

FIMER



Solar Inverter

UNO-DM-6.0-TL-PLUS-Q

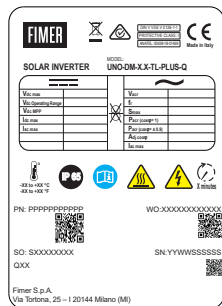
Quick Installation Guide

In addition to the information given below, it is mandatory to read and observe the safety information and installation instructions shown in the installation manual. The technical documentation and the interface and management software for the product are available on the website. The equipment must be used in accordance to what is described in this Quick Installation Guide. Otherwise, the protections guaranteed by the inverter may be affected.

**APPLY HERE
THE WIRELESS
IDENTIFICATION LABEL**

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.

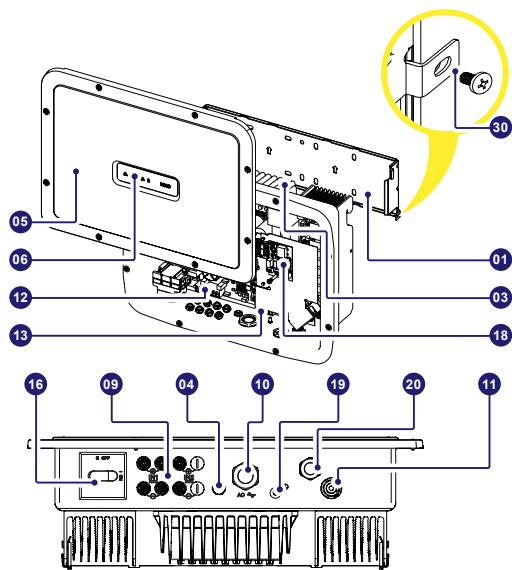
2. Models and Inverter Components

The inverter models referred to in this installation guide are listed below:

- Standard model UNO-DM-6.0-TL-PLUS-B-G-QU. Model equipped with Wireless communication(-B), AC connection with cable gland and terminal block (-G) and unbalanced input channels (-U).
- Model with "S" suffix UNO-DM-6.0-TL-PLUS-SB-G-QU. Models equipped with DC disconnecting switch (-S), Wireless communication (-B), AC connection with cable gland and terminal block (-G) and unbalanced input channels (-U).

Main components

- 01 Bracket
- 03 Heatsink
- 04 Anti-condensation valve
- 05 Front Cover
- 06 LED panel
- 09 DC Input Connectors
- 10 AC cable gland
- 11 Wireless antenna connector
- 12 DC Input terminal block
- 13 AC Output terminal block
- 16 DC disconnect switch (only -S models)
- 18 UNO-DM-COM KIT or UNO-DM-PLUS Ethernet COM kit board (optional)
- 19 External ground connection
- 20 Service cable gland
- 30 Locking Screw



3. Lifting and transporting

Transportation and relocation

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

Lifting

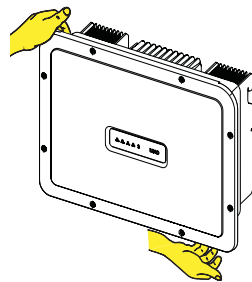
The means used for lifting must be suitable to bear the weight of the equipment.

Weight of the equipment components

Model	Weight
All models	20.5 kg / 45.2 lb

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.

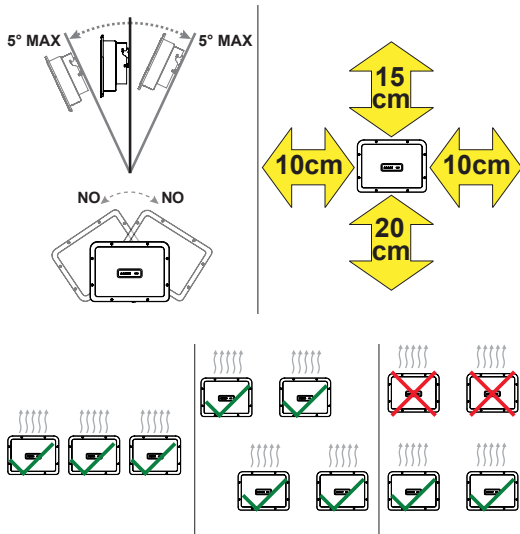


If you notice defects or deterioration, stop the operations and call the carrier, as well as inform FIMER Service immediately. Please keep the packaging in the event it has to be returned; the use of inadequate packaging will void the warranty. Always store the Quick Installation Guide, all the supplied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

4. Choice of the place of installation

Place and position of installation

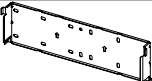








- Refer to the technical data for the verification of the environmental conditions to be met.
- Do not install the inverter where it is exposed to direct sunlight. If necessary, use protection that minimizes the exposure, especially for ambient temperatures above 40°C/104°F.
- Do not install in small 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.



NOTE – The final installation of the inverter must not compromise the access to any disconnection devices located outside.

NOTE – Refer to the warranty conditions to evaluate the possible exclusions related to an improper installation.

5. Supplied Component list

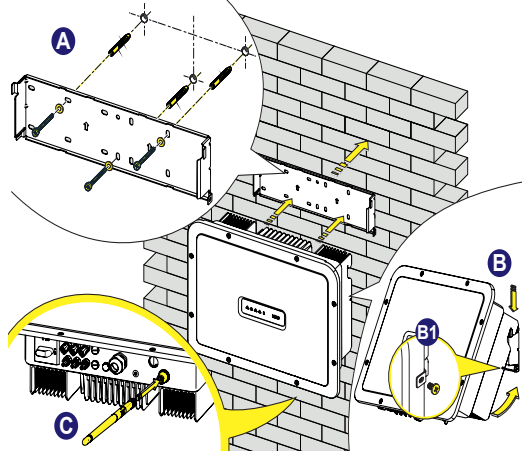
Components supplied with the inverter		Q.ty
	Bracket for wall fixing	1
	M25 Cable glands	1
	Wireless antenna	1
	Cable with faston isolated for the configuration of the input channels in parallel	1 + 1
	(Spare part) T20 screw for front cover	1
	M5x10 screw for the external ground connection	1
	M5 contact washers for the external ground connection	2
	T20 Wall bracket locking screws (to be used when lock springs 02 on the bracket are missing)	2
	Technical documentation	1

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:

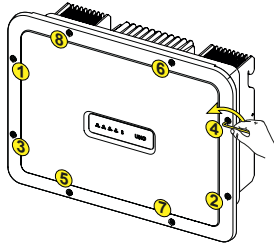
- Place the bracket (01) level on the wall and use it as a drilling template.
- The selection of the appropriate number and distribution of the anchors is the responsibility of the installer. The choice must be made according to the type of wall, frame or other type of support, and should be sized considering 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).

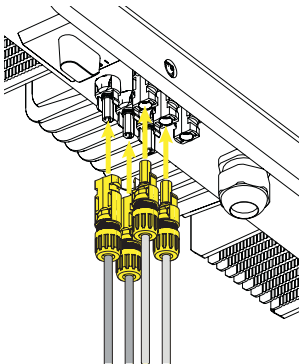
8. Input connection (DC) and input configurations

⚠ 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).

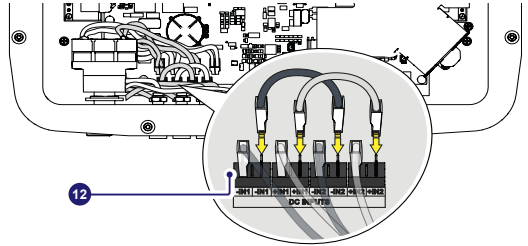
Configuring Input Mode to Independent (default configuration)

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".

Configuring Input Mode to Parallel

This configuration involves the use of the two input channels (MPPT) connected in parallel. This means that the jumpers (supplied) between the positive and negative poles of the two DC input channels (12) must be installed, and that the parallel 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

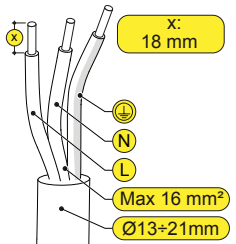
Protection switch under load (AC switch) and sizing of the line cable
To protect the AC connection line of the inverter, we recommend the installation of a protection device against overcurrent and earth leakages with the following features:

UNO-DM-5.0
UNO-DM-4.6
UNO-DM-4.0
UNO-DM-3.3
UNO-DM-3.0
UNO-DM-2.0
UNO-DM-1.2

Type	Circuit breaker with differential magnetic-thermal protection
Nominal voltage	230 Vac
Nominal current	40.0 A
Magnetic protection feature	B/C
Number of poles	2
Type of differential protection	A/AC
Differential sensitivity	300 mA
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.



Line conductor cross-section	Maximum length of the line conductor (m)
4 mm ²	8 m
6 mm ²	12 m
10 mm ²	20 m
16 mm ²	30 m

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

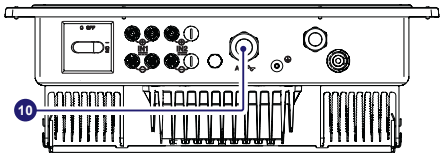
10. Output connection (AC)

⚠ 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. In any case, the earth connection of the inverter is mandatory.

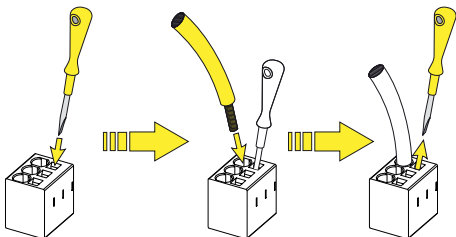
The connection of the network cable to the inverter is performed by means of the AC cable gland (10) and the dedicated AC output terminal block (13), by doing the following:

- Strip 18 mm of sheathing from the AC grid connection cables
- Plug the AC line cable into the inverter, passing it through the AC cable gland (10)



The procedure for opening the contacts of AC output terminal block (13) and tightening cables is as follows:

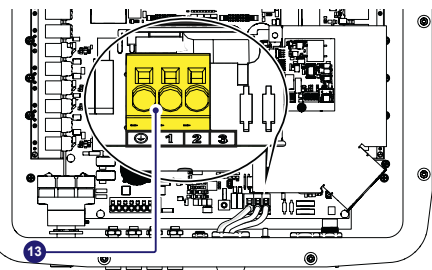
- 1) Insert a flat screwdriver in the slot behind the contacts until the clamp opens.
- 2) Insert the cable in the clamp with the screwdriver inserted in the slot.
- 3) Remove the screwdriver and check the tightness.



- Connect the protective earth (yellow-green) cable to the contact labelled with the ⚡ symbol on the terminal block (13).

⚠ WARNING – FIMER inverters should be earthed (PE) via the terminal with the protective earth label ⚡, using a cable with an appropriate cross-section of the conductor for the maximum ground fault current that the generating system might experience

- Connect the neutral cable (normally blue) to the terminal labelled with the number 1.
- Connect the phase cable to the terminal labelled with the number 2.



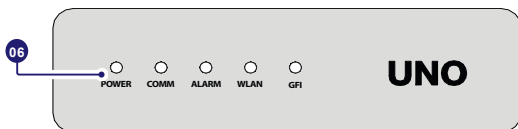
- Once the connection to the terminal block (13) is complete, screw in the cable gland firmly (tightening torque 5.0Nm) and check the tightness.

11. Instruments

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

LEDs (06)

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
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

SN WLAN: SSSSSSSSSS
 PN WLAN: PPP.PPPPP.PP
 MAC: XX:XX:XX:XX:XX:XX

Remove and apply on the Quick installation guide

1

SN Inverter: SSSSSSSSSS
 MAC: XX:XX:XX:XX:XX:XX
 PK: KKKK-KKKK-KKKK-KKKK

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.

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 network 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, 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: $PDC \times Plim$ 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" and the inverter will test the meter and the battery working and it will reboot at the finish of test phase.

- 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

UNO-DM-6.0-TL-PLUS-Q

Input	
Absolute maximum input voltage ($V_{max,abs}$)	600 V
Input activation voltage (V_{start})	200 V (adj. 120...350V)
DC input voltage operating range ($V_{d,omin}...V_{d,ocmax}$)	0.7x $V_{start}...580$ V (min 90 V)
Rated input DC voltage (V_{dc})	360 V
Rated input DC power (P_{dc})	6200 W
Number of independent MPPTs	2
Maximum input power for each MPPT ($P_{MPPTmax}$)	MPPT1: 4000 W / MPPT2: 3500W
DC input voltage range ($V_{MPPT\ min} \dots V_{MPPT\ max}$)	200...480 V
with parallel configuration of MPPT at P_{dc}	
DC power limitation with parallel configuration of MPPT	Linear derating from Max to 500W [480V≤VMPPT≤580V]
DC power limitation for each MPPT with independent configuration of MPPT at P_{dc} , max unbalance example	MPPT1: 4000 W [200V≤VMPPT≤480V] MPPT2: P _{dcr} -4000W [195V≤VMPPT≤480V] o 3500W [305V≤VMPPT≤480V] with no power on MPPT1
Max DC input current ($I_{dc,max}$) / for each MPPT ($I_{MPPTmax}$)	31.5 A / 20.0 (IN1) -11.5A (IN2)
Maximum return current (AC side vs DC side)	< 5 mA (In the event of a fault, limited by the external protection on the AC circuit)
Maximum short circuit current for each MPPT	50.0 A / 25.0 A
Number of input DC connection	2 (IN1) / 1 (IN2)
DC connection type	Quick fit PV connector ⁽¹⁾
Type of PV panels connected in input in accordance with Standard IEC 61730	Class A
Input protection	
Reverse polarity protection	Yes, from a current limited source
Input overvoltage protection for each MPPT - Varistors	Yes
Photovoltaic array insulation control	According to local standard
DC disconnect switch characteristics (version with DC disconnect switch)	600 V/25 A
Output	
AC connection type	Single phase
Nominal output AC power ($P_{ac}@cos\phi=1$)	6000 W
Maximum output AC power ($P_{ac,max}@cos\phi=1$)	6000 W
Maximum apparent power (S_{max})	6650 VA
Nominal output AC voltage (V_{ac})	230 V
Output AC voltage range ($V_{ac\ min}...V_{ac\ max}$)	180...264 Vac ⁽²⁾
Maximum AC output current ($I_{ac,max}$)	30.0 A
Maximum fault current	<40 A rms (100 ms)
Short circuit current contribution	40.0 A
Inrush current	Negligible
Nominal output frequency (f)	50 / 60 Hz ⁽⁴⁾
Output frequency range ($f_{min}...f_{max}$)	47...53 / 57...63 Hz ⁽⁴⁾
Nominal power factor and adjustability interval	> 0.995; 0.1 – 1 Over/Under excited
Total harmonic current distortion	< 3.5%
AC connections type	Screw terminal block, Cable Gland M32
Output Protection	
Anti-islanding protection	According to local standard
Maximum external AC overcurrent protection	40.0 A
Output overvoltage protection - Varistor	2 (L - N / L - PE)
Operational Performances	
Maximum efficiency (η_{max})	97.4%
Weighted efficiency (EURO/CEC)	97.0%/-
Power threshold of the power	8.0 W
Nighttime consumption	< 0.4 W
Communication	
Embedded Communication Interface	Wireless ⁽⁵⁾
Embedded Communication Protocol	ModBus TCP (SunSpec)
Commissioning tool	Web user interface, Aurora Manager Lite
Firmware Update Capabilities	Locally and remotely
Monitoring	Plant Portfolio Manager, Plant Viewer, Plant Viewer for Mobile ⁽⁷⁾
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 45°C/113°F
Relative humidity	0...100% condensing
Typical noise emission pressure	< 50 dB(A) @ 1 m ⁽⁹⁾
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)	418 mm x 553 mm x 180 mm/16.5" x 21.8" x 7.1"
Weight	20.5 kg / 45.2 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 ⁽⁸⁾ RCM
Safety class	I
Safety and EMC standard	EN 50178, IEC/EN 62109-1, IEC/EN 62109-2, AS/NZS 3100, EN 61000-6-1, EN 61000-6-3, EN 61000-3-11, EN 61000-3-12
Grid standard ⁽⁹⁾ (check your sales channel for availability)	CEI 0-21, DIN V VDE V 0126-1-1, G59/3, EN 50438 (not for all national appendices), RD 1699, ITC-BT-40, AS 4777, C10/11, IEC 61727, IEC 62116

1. Refer to the document "String inverter – Product Manual appendix" available at www.fimer.com to know the brand and the model of the quick fit connector.
 2. Functionality with unbalanced channels
 3. The AC voltage range may vary depending on specific country grid standard.
 4. The Frequency range may vary depending on specific country grid standard. CE, 50Hz only.
 5. As per IEEE 802.11 b/g/n standard.
 7. Plant Viewer per Mobile available remotely only, not for local commissioning.
 9. Further grid standard will be added, please refer to FIMER Solar page for further details.
 10. @ Pure sine wave condition.
11. Hereby, Fimer S.p.A. declares that the radio equipments (radio module combined with the inverter), to which this user manual refers, are in compliance with the Directive 2014/53/EU. The full text of the EU Declaration of Conformity is available at the following internet address: www.fimer.com

Note. The features that are not specifically mentioned in this data sheet are not included in the product



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For more information please contact your local FIMER representative or visit:

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