In addition to what is explained in this quick installation guide, the safety and installation information provided in the product manual must be read and followed. The technical documentation for the product is available at the website. The device must be used in the manner described in the manual. If this is not the case the safety devices guaranteed by the inverter might be ineffective.
1. Labels and Symbols

The labels on the inverter show the markings, main technical data and the identification of the equipment and of the manufacturer.

### Regulatory Label

In case of a service password request, it is necessary to have the serial number available (SN: YYWWSSSSSS)

### Wireless Identification Label

The label is divided in two separate parts by a dashed line; take the bottom part and apply it on the cover of this quick installation guide.

---

**ATTENTION –** The labels placed on the equipment absolutely **MUST NOT be removed, damaged, dirtied, hidden, etc.**

In the manual, and/or in some cases on the equipment, the danger or attention zones are indicated by signs, labels, symbols or icons.

#### Symbols used in the guide and on the products

- **Obligation to consult the manual**
- **General warning - Important safety information**
- **Dangerous voltage**
- **Hot parts**
- **Degree of protection of the device**
- **Temperature interval**
- **Without isolating transformer**
- **Direct and alternating currents, respectively**
- **Positive and negative pole of the input voltage (DC)**
- **Obligation to use protective clothing and/or personal protective equipment**
- **Point of connection of the protective ground**
- **Risk of electric shock. The discharge time (quantified in the figure by the number XX) of the stored energy after de-energizing of the Inverter from both DC side and AC side.**

---

2. Models and Inverter Components

The inverter models referred to in this installation guide are available in six power capacity systems: 1.2kW, 2.0kW, 3.0kW, 3.3 kW, 4.0 kW, 4.6 kW and 5.0 kW. For each model, the following variants are available (suffix could be combined):

- **Standard models** (e.g. UNO-DM-3.3-TL-PLUS-B-Q). Models equipped with Wireless communication (-B suffix).
- **Models with “S” suffix** (e.g. UNO-DM-3.3-TL-PLUS-SB-Q). Models equipped with DC disconnecting switch.
- **Models with “X” suffix** (e.g. UNO-DM-3.3-TL-PLUS-SB-X-Q). Models equipped with UNO-DM-COM KIT.
- **Models with “U” suffix** UNO-DM-5.0-TL-PLUS-SB-QU. Unbalanced input channels (UNO-DM-5.0-TL-PLUS model only).

---

3. Lifting and transporting

**Transportation and relocation**

The transportation of the device, in particular via land transportation, must be made with adequate means and sand ways to protect the parts from violent impacts, humidity, vibrations, etc.

**Lifting**

The means used for lifting must be suitable to bear the weight of the equipment.

**Weight of the equipment components**

<table>
<thead>
<tr>
<th>Model</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>All models</td>
<td>15 kg</td>
</tr>
</tbody>
</table>

**Unpacking and inspection**

The packaging components must be removed and disposed of according to the applicable regulations of the country where the device is installed.

Upon opening the packaging, check the integrity of the equipment and verify that all the components are present.
If you notice defects or deterioration, stop the operations and call the carrier, as well as inform FIMER Service immediately. Please keep the packaging in the event it has to be returned; the use of inadequate packaging will void the warranty. Always store the Quick Installation Guide, all the supplied accessories and the AC connector cover in a safe place.

4. Choice of the place of installation

Place and position of installation

- Refer to the technical data for the verification of the environmental conditions to be met.
- Do not install the inverter where it is exposed to direct sunlight. If necessary, use protection that minimizes the exposure, especially for ambient temperatures above 40°C/104°F.
- Do not install in small unventilated spaces where the air cannot circulate freely.
- Always ensure that the airflow around the inverter is not blocked to prevent overheating.
- Do not install near flammable substances (minimum distance 3 m/10 ft).
- Do not install on wooden walls or other flammable substances.
- Do not install inside residential premises or where a prolonged presence of people or animals is planned, due to the acoustic noise that the inverter produces during operation. The noise emission value is strongly influenced by the installation location (e.g. type of surfaces around the inverter, general properties of the room, etc.) and the quality of electricity supply.
- Install on a solid wall or structure that is suitable to support the weight of the equipment.
- Install in an upright position with a maximum inclination as shown in the figure.
- Respect the minimum distances indicated. Choose a location that allows enough space around the unit to allow easy installation and removal of the equipment from the mounting surface.
- Where possible, install at eye level for easy viewing of the LEDs.
- Install at a height that takes into account the weight of the equipment.
- When installing multiple inverters, position the inverters side by side while maintaining the minimum distances (measured from the outer edge of the inverter); if the space available does not allow this provision, position the inverters in a staggered layout, as indicated in the figure, in order to make sure that the heat dissipation is not affected by the other inverters.
- All installations at altitudes above 2,000 m/6,500’ must be assessed on a case by case basis with FIMER Service to determine the proper derating of the input parameters.

5. Supplied Component list

<table>
<thead>
<tr>
<th>Components supplied with the inverter</th>
<th>Q.ty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bracket for wall fixing</td>
<td>1</td>
</tr>
<tr>
<td>Watertight connector for the AC cable connection</td>
<td>1</td>
</tr>
<tr>
<td>Cable with faston isolated for the configuration of the input channels in parallel</td>
<td>1 + 1</td>
</tr>
<tr>
<td>(Spare part) T20 screw for front cover</td>
<td>1</td>
</tr>
<tr>
<td>M5x10 screw for the external ground connection</td>
<td>1</td>
</tr>
<tr>
<td>M5 contact washers for the external ground connection</td>
<td>2</td>
</tr>
<tr>
<td>T20 Wall bracket locking screws (to be used when lock springs 02 on the bracket are missing)</td>
<td>2</td>
</tr>
<tr>
<td>Technical documentation</td>
<td>1</td>
</tr>
</tbody>
</table>

6. Assembly instructions

ATTENTION – Do not open the inverter in case of rain, snow or high humidity (>95%). During the installation, do not place the inverter with the front cover (05) facing the ground.

Install the inverter by following this procedure:
- Place the bracket (01) level on the wall and use it as a drilling template.
- The selection of the appropriate number and distribution of the anchors is the responsibility of the installer. The choice must be made according to the type of wall, frame or other type of support, and should be sized considering a total load of more than 4 times the weight of the inverter (total 4x15=60 kg total). Depending on the type of anchor chosen, drill the holes required for the fixing of the bracket (Figure A).
- Fix the bracket to the wall or structure.
- Carefully lift the inverter and hook it onto the bracket by inserting the two supports in the slots on the inverter (Figure B).
- Proceed to anchor the inverter to the bracket by installing the two (one each side) locking screws (Figure B1).
- Install wireless antenna (11) by screwing it into the dedicated connector located on the bottom part of inverter (Figure C).
7. Opening the cover

**WARNING – ELECTRIC SHOCK HAZARD!** Hazardous voltages may be present inside the inverter. The access to the internal zones of the inverter must be carried out after a minimum waiting time of 5 minutes since the inverter was disconnected from the grid and from the photovoltaic generator.

- The main connections are made on the lower part (outside) of the inverter. To install the accessories and make the necessary connections, unscrew the 8 screws using a TORX T20 key and open the front cover (05). While removing the screws, pay special attention since additional screws are not supplied.
- After making the connections, close the cover by tightening the 8 screws on the front, while respecting the sequence and tightening torque (2.5 Nm).

8. Input connection (DC) and input configurations

**WARNING –** Check the correct polarity of the input strings and the absence of earth leakages of the PV generator. When the PV panels are exposed to sunlight, they provide a continuous voltage (DC) to the inverter. Access to the internal inverter zones must be carried out with the equipment disconnected from the grid and from the PV generator.

**ATTENTION –** Caution! The inverters referred to in this document are WITHOUT AN ISOLATION TRANSFORMER (transformer-less). This type involves the use of PV panels of an isolated type (IEC61730 Class A Rating) and the need to maintain the PV generator floating with respect to earth; no generator pole must be connected to the ground.

**ATTENTION –** If multiple strings are connected to the same input, they must have the same type and number of panels in series. FIMER also recommend they have the same orientation and inclination. Only for the 5kW model. If the input strings are connected in channels with independent mode, keep in mind that channel 1 (IN1) supports 19A while channel 2 (IN2) supports 11.5A.

-Observe the maximum input current with respect to quick-coupling connectors. Refer to “String inverters - Product manual appendix” document available on the site www.fimer.com, to find out the make and model of the quick-coupling connector used on the inverter. Depending on the model of the connectors installed on your inverter, it will be necessary to use the same model for the corresponding counterparts (by checking the manufacturer’s website or via FIMER for the compliant counterpart).

**ATTENTION –** The use of non-compliant counterparts with respect to the quick-coupling connectors models present on the inverter, may cause serious damage to the unit and result in the immediate loss of warranty.

-Connect the DC input, always checking the tightness of the connectors.
-Versions of the inverter which are equipped with two independent input channels (i.e. dual maximum power point tracker, MPPT), can be configured as parallel (i.e. single MPPT).

**Configuring Input Mode to Independent (default configuration)**

This configuration is set at the factory and involves the use of the two input channels (MPPT) in an independent mode. This means that the jumpers (supplied) between the positive and negative poles of the two DC input channels (12) must not be installed, and that the independent channel mode should be set during the commissioning phase, in the dedicated section of the internal webserver “SETTINGS > SETUP DC SIDE > INPUT MODE”.

**9. Line cable and protective devices**

**Protection switch under load (AC switch) and sizing of the line cable**

To protect the AC connection line of the inverter, we recommend the installation of a protection device against overcurrent and earth leakages with the following features:

<table>
<thead>
<tr>
<th>Type</th>
<th>Circuit breaker with differential magnetic-thermal protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal voltage</td>
<td>230 Vac</td>
</tr>
<tr>
<td>Nominal current</td>
<td>10A 16A 16A 20A 25A 25A 32A</td>
</tr>
<tr>
<td>Magnetic protection feature</td>
<td>B/C</td>
</tr>
<tr>
<td>Number of poles</td>
<td>2</td>
</tr>
<tr>
<td>Type of differential protection</td>
<td>A/AC</td>
</tr>
<tr>
<td>Differential sensitivity</td>
<td>300 mA</td>
</tr>
</tbody>
</table>

**FIMER** declares that the **FIMER** high frequency inverter without a transformer are not manufactured to inject continuous currents of ground fault, and therefore, the differential installed downstream of the inverter, type B according to IEC 60755/A 2, is not required. Characteristics and sizing of the line cable

**Characteristics and sizing of the line cable**

The cable should be three-pole. The section of the AC line conductor must be sized in order to avoid unwanted disconnections of the inverter from the distribution network due to high impedances of the line that connects the inverter to the point of supply of electricity.

**Maximum length of the line conductor (m)**

<table>
<thead>
<tr>
<th>Line conductor cross-section</th>
<th>UNO-DM-1.2</th>
<th>UNO-DM-2.0</th>
<th>UNO-DM-3.0</th>
<th>UNO-DM-3.3</th>
<th>UNO-DM-4.0</th>
<th>UNO-DM-4.6</th>
<th>UNO-DM-5.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5 mm²</td>
<td>18 m</td>
<td>10 m</td>
<td>6 m</td>
<td>6 m</td>
<td>5 m</td>
<td>4 m</td>
<td>- m</td>
</tr>
<tr>
<td>2.5 mm²</td>
<td>22 m</td>
<td>15 m</td>
<td>11 m</td>
<td>11 m</td>
<td>10 m</td>
<td>8 m</td>
<td>6 m</td>
</tr>
<tr>
<td>4 mm²</td>
<td>40 m</td>
<td>25 m</td>
<td>19 m</td>
<td>19 m</td>
<td>16 m</td>
<td>13 m</td>
<td>10 m</td>
</tr>
<tr>
<td>6 mm²</td>
<td>56 m</td>
<td>38 m</td>
<td>29 m</td>
<td>29 m</td>
<td>24 m</td>
<td>20 m</td>
<td>16 m</td>
</tr>
</tbody>
</table>

The values are calculated in nominal power condition considering:

1. a power loss along the line of not more than 1%.
2. copper cable used, with HEPR rubber insulation and placed in open air

...
10. Output connection (AC)

ATTENTION – Caution! Before performing the operations described below, make sure that you have properly disconnected the AC line downstream of the inverter.

For the grid connection of the inverter, 3 connections are needed: ground, neutral, and phase. The ground connection of the inverter is mandatory. The connection of the network cable to the inverter is performed by means of the dedicated AC output connector (10), by doing the following:

• Remove the connector head by pressing on the two retaining clips and then loosen the cable gland.

• Insert the cable into the connector and cut the cable to length.

NOTE – Make sure that the cable bend radius is greater than 4 times the cable diameter.

• Prepare the cable according to the following measurement:

(*) Use properly crimped ferrules only on stranded wire with a conductor section values between 1.5 - 4 mm².

• Install the individual wires (phase, neutral, and ground) on the connector head according to the instructions printed on each of the three terminals (tightening torque 0.8...1 Nm).

11. Instruments

The LEDs allow you to view inverter status conditions to be analyzed in greater depth by consulting the manual.

<table>
<thead>
<tr>
<th>LEDs (06)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>POWER</td>
<td>Green</td>
</tr>
<tr>
<td>COMM</td>
<td>Green</td>
</tr>
<tr>
<td>ALARM</td>
<td>Yellow</td>
</tr>
<tr>
<td>WLAN</td>
<td>Multicolor</td>
</tr>
<tr>
<td>GFI</td>
<td>Red</td>
</tr>
</tbody>
</table>

POWER: Green
Solid when the inverter is working correctly.
Flashes when checking the grid or if there is insufficient sunlight.

COMM: Green
Activation status of the inverter’s wireless communication.
The inverter has detected an anomaly. The anomaly is shown on the “EVENTS” section of the internal webserver.

ALARM: Yellow
The inverter has detected an anomaly. The anomaly is shown on the “EVENTS” section of the internal webserver.

WLAN: Multicolor
Quality of the wireless communication signal.

GFI: Red
Ground fault on the DC side of the PV generator. The error is shown on the “EVENTS” section of the internal webserver.

12. Commissioning

ATTENTION – Before proceeding with commissioning, make sure you have carried out all the following checks:
- Check the correct connection and polarity of the DC inputs, and the correct connection of the AC output and ground cables.
- Check the sealing barrier of the cable ducts and installed quick-fit connectors to prevent accidental disconnections and/or avoid compromising the IP65 environmental protection rating.
Commissioning is carried out via Wi-Fi connection to the inverter web user interface. Initial setup must therefore be carried out via a tablet, notebook or smartphone with a Wi-Fi connection.

To establish the connection and operate with the inverter, it is necessary to connect its input to the DC voltage of the photovoltaic panels.
Supply the inverter with DC input voltage from the photovoltaic generator and via AC GRID voltage.

**ATTENTION** – Make sure that the irradiation is stable and adequate for the inverter commissioning procedure to be completed.

### 12.1 Pre-commissioning phase 1 - Connection to the local Wi-Fi network

**DEVICE USED:** TABLET/SMARTPHONE

Once powered, launch a QR reader for mobile and SCAN the QR code marked with on the label on the right side of the inverter and connect to inverter network (tap connect).

The name of the Wi-Fi network created by the system, that the connection should be established with, will be:

ABB-XX-XX-XX-XX-XX-XX

(where the X is the MAC address)

After this step wait 10 seconds to allow the WLAN connection

**DEVICE USED:** LAPTOP

Enable the wireless on the device you are using for the commissioning and search for the network named ABB-XX-XX-XX-XX-XX-XX, where “X” is an hexadecimal number of the MAC Address (the MAC Address is indicated on the “wireless identification label” on the side of the inverter). When prompted, type the PK (product key), including the dashes. Example: 1234-1234-1234-1234 as the network password.

### 12.2 Pre-commissioning phase 2 - Internal web UI access

**DEVICE USED:** TABLET/SMARTPHONE

SCAN this QR code (it is also reported in the inverter pre-commissioning flyer inside the box of the inverter). An internet browser page showing the step by step procedure will be open.

**NOTE –** The information contained in this QR code is the IP address of the web user interface of the inverter: http://192.168.117.1

**NOTE –** Recommended browsers: Chrome from v.55, Firefox from v.50, Safari from v.10.2.1

**DEVICE USED:** LAPTOP

Open an internet browser page and insert http://192.168.117.1 on the address bar.

### 12.3 STEP BY STEP COMMISSIONING WIZARD

#### 12.3.1 STEP 1 - Administrator/User login credentials

- **Set the Administrator account user and password (minimum 8 character for password):**
  - Administrator account can open and view the contents of photovoltaic site. Additionally, they can make changes to inverter settings. User and password are CASE SENSITIVE.
  - **Set the User account user and (optional) password (minimum 8 character for password):**
    - User account can only read data. It cannot make any changes. User and password are CASE SENSITIVE.

- **Click on “Next” button to proceed to the next stage of the configuration wizard.**

#### 12.3.2 STEP 2 (Optional) - Residential wireless network connection.

The parameters relating to the home wireless network (set on the router) that must be known and set during this step are:

**IP Settings:** DHCP or Static.

If you select the DHCP function (default setup) the router will automatically assign a dynamic IP address to the inverter whenever it tries to connect to the user network.

With Static, the user can assign a fixed IP address to the system. The data which has to be entered in order for IP static address assigning to take place will appear. Complete the additional fields at the bottom of the screen (all the fields are mandatory with the exception of the secondary DNS server).

**Available networks (SSID):** Identify and select your own (home) wireless network from all those shown in the SSID field (you can carry out a new search of the networks that can be detected with the Update button ). Once the network has been selected, confirm.

**Password:** Wireless network password.

Enter the password for the destination network (if necessary) and start the connection attempt (it will take a few seconds).

- **Click on “Connect” button to connect the inverter to the home wireless network.**
- **A message will ask for confirmation. Click “Next” to connect the inverter to the home wireless network.**
- **Once the inverter is connected to the domestic wireless network, a new message will confirm that.**

The message provides the IP Address assigned by the home wireless router to the inverter that can be used each time you want to access the internal webserver, with the inverter connected to the home wireless network. Take note of it.

- **Click on “Next” button to proceed to the next stage of the configuration wizard.**

**NOTE –** The IP address assigned may vary for reasons connected to the wireless home router setup (for example, a very brief DHCP lease time). If verification of the address is required, it is usually possible to obtain the client list (and the corresponding IP addresses) from the wireless router administration panel.

If the inverter loses the connection with the home wireless network, it is available accessing the Wi-Fi network ABB-XX-XX-XX-XX-XX-XX, where “X” is an hexadecimal number of the MAC Address.

**NOTE –** The most common causes of losing connectivity might be:

- different wireless network password, faulty or unreachable router, replacement of router (different SSID) without the necessary setting updates.

#### 12.3.3 STEP 3 - Date, Time and Time zone

- **Set the Date, Time and Time zone (The inverter will propose these fields when available).**
  - When it’s not possible for the inverter to detect the time protocol, these fields have to be manually entered.
  - **Click on “Next” button to proceed to the next stage of the configuration wizard.**

#### 12.3.4 STEP 4 - Inverter country standard, Input mode, Meter and Energy policy.

**Country standard**

Set the grid standard of the country in which the inverter is installed. From the moment that the grid standard is set, you have 24 hours to make any changes to the value, after which the “Country Select > Set Std.” functionality is blocked, and the remaining time will have to be reset in order to have the 24 hours of operation available again in which to select a new grid standard (follow the procedure “Resetting the remaining time for grid standard variation” described in the relevant section).

**Input mode**

- **Independent**
- **Parallel**

**NOTE –** See the relevant section of this guide to know how to physically set the input mode.

**Meter**

- **None (installation without meter)**
- **REACT-MTR-1PH (single-phase)**
- **ABB 3PH (three-phase)**
- **ABB 1PH (single-phase)**

If the selected meter is three-phase additional requested fields will appear:

- **Meter Phase:** select the phase to which the inverter is connected.
  - When a meter type is selected is possible to set also the Energy Policy fields that allows to manage the energy produced by the PV plant.
Energy Policy
- Zero injection: The system automatically manages power flows in order to avoid the injection of energy to the grid.
- Self-consumption: The system automatically manages power flows in order to maximise self-consumption.
- Custom: The system automatically manages power flows in order to avoid feeding the grid with power greater than: PDC x Plim where PDC is the power of the photovoltaic generator (*PV GENERATOR POWER* parameter) and Plim is the output power limit with respect to PDC(%) (*“FEED-IN POWER” parameter*)

* Confirm the settings by clicking “DONE”; the inverter will reboot at the finish of the meter test phase (if installed).

* After the wizard is completed, the system will power-on. The inverter checks the grid voltage, measures the insulation resistance of the photovoltaic field with respect to ground and performs other auto-diagnostic checks.

During the preliminary checks on the parallel connection with the grid, the “Power” LED keeps flashing, the “Alarm” and “GFI” LEDs are off. If the outcome of the preliminary checks on the grid parallel is positive, the inverter connects to the grid and starts to export power to the grid. The “Power” LED remains fixed on while the “Alarm” and “GFI” LEDs are off.

**NOTE** – To address any problems that may occur during the initial stages of operation of the system and to ensure the inverter remains fully functional, you are advised to check for any firmware updates in the download area of the website www.fimer.com or at https://registration.solar.fimer.com (instructions for registering on the website and updating the firmware are given in this manual).

13. Features and Technical Data

<table>
<thead>
<tr>
<th>Input</th>
<th>UNO-DM-1.2</th>
<th>UNO-DM-2.0</th>
<th>UNO-DM-3.0</th>
<th>UNO-DM-3.3</th>
<th>UNO-DM-4.0</th>
<th>UNO-DM-4.6</th>
<th>UNO-DM-5.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Absolute maximum input voltage (V_{max,dc})</td>
<td>600 V</td>
<td>120 V</td>
<td>150 V</td>
<td>150 V</td>
<td>200 V</td>
<td>200 V</td>
<td>200 V</td>
</tr>
<tr>
<td>Input activation voltage (V_{act})</td>
<td>120 V</td>
<td>150 V</td>
<td>150 V</td>
<td>200 V</td>
<td>200 V</td>
<td>200 V</td>
<td>200 V</td>
</tr>
<tr>
<td>DC input voltage operating range (V_{MPPT min}, V_{MPPT max})</td>
<td>0.75V_{MPPT}...580 V</td>
<td>0.9V_{MPPT}...580 V</td>
<td>0.9V_{MPPT}...800 V</td>
<td>1.1V_{MPPT}...580 V</td>
<td>1.1V_{MPPT}...800 V</td>
<td>1.1V_{MPPT}...800 V</td>
<td>1.1V_{MPPT}...800 V</td>
</tr>
<tr>
<td>Rated input DC voltage (V_{in})</td>
<td>185 V</td>
<td>300 V</td>
<td>300 V</td>
<td>360 V</td>
<td>360 V</td>
<td>360 V</td>
<td>360 V</td>
</tr>
<tr>
<td>Rated input DC power (P_{in})</td>
<td>1500 W</td>
<td>2500 W</td>
<td>3300 W</td>
<td>3500 W</td>
<td>4250 W</td>
<td>4750 W</td>
<td>5150 W</td>
</tr>
<tr>
<td>Number of independent MPPTs</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Maximum input power for each MPPT (P_{in,MPPT})</td>
<td>1500 W</td>
<td>2500 W</td>
<td>3300 W</td>
<td>3300 W</td>
<td>3000 W</td>
<td>3000 W</td>
<td>3500 W</td>
</tr>
<tr>
<td>DC input voltage range (V_{in,MPPT min}, V_{in,MPPT max})</td>
<td>100...530 V</td>
<td>210...530 V</td>
<td>320...530 V</td>
<td>170...530 V</td>
<td>130...530 V</td>
<td>150...530 V</td>
<td>170...480 V</td>
</tr>
<tr>
<td>Maximum fault current</td>
<td>&lt; 5 mA (in the event of a fault, limited by the external protection on the AC circuit)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum AC output power (P_{ac max})</td>
<td>MPPT1:3500W [305V≤V_{MPPT}≤530V]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AC connection type</td>
<td>Single phase</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nominal AC output power</td>
<td>1200 W</td>
<td>2000 W</td>
<td>3000 W</td>
<td>3300 W</td>
<td>4000 W</td>
<td>4600 W</td>
<td>5000 W</td>
</tr>
<tr>
<td>Maximum apparent power (S_{ac})</td>
<td>1200 VA</td>
<td>2000 VA</td>
<td>3000 VA</td>
<td>3300 VA</td>
<td>4000 VA</td>
<td>4600 VA</td>
<td>5000 VA</td>
</tr>
<tr>
<td>Nominal AC output voltage (V_{ac})</td>
<td>230 V</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Output AC voltage range (V_{ac min}, V_{ac max})</td>
<td>180...264 Vac</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum AC output current (I_{ac max})</td>
<td>5.5 A</td>
<td>10.0 A</td>
<td>14.5 A</td>
<td>14.5 A</td>
<td>17.2 A</td>
<td>20.0 A</td>
<td>22.0 A</td>
</tr>
<tr>
<td>Maximum AC output current</td>
<td>&lt;25 A rms (100 ms)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Short circuit current contribution</td>
<td>10.0 A</td>
<td>12.0 A</td>
<td>16.0 A</td>
<td>16.0 A</td>
<td>19.0 A</td>
<td>22.0 A</td>
<td>24.0 A</td>
</tr>
<tr>
<td>Inrush current</td>
<td>Negligible</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nominal output frequency (f_{n})</td>
<td>50 / 60 Hz</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Output frequency range (f_{min-f_{max}})</td>
<td>47...53 / 57...63 Hz</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nominal output power factor and adjustability interval</td>
<td>0.7xV_{MPPT min}...1.0xV_{MPPT max}</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total harmonic current distortion</td>
<td>&lt; 1.5%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AC connections type</td>
<td>Panel female connector</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Input protection**
- Reverse polarity protection: Yes, from a current limited source
- Photovoltaic array insulation control: Yes
- DC disconnect switch characteristics: According to local standard

**AC connection type**: Single phase

| Nominal output AC power (P_{ac,max}) | 1200 W | 2000 W | 3000 W | 3300 W | 4000 W | 4600 W | 5000 W |
| Maximum output power (P_{ac max}) | 1200 VA | 2000 VA | 3000 VA | 3300 VA | 4000 VA | 4600 VA | 5000 VA |
| Nominal AC output power | 1200 VA | 2000 VA | 3000 VA | 3300 VA | 4000 VA | 4600 VA | 5000 VA |
| Nominal AC output voltage (V_{ac}) | 230 V |
| Output AC voltage range (V_{ac min}, V_{ac max}) | 180...264 Vac |
| Maximum AC output current (I_{ac max}) | 5.5 A | 10.0 A | 14.5 A | 14.5 A | 17.2 A | 20.0 A | 22.0 A |
| Maximum AC output current | <25 A rms (100 ms) |
| Short circuit current contribution | 10.0 A | 12.0 A | 16.0 A | 16.0 A | 19.0 A | 22.0 A | 24.0 A |
| Inrush current | Negligible |
| Nominal output frequency (f_{n}) | 50 / 60 Hz |
| Output frequency range (f_{min-f_{max}}) | 47...53 / 57...63 Hz |
| Nominal output power factor and adjustability interval | 0.7xV_{MPPT min}...1.0xV_{MPPT max} |
| Total harmonic current distortion | < 1.5% |
| AC connections type | Panel female connector |

**Output Protection**
# Quick Installation Guide

**UNO-DM-1.2**
- Anti-islanding protection: According to local standard
- Maximum external AC overcurrent protection: 10.0 A, 16.0 A, 16.0 A, 20.0 A, 25.0 A, 25.0 A, 32.0 A

**UNO-DM-2.0**
- Maximum efficiency ($\eta_{\text{max}}$): 94.8%, 96.7%, 96.7%, 97.0%, 97.0%, 97.0%, 97.4%
- Weighted efficiency (EURO/CEC): 92.0%, 95.0%, 95.0%, 96.5%, 95.5%, 96.5%, 97.0%
- Power threshold of the power - Varistor: 2 (L - N / L - PE)
- Nighttime consumption: < 0.4 W

**UNO-DM-3.3**
- Operational Performances
  - Maximum efficiency ($\eta_{\text{max}}$): 94.8%, 96.7%, 96.7%, 97.0%, 97.0%, 97.0%, 97.4%
  - Weighted efficiency (EURO/CEC): 92.0%, 95.0%, 95.0%, 96.5%, 95.5%, 96.5%, 97.0%
  - Maximum external AC overcurrent protection: 10.0 A, 16.0 A, 16.0 A, 20.0 A, 25.0 A, 25.0 A, 32.0 A
- Output overvoltage protection - Varistor: 2 (L - N / L - PE)

**UNO-DM-4.0**
- Operational Performances
  - Maximum efficiency ($\eta_{\text{max}}$): 94.8%, 96.7%, 96.7%, 97.0%, 97.0%, 97.0%, 97.4%
  - Weighted efficiency (EURO/CEC): 92.0%, 95.0%, 95.0%, 96.5%, 95.5%, 96.5%, 97.0%
  - Maximum external AC overcurrent protection: 10.0 A, 16.0 A, 16.0 A, 20.0 A, 25.0 A, 25.0 A, 32.0 A
- Output overvoltage protection - Varistor: 2 (L - N / L - PE)

**UNO-DM-4.6**
- Operational Performances
  - Maximum efficiency ($\eta_{\text{max}}$): 94.8%, 96.7%, 96.7%, 97.0%, 97.0%, 97.0%, 97.4%
  - Weighted efficiency (EURO/CEC): 92.0%, 95.0%, 95.0%, 96.5%, 95.5%, 96.5%, 97.0%
  - Maximum external AC overcurrent protection: 10.0 A, 16.0 A, 16.0 A, 20.0 A, 25.0 A, 25.0 A, 32.0 A
- Output overvoltage protection - Varistor: 2 (L - N / L - PE)

**UNO-DM-5.0**
- Operational Performances
  - Maximum efficiency ($\eta_{\text{max}}$): 94.8%, 96.7%, 96.7%, 97.0%, 97.0%, 97.0%, 97.4%
  - Weighted efficiency (EURO/CEC): 92.0%, 95.0%, 95.0%, 96.5%, 95.5%, 96.5%, 97.0%
  - Maximum external AC overcurrent protection: 10.0 A, 16.0 A, 16.0 A, 20.0 A, 25.0 A, 25.0 A, 32.0 A
- Output overvoltage protection - Varistor: 2 (L - N / L - PE)

**Communication**
- Embedded Communication Interface: Wireless (modbus TCP)
- Embedded Communication Protocol: Modbus TCP (SunSpec), Aurora Protocol
- Firmware Update Capabilities: Locally and remotely
- Monitoring: Plant Portfolio Manager, Plant Viewer, Plant Viewer for Mobile

**Optional board UNO-DM-COM kit**
- Optional Communication Interface: RS485 (use with meter for dynamic feed-in control), Alarm/Load manager relay, Remote ON/OFF
- Optional Communication Protocol: ModBus RTU (SunSpec), Aurora Protocol

**Optional board UNO-DM-PLUS Ethernet COM kit**
- Optional Communication Interface: Ethernet, RS485 (use with meter for dynamic feed-in control), Alarm/Load manager relay, Remote ON/OFF
- Optional Communication Protocol: ModBus TCP (SunSpec), ModBus RTU (SunSpec), Aurora Protocol

**Environmental**
- Ambient temperature range: -25...+60°C / -13...140°F
- Ambient temperature derating: above 50°C / 122°F
- Relative humidity: 0...100% condensing
- Typical noise emission pressure: < 50 dB(A) @ 1 m
- Maximum operating altitude without derating: 2000 m / 6560 ft
- Classification of environmental pollution degree for the external environment: 3
- Environmental category: Outdoor

**Physical**
- Environmental protection degree: IP 65
- Cooling system: Natural
- Dimensions (H x W x D): 553 mm x 418 mm x 175 mm / 21.8" x 16.5" x 6.9"
- Weight: 15 kg / 33 lb
- Mounting system: Wall brackets
- Overvoltage category in conformity with IEC 62109-1: II (DC input) III (AC output)

**Safety**
- Isolation level: Transformerless (TL)
- Certifications: CE, RCM
- Safety and EMC standard: IEC/EN 62109-1, IEC/EN 62109-2, AS/NZS 4777.2, EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4, EN 61000-6-4, EN 61000-3-3, EN 61000-3-12

**Grid standard**
- Refer to "Update your inverter for new features" page on the FIMER Solar website to know which country standard are available for your inverter model.