting racks were thoroughly installed observing the installation manuals, layout plans and structural calculations.
- For the design and installation of the system the codes, regulations and technical standards applicable at the time of the installation have been observed.

- No damages occurred during transportation, storage and operation.

Any warranty entitlements granted will not extend the overall guarantee period of 10 years. Replaced parts or products will become property of Wagner & Co.

## Warranty Claim

For any potential warranty claim you immediately have to contact the retailer or installer where you obtained the racking systems. The retailer/installer will explain the required further steps.

You have to make your warranty claim in writing and send it in together with a proof of purchase and a description of the fault.

Otherwise our current general business conditions apply.

Cölbe, Germany, February 2012