Installation and user manual

Rev. 3
20/03/2023

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1. About the document

1.1. Purpose of the document

This document is only valid for the infinergi device (refer to section 2.6 for supported models).

The document contains the information needed to perform the following tasks:

- Installation
- Setting up
- Use of the device
- Technical support
- Maintenance

Read this document carefully before use.

The information in this manual is subject to change over time. It's recommended to always have the latest version of the manual available at

https://infinergi.ithingszone.com/docs/Infinergi-Installation_and_user_manual_EN.pdf

or scan the following QR code.

1.2. Destination

This document is intended for qualified installation technicians and final users of the infinergi device.

1.3. Contact details

Manufacturer
SEMAR Srl
Via Sardegna 5
60022 Castelfidardo
Ancona, Italia

For technical assistance, please refer to section 9.

1.4. Language

The original version of the document is in the Italian language. All other versions are translations of the original document.

1.5. Revisions

VERSION	DATE	DESCRIPTION
1	24/10/2022	Initial document release
2	16/11/2022	Expanded abbreviations (1.8) Added INFINERGI-3T and INFINERGI-3U models to the available versions (2.6) Added RFID cards among optional accessories (2.7) Added section *Software update* (5.9)
3	20/03/2023	Added support to IVY METERING external Modbus meters (4.7) Added authorization mode configuration in OCPP (5.1.4) Expanded section *Errors and recovery* (9.1)

1.6. Used symbols

SYMBOLS	DESCRIPTION
	Dangerous voltage with risk of electrocution.
	General risk.
	Indicates an operation that can only be performed by qualified personnel.
	Indicates information on the completion of a procedure.

1.7. General indications

⚠ DANGER
Indicates a hazard with a high level of risk that, if not considered, will lead to death or serious injury.

⚠ WARNING
Indicates a hazard with a medium level of risk that, if not addressed, could result in death or serious injury.

⚠ ATTENTION
Indicates a hazard with a low level of risk that, if not considered, could lead to minor or moderate injury.

1.8. Abbreviations

ABBREVIATION	DEFINITION
AC	Alternating Current
AP	Access Point
BLE	Bluetooth Low Energy
CT	Current Transformer

DC	Direct Current
DLM	Dynamic Load Management
EMC	Electromagnetic Compatibility
EV	Electric Vehicle
GND	Ground
GPRS	General Packet Radio Service
ISM	Industrial, Scientific, and Medical
LCD	Liquid Crystal Display
LVD	Low Voltage Directive
MCB	Miniature Circuit Breaker
MID	Measuring Instruments Directive
OCPP	Open Charge Point Protocol
PC	Polycarbonates
PE	Protective Earth
RCBO	Residual Current circuit Breaker with Overcurrent protection
RCD	Residual Current Device
RDC-DD	Residual Direct Current – Detecting Device
RED	Radio Equipment Directive
RFID	Radiofrequency identification
RoHS	Restriction of Hazardous Substances Directive
RTU	Remote Terminal Unit
SIM	Subscriber Identity Module
UTP	Unshielded Twisted Pair
WEEE	Waste of Electric and Electronic Equipment

Not all symbols or signal words may be present in this document.

1.9.   Orientation agreements
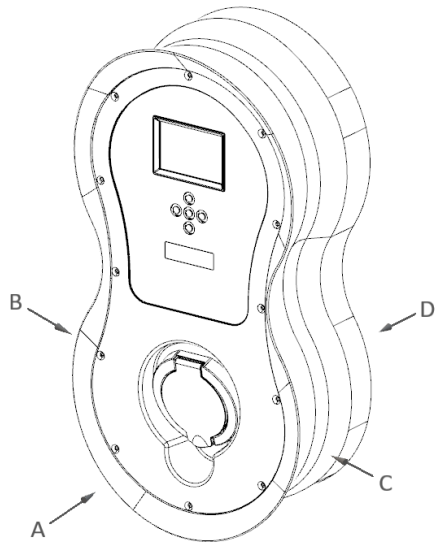
A. Front side
B. Left side
C. Right side
D. Rear side
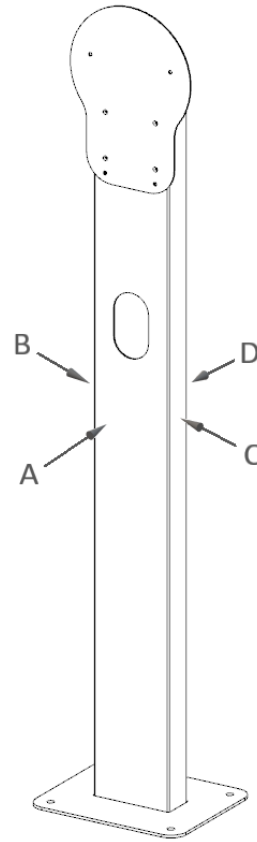
2. Description

2.1. Description of the product

Infinergi is an AC-type charging station to supply energy to an electric vehicle.

Charging is performed using specific connectors between the electric vehicle and the device, as per mode 3 defined in IEC 61851-1.

Infinergi can be equipped with optional accessories as described in 2.7.

> **i** Infinergi does not support the room ventilation requested by the vehicle.
> If the vehicle requests ventilation, the device detects it and charging is paused.

2.2. Intended use

The infinergi device is only intended for AC charging of electric vehicles.

The infinergi charging station supports every electric and hybrid vehicle with a type 2 charging socket according to IEC 62196-2 and with an AC charging system on board that complies with IEC 61851.

> **i** The infinergi device can be used in private or semi-public areas.
> The enclosure and pedestal (optional) are certified according to IEC 61439-7.

⚠ WARNING
Tampering and improper use are strictly prohibited and may cause serious damage to property, people, and the environment. The manufacturer is not responsible for such damage caused by improper use of the device.

2.3. Technical specifications

2.3.1. Features

Mounting	Indoor and outdoor wall or floor with pedestal (optional)
Charging modes	Mode 3 (as specified in IEC 61851-1 standard)
Type of connection	Case B (untethered versions) or case C (tethered versions)
Vehicle connection type	Type 2 (IEC 62196 standard): 5m cable (tethered versions) or socket with locking system (untethered versions)
Display (optional)	3.5'' color LCD
Buttons	Up to five (depending on the device version)
LED	Multicolor on the front panel (backlit "infinergi" logo)
RFID (optional)	ISO/IEC 14443
Protections	Protection against DC leakage currents ≥ 6mA Overvoltage protection category III (4kV) Overcurrent protection Protection against earth fault (TN/TT systems) Over temperature protection Hardware failure protection

Protection class	Class I
Compliance	CE certification IEC 61851-1 IEC 61439-7 IEC 62196 IEC 62955
European Directives	2014/30/EU (EMC) 2014/35/EU (LVD) 2014/53/EU (RED) 2011/65/EU (RoHS)
Warranty	2 years

2.3.2. Electrical specifications

Maximum output power	7 kW (single-phase) / 22 kW (three-phase)
Supply voltage	230V AC (single-phase) / 400V AC (three-phase) ± 10%
Network frequency	50Hz
Maximum charging current	32A per phase
Standby consumption	Minimum approx. 2W Maximum approx. 3.6W (depending on the equipment and settings of the device)
Earthing systems	TT / TN-C / TN-S / TN-CS / IT
Connectivity	WiFi 802.11 b/g/n 2.4 GHz Bluetooth 4.2 and BLE ISM 868 MHz GPRS with internal SIM slot (optional) RS485 Modbus RTU serial interface (optional)
Current sensor	Up to three wired CTs for dynamic power management (optional)

2.3.3. Mechanical specifications

Dimensions	Without pedestal: 266 (W) x 498 (H) x 158 (D) With pedestal: 300 (W) x 1460 (H) x 315 (D)
Protection degree	IP55
Degree of impact resistance	IK08
Material	Case: PC, RAL 9006 Front panel: PC, RAL 7035 Pedestal (option): galvanized and painted steel, RAL 9005
Weight	Infinergi single-phase tethered (case C): 5 kg Infinergi three-phase tethered (case C): 6 kg Infinergi single-phase untethered (case B): 4 kg Infinergi three-phase untethered (case B): 4 kg Pedestal: 15kg
Operating temperature	From -25°C to +40°C (without power limitation)

2.4. Labels

2.4.1. Label with product data

The infinergi identification label is located on the bottom curved side of the enclosure. The printed data, illustrated in the sided example label, are:

- Charging station classification according to IEC 61851-1
- Device branding
- Product model
- Part number
- Production batch
- Supply voltage
- Input/output current
- Protection degrees from atmospheric agents and impacts
- Operating temperature range
- Logo and references of the manufacturer or distributor
- CE mark
- WEEE logo
- QR code with product identification data
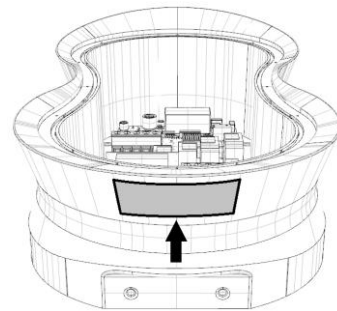
2.4.2. Label with access data

Inside infinergi, on the back side of the removable front panel, there is a label with the user access data. The printed information, illustrated in the sided label example, are:

- Security key to access the device's WiFi network
- Serial number, to be used also as a password for accessing the web interface (section 6.1.2)
- QR code with device data
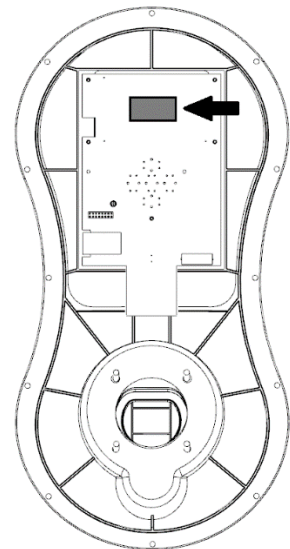
2.4.3. Labels on the packaging

The device packaging has the following labels.

A. Label with product code
B. Label with serial number
C. Label with access code (on quick installation guide)

2.5. Appearance and components
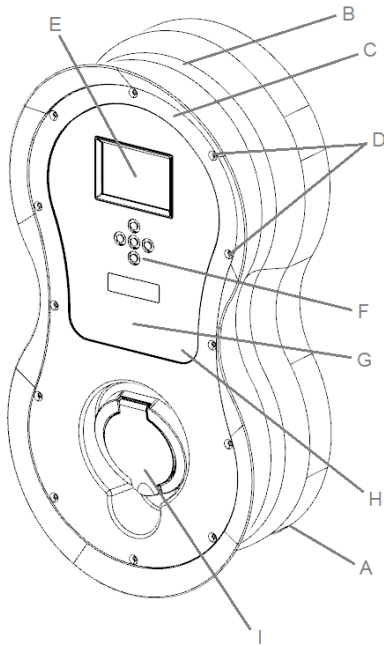
A. Enclosure
B. Cable winding seat (case C)
C. Removable panel
D. Removable panel screws
E. LCD (optional)
F. Multi-function key or navigation keys (optional)
G. Multicolor status LED area
H. RFID reading zone (optional)
I. Charging socket (case B) or idle plug location (case C)

2.6. Device versions

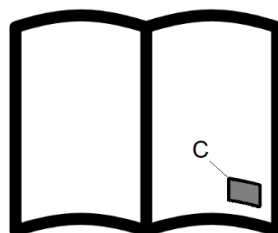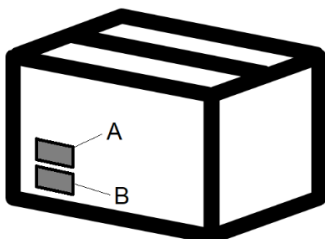| MODEL	NOMINAL POWER	OUTPUT
INFINERGI-1T	7.4 kW	Integrated cable (5m) with type 2 plug
INFINERGI-1U	7.4 kW	Type 2 socket for external cable
INFINERGI-1T-DR	7.4 kW	Integrated cable (5m) with type 2 plug
INFINERGI-1U-DR	7.4 kW	Type 2 socket for external cable
INFINERGI-3T	22 kW	Integrated cable (5m) with type 2 plug
INFINERGI-3U	22 kW	Type 2 socket for external cable
INFINERGI-3T-DR	22 kW	Integrated cable (5m) with type 2 plug
INFINERGI-3U-DR	22 kW	Type 2 socket for external cable

Models with -DR suffix are equipped with:
- 3.5'' LCD color display + 5 navigation keys
- RFID reader
- RS485 terminal block for MID-certified Modbus RTU meters

2.7. Optional accessories

The device can be optionally equipped with:
- GPRS internal module + SIM slot
- Up to three CTs for implementation of DLM functionality and/or monitoring of energy from renewable sources (photovoltaic/wind power plant)
- Single or dual mounting pedestal for floor installation
- Single or three-phase male to female cable, 5m, type 2 (IEC 62196)

For infinergi models equipped with an RFID reader, it is possible to separately purchase cards (code 09300001) to be used for charge authentication (5.7).
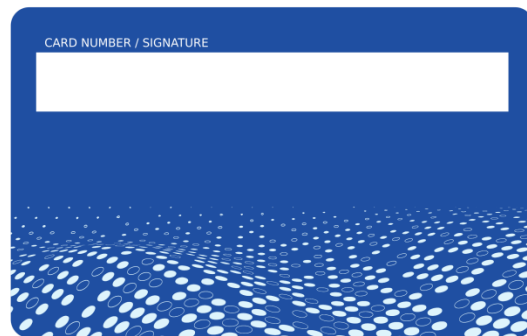
2.8. Material supplied in the packaging

2.8.1. Infinergi packaging
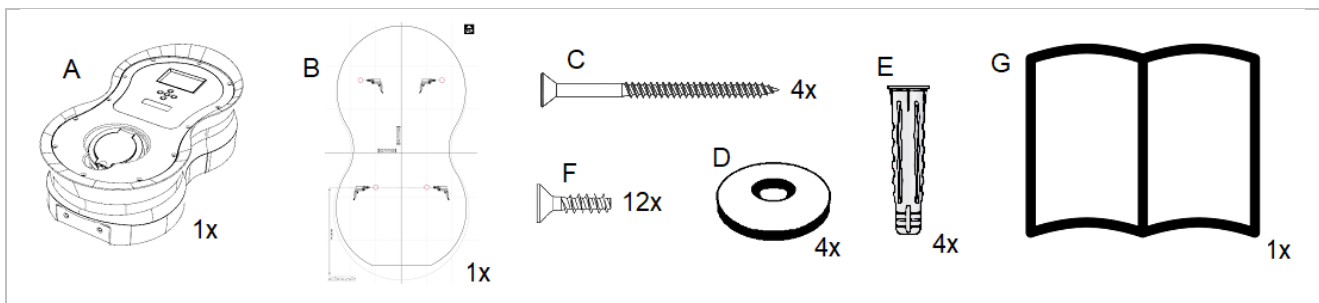
A. Infinergi box
B. Wall mounting template
C. Pozi type screws for wall mounting Ø 5.5 x 65 mm
D. Sealing washers Ø 16 mm
E. Wall plugs Ø 8 x 40 mm
F. Pozi type screws for front panel Ø 3.5 x 10 mm
G. Quick installation guide

2.8.2. Pedestal packaging (optional)

Option 1 (Single version – code 07063120)

Option 2 (Double version – code 07063121)	(component diagram)
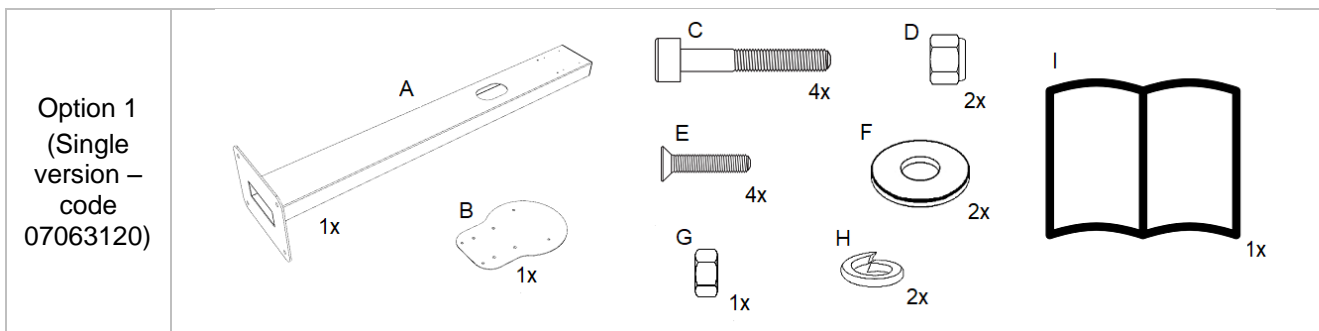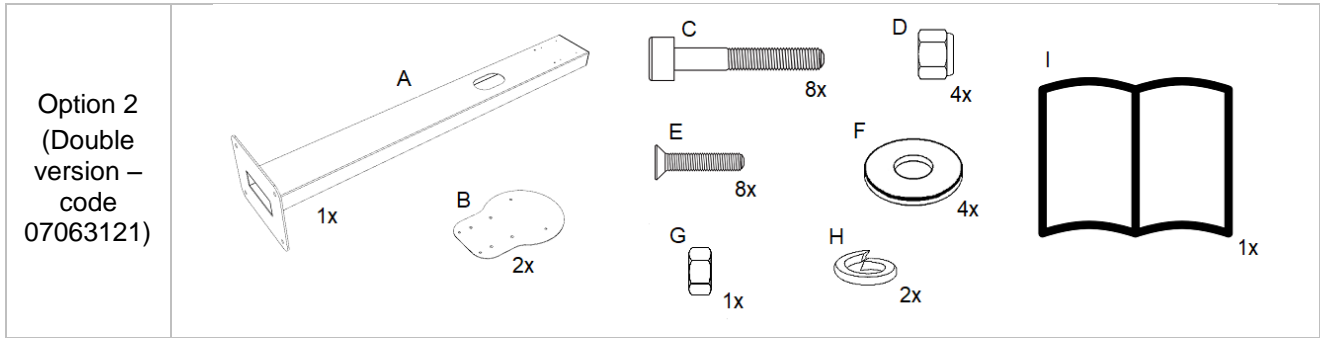
A. Pedestal for one or two units
B. Mounting plate
C. M5 x 35 mm cylinder head screws with hexagonal insert
D. Self-locking nut M5
E. M4 x 10mm countersunk head screws with Phillips insert
F. M5 washer Ø 10 mm
G. M6 nut
H. M6 grower washers Ø 11.8 mm
I. Quick installation guide

3.   Security

⚠ DANGER
Do not use the infinergi charging station if at least one of the following conditions occurs: • The enclosure is damaged • The charging cable or socket is damaged • A fire has occurred near the device • There is water inside the device • A malfunction is detected and reported by the device itself

⚠ PERICOLO
Shock hazard. Do never operate on a powered device until it is properly closed inside its enclosure.

⚠ WARNING
Infinergi ensures that externally accessible connector or socket contacts are never live unless an electrical vehicle is connected, according to standards. In the event of damage to the equipment, this protection may be lost. It is always recommended that you carry out a visual inspection and check your equipment for any signs of damage before using it (see section 9).

⚠ WARNING
Do not use non-certified cables, extensions, or adapters that alter the design of the charging connector. Keep out of reach of children.

⚠ ATTENTION
It is the responsibility of the owner or user to use the device according to common sense: • Follow the instructions in this document • Do not use the charging station incorrectly or excessively. • Do not make any changes to the device • Identify the appropriate technical personnel to carry out the installation and maintenance of the device

Infinergi charging station can be connected to a wireless local network using a WiFi connection.

It is the responsibility of the owner to ensure a secure connection to protect against unwanted access (e.g. password security, encryption, firewall, antivirus, or other).

4. Installation

Infinergi can be installed either on the wall or the dedicated pedestal (optional).

The device is compatible with the following pedestals:
- 07063120 – single unit mounting pedestal
- 07063121 – double unit mounting pedestal

⚠ DANGER
The device must be connected to the mains.   To avoid the risk of electric shock, follow the procedures described in the current section.

⚠ WARNING
The installation of the device must be carried out by qualified technical personnel only.   A correct installation guarantees the safe use of the device.   The manufacturer is not responsible for things or people damage caused by incorrect installation.

4.1. Place of installation

⚠ DANGER
Infinergi must not be installed: • in explosion risk places   • in places where flammable material is present   • near crosswalk places or escape paths   • in places where collisions can damage the device due to the object's movement

Find a suitable place where infinergi can be installed, considering the following tips.

- Choose ventilated places for indoor installation.
- The outdoor installation must only be done in good weather conditions. Do not install the device in places exposed directly to sunlight and bad weather to reduce the device's deterioration. If it is not possible to install the device in protected environments, consider the use of a canopy or a cover.
- The device is designed to be installed on a vertical surface.
- The pedestal installation (optional) requires a level and horizontal solid surface where the base plate can be fixed.

Infinergi can be connected to a mobile (optional) or WiFi network.
If you want to use this feature, choose a place with a good radio signal level.
If one or more CT and/or RS485 devices must be wired, choose a place where cable wiring is easy.

4.2. Wiring specifications

Infinergi must be installed in TT, TN-C, TN-S, TN-CS, or IT earthing systems.
Use a power cable with the following features:

|	
Cable type	Multipolar 3G6 (single-phase) o 5G6 (three-phase)
Wires nominal section	L1, (L2, L3), N, PE: 6mm^2
Wires fastening	Screw terminal block
Stripping length	About 10mm

ℹ️ At the discretion of the installer, it is possible to use smaller section cables when the power to be delivered is lower than the rated one, configuring the device during the first installation procedure (section 4.10).

Depending on the device version, the output terminal block is connected:

- To the charging cable terminals (case C)
- To the front panel socket terminals (case B)

The removable front panel must be connected to the main electronic board using the flat data cable (A) supplied with the device.
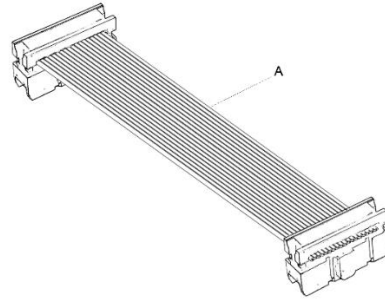
⚠ WARNING
Do never connect or disconnect the data cable when the device is turned on to avoid to damage the electronic boards.
Disconnect the data cable connector during open panel operations. Do not leave the panel hanging by the data cable.
In the case of B versions, the front panel remains hung through the cables connected to the socket and the locking device. Do not disconnect or damage cables during assembly.
Do not make changes to the wired cables inside the box. Tampering can cause serious damage to things or people.

4.3. Electrical system setup

Infinergi charging station integrates a 6mA DC leakage current detection device (RDC-DD). This is constantly monitored during a charge to break the power delivery if a fault occurs, as required by the IEC 62955 standard.

For each appliance installed, the following devices must be used:

1. A type A 30mA RCD for AC leakage current protection. The nominal RCD current must be at least 125% of the charger's rated current.
2. An upstream type C MCB for short circuit protection. The rated current of the circuit breaker must be a maximum of 125% of the charger's rated current. For IT system installations, use insulation monitoring devices and protection devices according to IEC 60364-4-41 standard.

ℹ️ For example, with a 7.4KW (32A) single-phase charging station, the RCD must tolerate at least 40A and the MCB trip current must be a maximum of 40A.
The devices (1) and (2) can be combined in a single RCBO.

⚠ WARNING
⚠ Do not connect more than one charging station to the same RCD+MCB or RCBO device.

The following diagram shows an example of a connection with an MCB and an RCD in a three-phase TT / TN system.

17
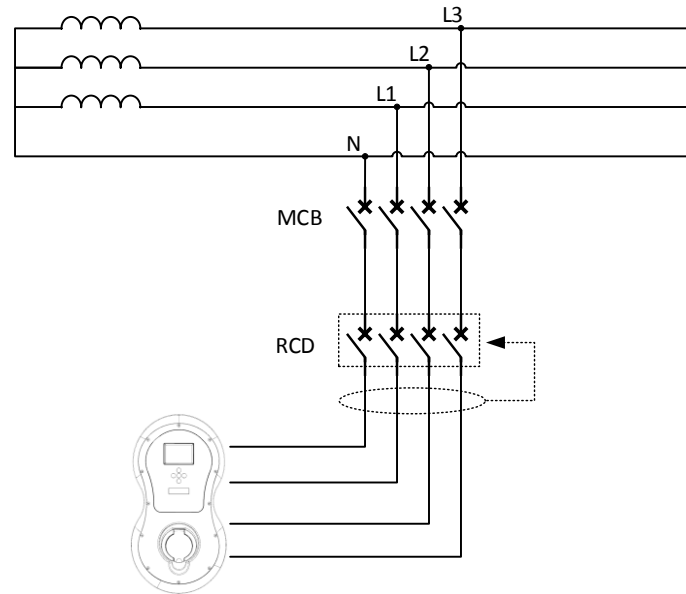
Infinergi tests the integrated RDC-DD device before each charge.

Do periodical manual tests on the appliance upstream RCD differential switch.

4.4. Tools needed for installation

- Infinergi packaging included hardware (section 2.8.1)
- Drill and Ø 8mm wall drill bit and conical stepped bit with cable gland diameter
- Pen or pencil
- Level
- Meterstick
- Crosshead screwdriver and optionally electrical screwdriver
- Flat screwdriver
- Electrician scissors
- Mains cable gland with the appropriate diameter and locking wrenches

It is recommended to use a long mounting thread cable gland to fix the mains cable, for example:

Cembre – 1901.x series

Elektrozubehor – TEC-S xx L series

Essentra – SR 1704 (long mounting thread) series

For pedestal installations (optional), then:

- Pedestal packaging included hardware (section 2.8.2)
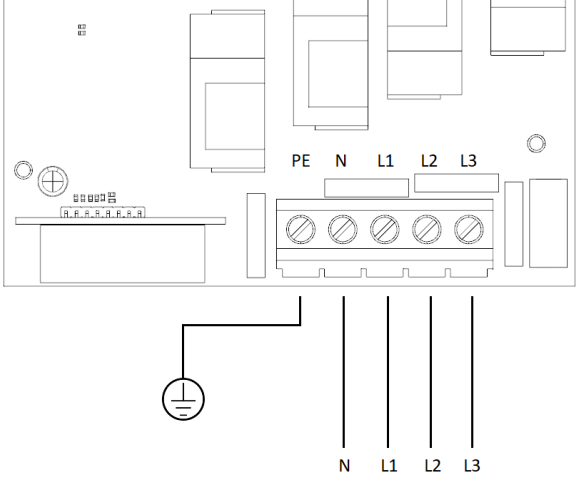- Ground fixing screws and plugs, to be chosen depending on the mounting surface (max Ø 12 mm)
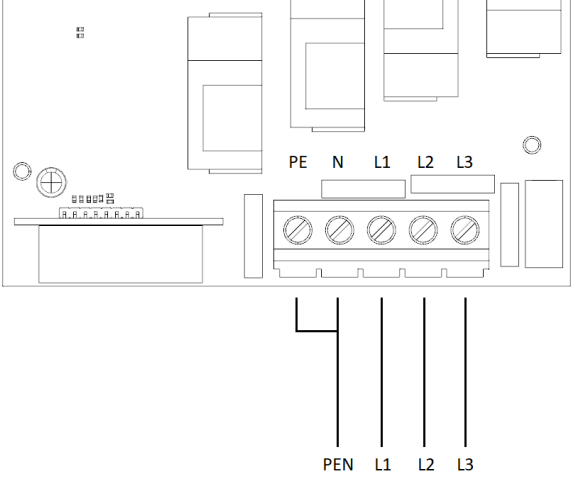- 4 mm hex key
- 8 mm wrench
- 10 mm wrench
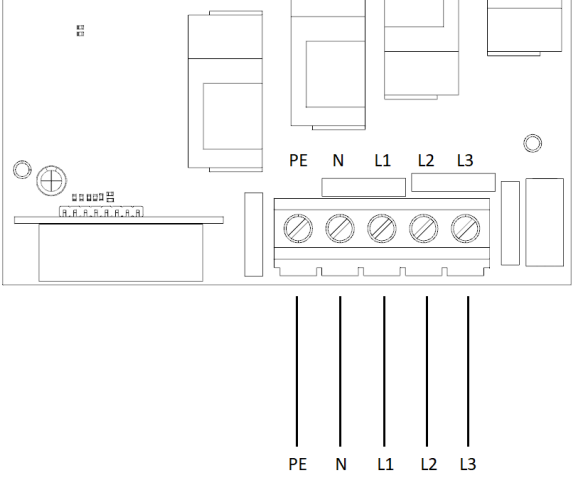
To use optional features, then:

- CT and any additional cable gland, in case of use of DLM functionality
- Nano SIM card of the network operation, in case of using a GPRS module
- A supported Modbus meter, wiring, and cable gland, in case of using an external meter

4.5. Grid connection

⚠ DANGER
Check that the system cables are not energized before handling.

Connection diagram for TT systems. ℹ On single-phase systems, L2 and L3 terminal blocks are not present.	
Connection diagram for TN-C systems. ℹ On single-phase systems, L2 and L3 terminal blocks are not present.	
Connection diagram for TN-S and TN-CS systems. ℹ On single-phase systems, L2 and L3 terminal blocks are not present.	

Connection diagram for IT systems.

In a three-phase IT system, infinergi can work only with a star point wire, to be connected to the terminal block neutral point (N).

⚠WARNING
⚡ Use insulation and protection monitoring devices as specified in IEC 60364-4-41 standard.

ℹ️ On single-phase systems, L2 and L3 terminal blocks are not present.

4.6.   CT connection

⚠ DANGER
⚡ The CT connection must be done only after the disconnection of the charging station from the mains.

⚠ WARNING
👷 The operation must be carried out only by qualified technical personnel. The charging station provides a CT dedicated spring terminal block, shrouded by electronic components. Be careful and do not use tools that could damage them.

Infinergi can optionally be equipped with one or more CTs for DLM functionality (section 5.3).

A CT is a clamp to be installed around an electric cable to make a non-invasive measurement of the current flowing inside it.

Up to three CTs can be connected to infinergi.

To ensure correct operation, they must be installed according to the following configuration:

- Single-phase versions: only one CT downstream to the user appliance electric meter;
- Three-phase versions: three CTs, one per phase, downstream to the user appliance electric meter.

ℹ️ Each infinergi CT can measure up to 100A AC currents.

Use only packaging-provided CTs or specific optional CTs to ensure the correct operation of advanced features.

The optional CT part number is the following:
- 08200015 – split-core CT

The CT, equipped with five meters length cable, must be clamped only on the line cable coming from the upstream meter, respecting the direction of the arrow marked on the top side, as shown in the figure.

The neutral cable can be used instead the line one, but the arrow direction of the CT must be inverted.

A wrong installation will cause unexpected behavior of the DLM functionality.

CT connection operations are shown below.

1. Unscrew the 12 screws of the front panel and disconnect the cable data connector.
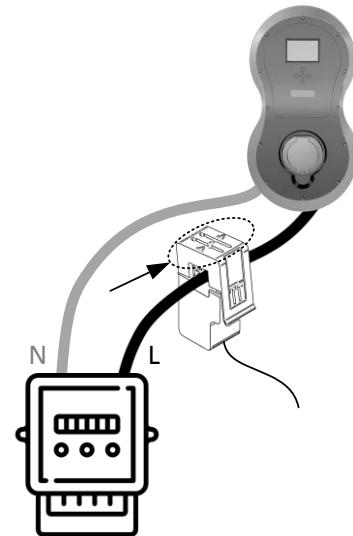2. Drill the box in the dedicated area and install a cable gland with a suitable section (see section 4.9.1).
3. Insert the CT cables in the cable gland and connect the wires to the terminal block inserting the terminals into the holes. The black terminal is the negative pedestal and the red terminal is the positive one. Refer to the figure.
4. Tighten the cable gland and mount again the front panel, connecting back to the data cable.
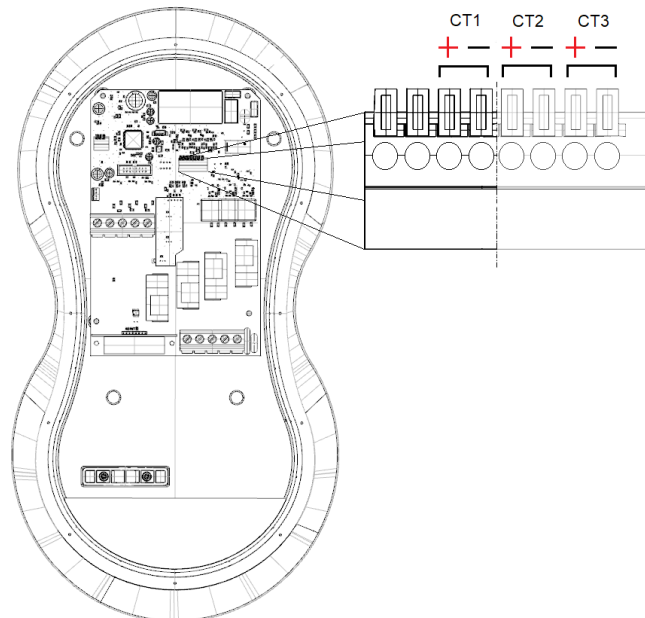
For single-phase infinergi versions, the CT1 input is reserved for the CT installed downstream of the user appliance meter. The terminal block has 4 poles.

For three-phase infinergi versions, CT1, CT2, and CT3 inputs are reserved for the relative phase CT installed downstream of the user appliance meter. The terminal block has 8 poles.

⚠ ATTENTION
If the distance between the installation site and the pick-up point is greater than the CT integrated cable, it can be extended by joining another one. Do not exceed 100 meters in total length.
Use only UTP-type cables such as Ethernet cables, at least category CAT5e, to avoid possible interference that could negatively affect current measurements.

An Ethernet cable contains 8 paired wires: use one of four pairs. If multiple CTs are used, they can be joined with the other pairs of the same Ethernet cable.

The following diagram shows a CT connection example.
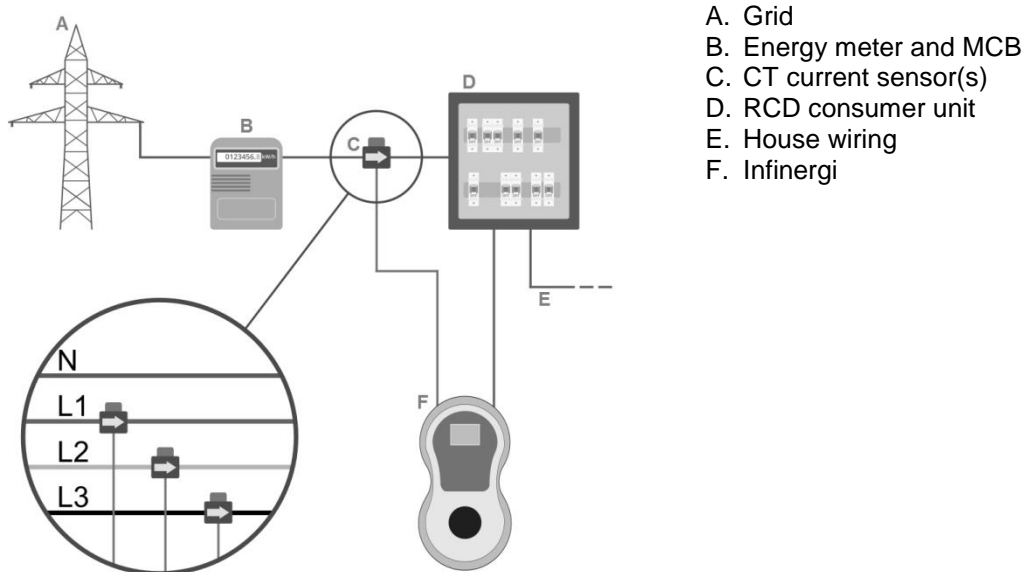
A. Grid
B. Energy meter and MCB
C. CT current sensor(s)
D. RCD consumer unit
E. House wiring
F. Infinergi

4.7. MID-certified Modbus meter connection

Some infinergi versions are equipped with a terminal block to connect an external MID-certified meter using an RS485 serial interface (Modbus RTU).
See section 5.2 to configure it.

The infinergi device is compatible with the following MID meters

- Carlo Gavazzi EM111 (single-phase)
- Carlo Gavazzi EM340 (three-phase)
- LUMEL NMID30-2 (single-phase and three-phase)
- Eastron SDM230 (single-phase)
- Eastron SDM72D (three-phase)
- IVY EM118090[1] (single-phase)
- IVY EM519033[1] (three-phase)
- IVY DTS353F-2[1] (three-phase)

⚠ ATTENTION
The listed meters are ready to be used with infinergi. Do not change the Modbus communication settings, otherwise, compatibility with the charging station will be lost.

ℹ️ Each charging station supports only one external MID meter, be it single-phase or three-phase.

The procedure for connecting the external device is described below.

⚠ DANGER

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[1] Requires firmware versions 2.1.0 or newer.

The connection of the RS485 data cable must only be done after disconnecting the device from the mains.

⚠ WARNING

The operation must be done only by qualified technical personnel.

The charging station contains a dedicated terminal block for connecting the RS485 data cable, surrounded by electronic components. Be careful during operations and do not use tools that could damage them.

⚠ ATTENTION

The RS485 data cable must be inserted in a waterproof cable gland to maintain the IP degree of the device. See section 4.9.1 for more information.

The RS485 interface for Modbus meters consists of a 3-pole spring terminal block (D+, D-, and GND). Use a shielded twisted pair cable with wires having a section between 0.2 and 0.5 mm^2, with the terminals stripped approximately 10mm, as shown on the side.

Connect the shield to the GND pole of the terminal block.
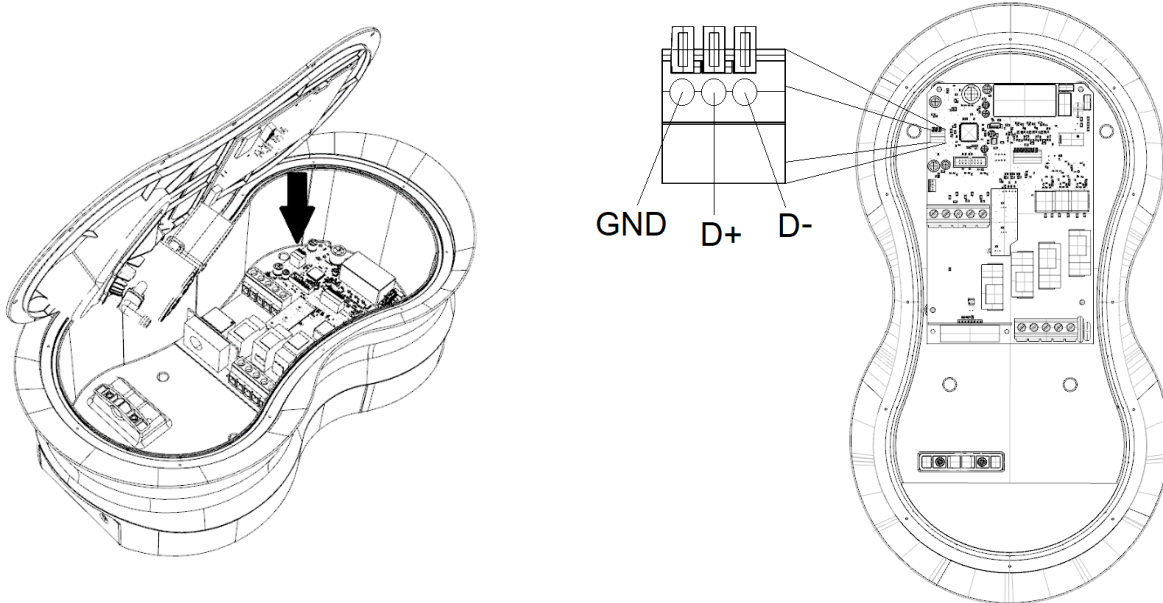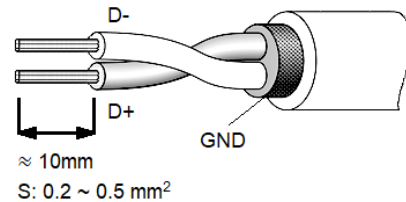
1. Unscrew the 12 screws of the front panel and disconnect the cable data connector. The RS485 interface terminal block is located on the electronic board inside the box, at the point indicated above.
2. Drill the box in the dedicated area and install a cable gland with a suitable section (see section 4.9.1).
3. Insert the cable for the energy meter in the cable gland and connect it to the infinergi terminal block by inserting the terminals into the holes, following the indications shown above for the wiring. To remove the terminals, press the relevant orange levers fully and slide out the cables.
4. Tighten the cable gland and mount again the front panel, connecting back to the data cable.
5. Connect the other end of the RS485 cable to the energy meter and complete the installation by connecting the power cables.
6. Power on the device via the main switch upstream and configure the energy meter in the device settings (see section 5.2). Check that the external meter is working correctly.

Depending on the meter chosen, the wiring may vary. Follow the connection instructions in the meter's package.

4.8.   GPRS expansion module installation

Some infinergi versions are equipped with a module that integrates a cellular GPRS interface for Internet connection. On infinergi models that miss it, is possible to install this module by purchasing it separately.

This section is dedicated only to users that want to purchase the module separately.

To use the cellular connectivity feature, you need a nano-SIM with an active network data connection
See section 5.8.2 for configuration parameters.

⚠ DANGER
The module must be installed only when the charging station has been disconnected from the grid.

The expansion module must be inserted into the dedicated connector on the front panel electronic board, following the procedure illustrated below.
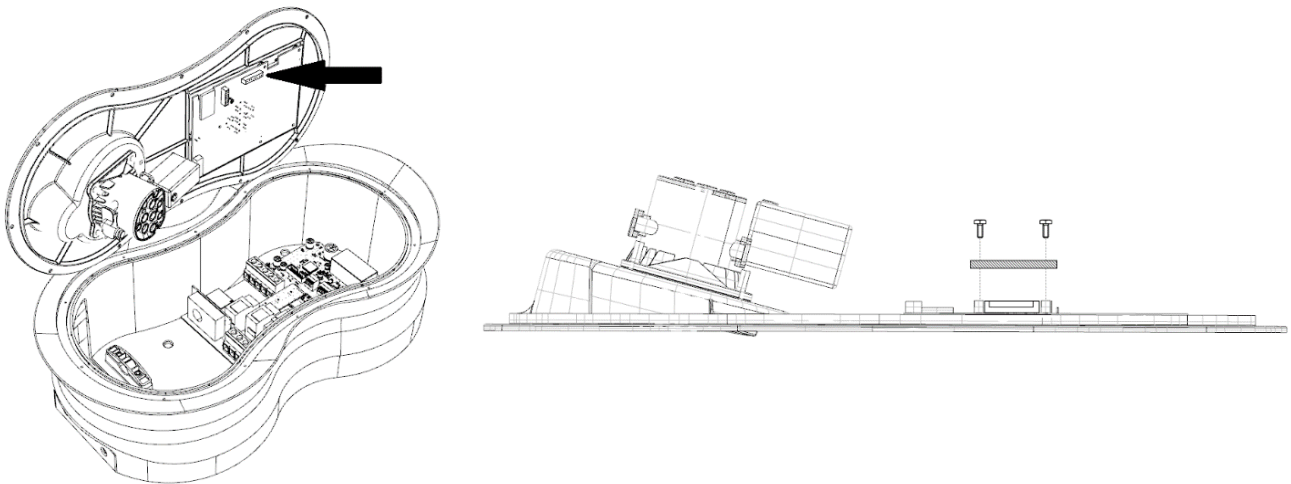
1. Remove the front panel by screwing off the 12 screws and disconnecting the flat data cable connector.
2. Fit the expansion module on the dedicated connector and screw the supplied screws on the dedicated stands, as shown in the above figure
3. Unlock the nano-SIM holder metallic shell sliding it as indicated by the "open" (A) sign.
4. Lift the metallic shell.
5. Place the SIM as indicated in the figure, with metallic contacts on the bottom.
6. Pull down the metallic shell.
7. Unlock the nano-SIM holder metallic shell sliding it as indicated by the "lock" (B) sign.

Nano-SIM
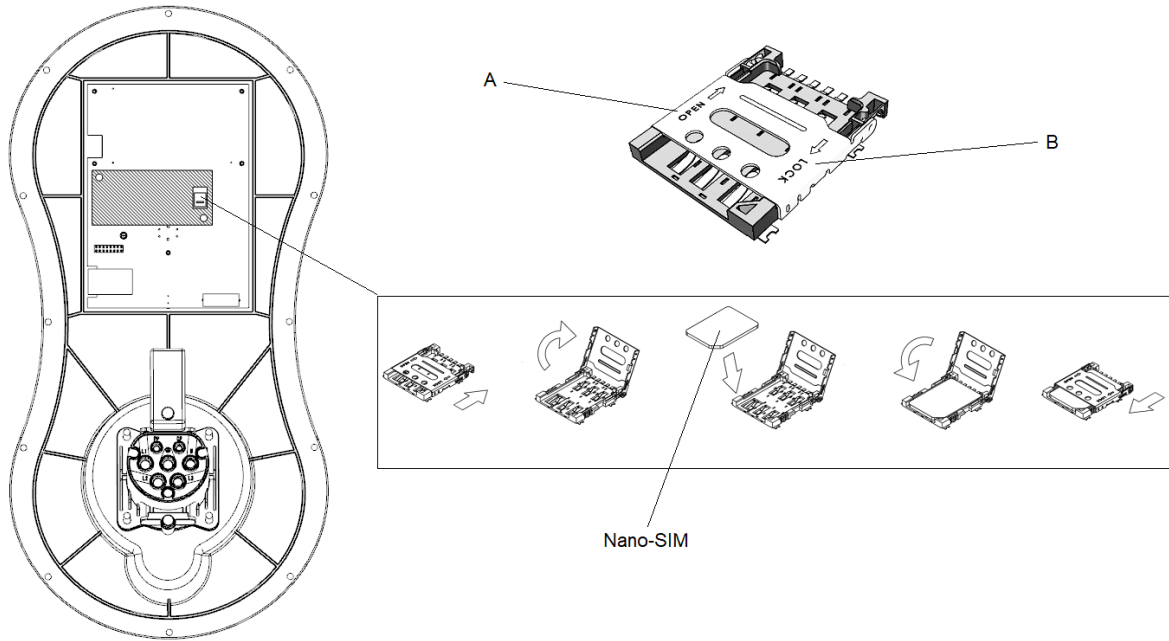
8. Stick the supplied antenna (C)on the plastic panel as indicated.

9. Connect the antenna cable to the dedicated module connector (D).

10. Refit the front panel connecting the flat data cable between the two electronic boards.
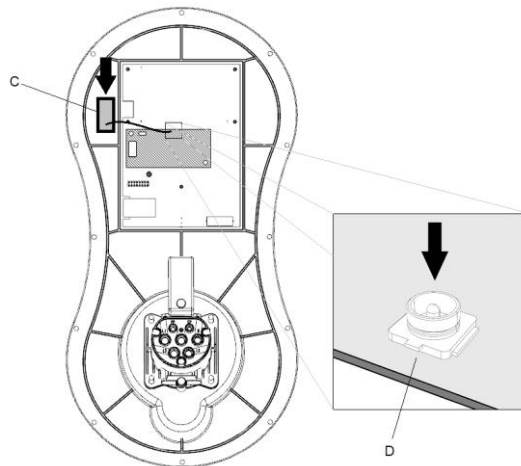
4.9. Mounting the device

⚠ DANGER
Make sure that the electrical system has been made according to the guidelines of sections 4.2 and 4.3. Before proceeding, make sure that the interested cables are disconnected from the grid checking the upstream circuit breaker (RCD, MCB, or RCBO).

⚠ ATTENTION
Make sure that the selected cable glands are suitable for the diameter of the power cable. Use only the hardware enclosed in the packaging. Failure to observe these guidelines can compromise the IP rating of infinergi.

4.9.1. Wall mount

1. Open the infinergi package and fix the enclosed template to the selected wall. The best mounting height of the lower holes is 1.15m from the floor. ℹ️ Use a level to properly mount the device.	 ≈ 1.15m
2. Drill the wall with a Ø8 mm bit as indicated on the template and insert the wall plugs included in the package into the holes.	
3. Remove infinergi from its packaging and lift the front panel loosening the 2 screws (A). **⚠ ATTENTION** Be careful to keep the sealing O-ring (B) on its seat. **⚠ ATTENTION** When the panel is open, the device's electronic boards are visible. Since they are electrostatic discharge sensitive, be careful during handling and wear protective devices to prevent damage.	
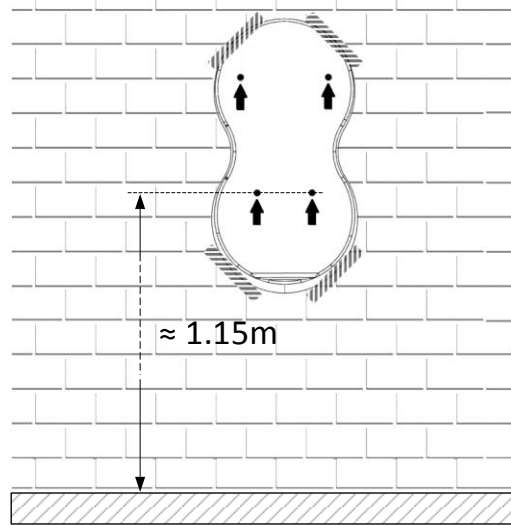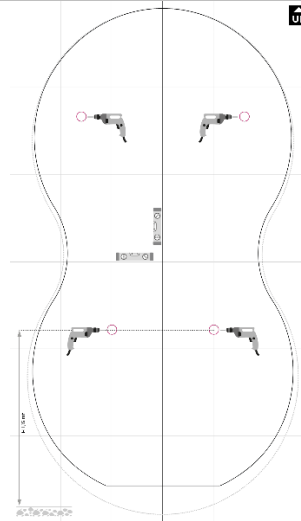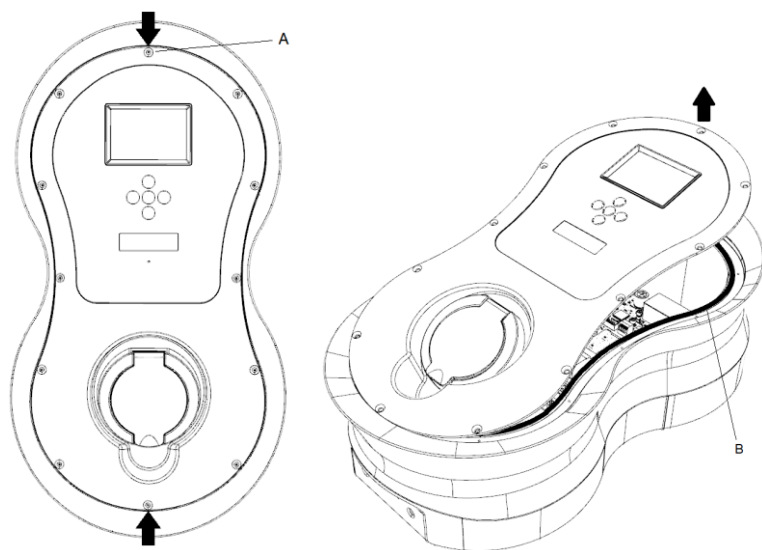
4. Disconnect the flat ribbon cable and take the panel apart. **⚠ ATTENTION** In untethered versions (case B), the panel remains connected to the main board with the socket wires. Do not disconnect them and pull the panel aside protecting it to facilitate the mounting procedure.	
5. Using a stepped conical drill bit or a crown drill bit, make a hole on the right side of the bottom of the box (A) to mount a cable gland for the power cable entry. Use one of the cable glands suggested in section 4.4 or equivalent. **⚠ ATTENTION** In tethered versions (case C) take care to not damage the assembled charging cable. A wrong cable gland installation can cause the loss of the device's IP rating.	
6. (Optional) Drill another hole on the bottom of the box to insert a second cable gland of CT or RS232 cables, if any. On infinergi untethered versions (case B), use the blind hole on the left as a guide. On infinergi tethered versions (case B) drill the hole between the mains cable gland and the charging cable gland. It is possible to use only the mains cable gland to insert the serial communication cable; in this case, make sure that its tightening preserves the device's IP rating.	(See sections 4.6 and 4.8 for connections)
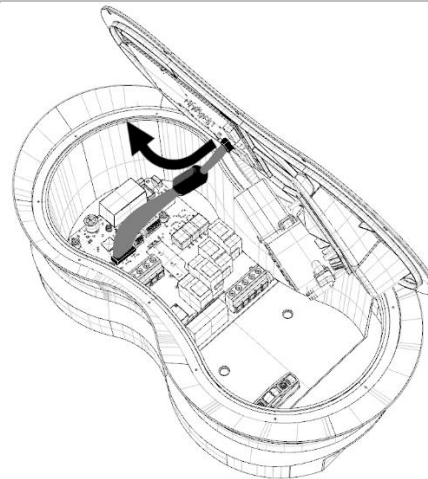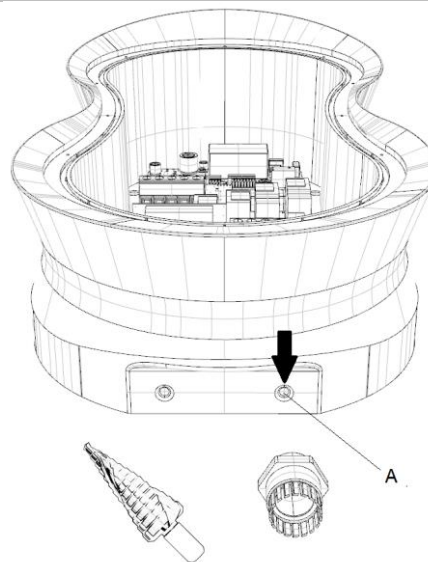
infinergi

7. Fix the box on the wall using the four screws by inserting the sealing washers.	

⚠ ATTENTION

The sealing washers are needed to maintain the IP rating of the device.

Make sure that the washers are oriented with the rubber side (A) towards the plastic, as shown in the figure.

Be careful not to damage the electronic board during assembly.

⚠ ATTENTION

Use only the screws and the washers included in the package.
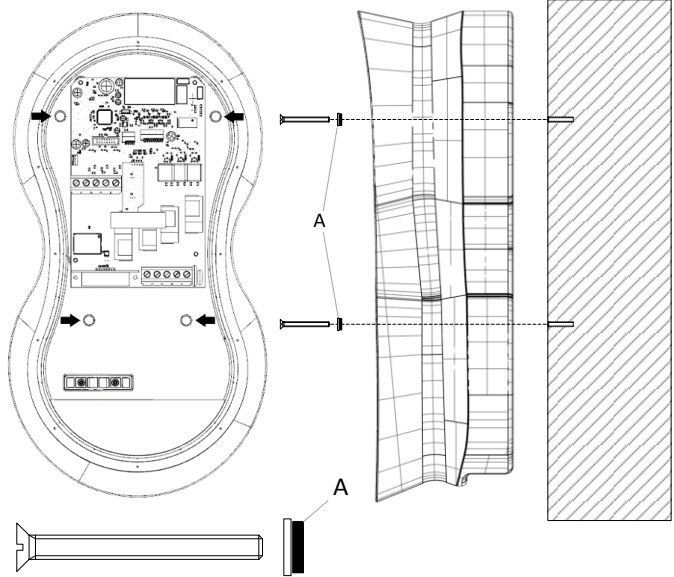
8. Insert the mains cable and strip back about 10 mm of insulation from the wires. Connect the wires on the terminal block and tighten them with a flat screwdriver. Take care to correctly tighten the cable gland to maintain the IP rating of the device.

⚠ DANGER

Tighten firmly the wires to the terminal block; a loose screw can cause a fire.
Tightening torque: 1.2Nm

⚠ ATTENTION

The connection must be made according to your grid system type. See section 4.5 for details.
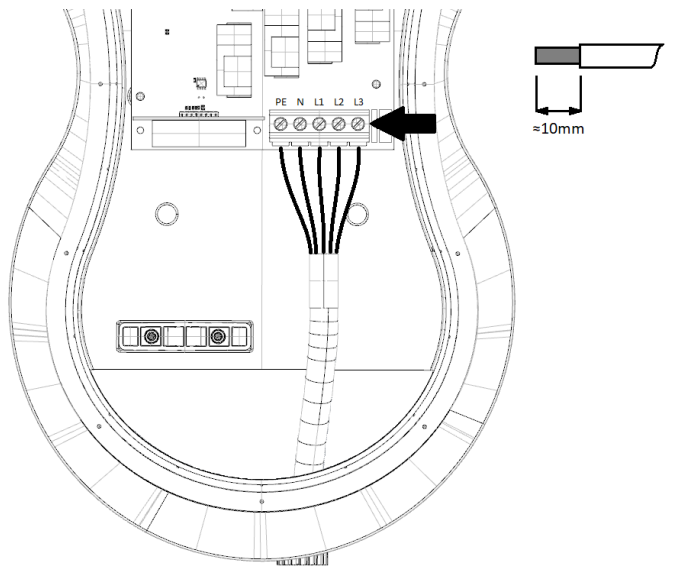
9. (Optional) If any, insert the CT and RS485 cables inside the installed cable gland and tighten it.	(See sections 4.6 and 4.8 for connections)

10. Pull the front cover back connecting the flat data cable on its seat.

⚠ ATTENTION

Handle the flat data cable carefully to avoid damage. Check it is seated firmly on both sides before closing the device.

ℹ The internal label contains the codes needed for the first configuration of infinergi. The label is duplicated on the packaging. If the packaging is not available, write them down before closing the box.

<table>
<tr>
<td>
11. Refit the front panel and tighten all 12 screws to close the box.

<table>
<tr><td colspan="2">⚠ **ATTENTION**</td></tr>
<tr>
<td>⚠</td>
<td>Use a screwdriver only to tighten the screws. The use of an electric screwdriver could damage the plastic.

Make sure that the sealing O-ring is on its seat before closing the box to maintain the IP rating of the device.</td>
</tr>
</table>
</td>
<td>

</td>
</tr>
</table>
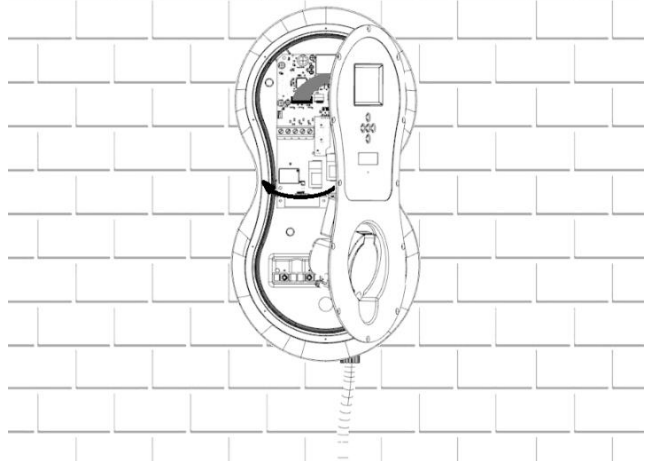
12. For tethered units, wrap the charging cable around the box and put the plug on the front holder.

ⓘ Follow the first configuration procedure described in section 4.10.

4.9.2. Pedestal mount

Prepare the base plate fixing point with an electrical corrugated pipe before mounting.

- The maximum pipe diameter is 50mm.
- Cut the pipe at least 100mm height from the ground
- According to local regulations, it may also be necessary to use a dedicated ground wire in the wiring, connected to a local earth rod, to be fixed on the dedicated pin inside the pedestal.

The pedestal installation hardware is supplied within the package (see section 2.8.2). The ground plate fixing hardware (anchor bolts or plugs and screws) is not supplied and must be selected depending on the floor type. The ground plate is provided with four 12mm fixing holes.

The single and double pedestal mounting procedure are the same. The second unit must be connected to a dedicated electrical system, as described in section 4.3.

1. Extract the pedestal and the mounting hardware from the package.	

2. Depending on the pedestal mounting type, prepare the ground fixing points: • if anchor bolts are used, fix them by referring to the dimensions picture on the side. Jump to point 4 • if plugs and screws are used, place the pedestal on the ground by inserting the corrugated pipe inside the base hole and by marking the fixing points.	

⚠ ATTENTION

The pedestal integrates internally an earth wire pin (A). To facilitate the installation procedure, mark the fixing points aligning the corrugated pipe on the (B) internal side, as indicated in the picture.
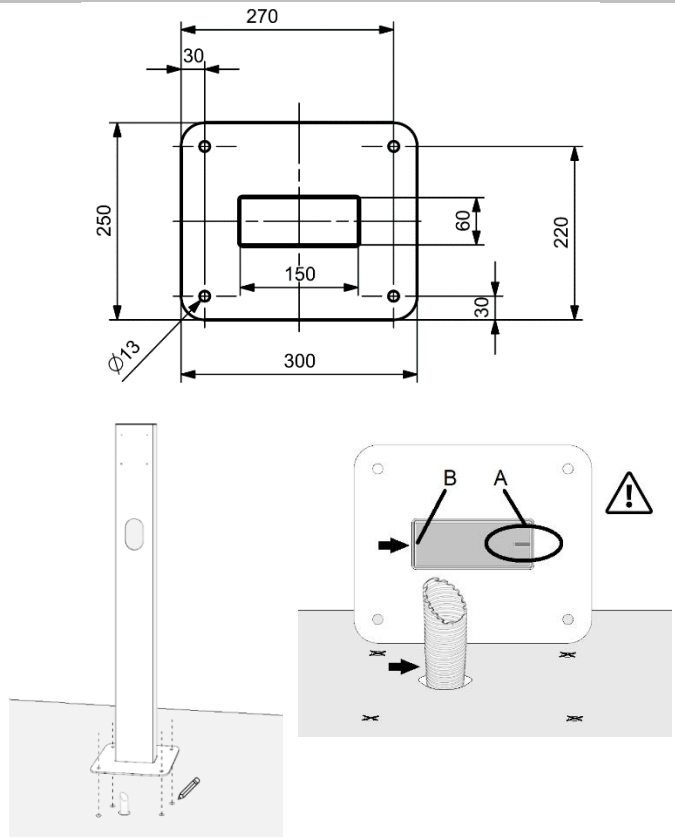
3. If plugs and screws are used, move aside the pedestal, drill the ground on marked points using an appropriate drill bit and insert the plugs on it.	
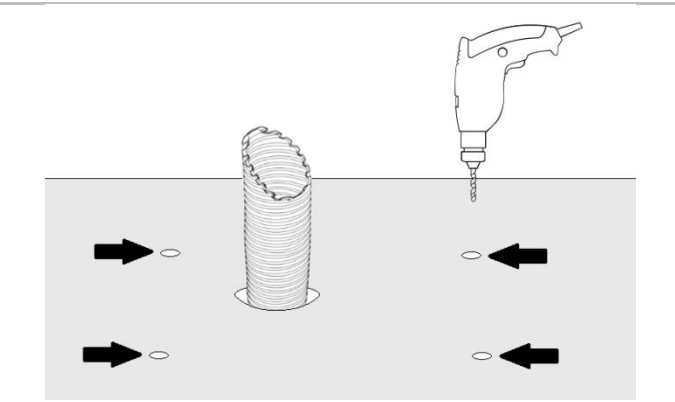
4. Lay down the pedestal and connect the earth wire on the M6 internal pin, if any.	

⚠ ATTENTION

Keep the wire terminal connection point on the upper side before tightening the nut to avoid damage when fixing.

Use an M6 eyelet terminal for the wire. Follow the grower washers and nut mounting sequence illustrated in the picture to better secure the earth wire.
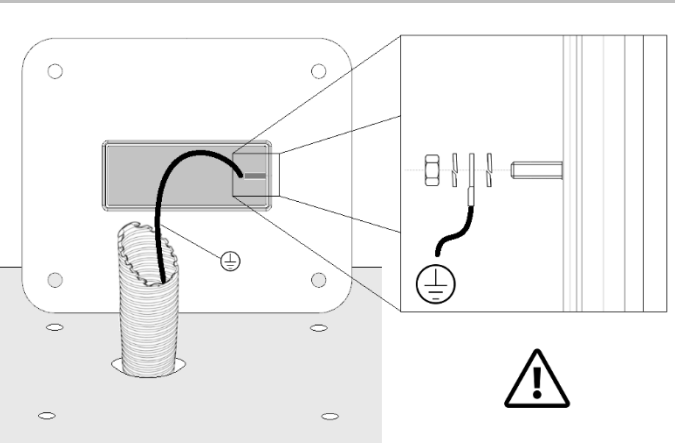
5. Place back the pedestal fixing it by the 4 anchors and pass the infinergi mains cable inside the pipe pulling it through the front hole. **ⓘ** The front hole is provided with a perimetral wire protection rubber. Check that it is in place after the cable pull.	
6. Mount the infinergi fixing plate on the pedestal using the M4 screws as illustrated in the picture.	
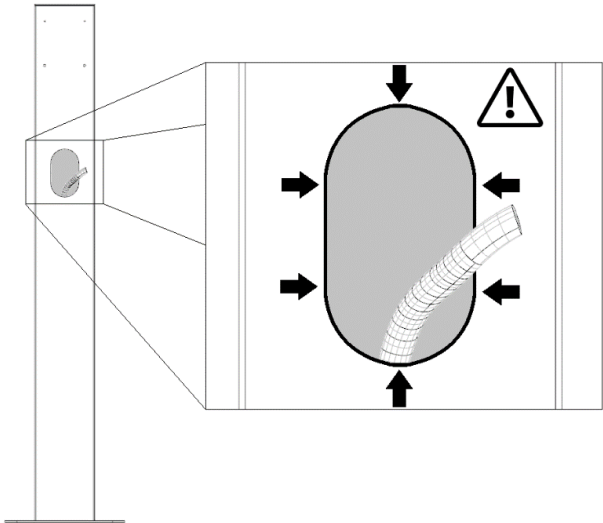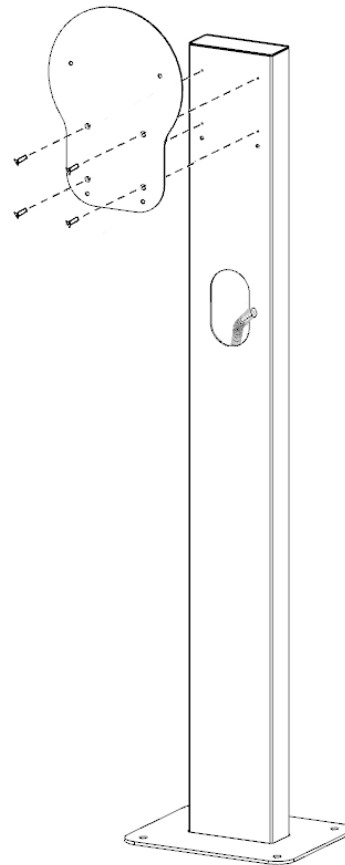
7. See the wall mounting procedure in section 4.9.1 and follow points 3 to 6.

8. Fix the box on the pedestal using the four M5 screws of the pedestal packaging, inserting the sealing washers supplied with infinergi packaging. ⚠ **ATTENTION** The sealing washers are needed to maintain the IP rating of the device. Make sure that the washers are oriented with the rubber side (A) towards the plastic, as shown in the figure. Be careful not to damage the electronic board during assembly. ℹ The two upper screws are through-hole type and must be fixed using the washers and the self-locking M5 nuts supplied with the pedestal packaging.	
9. See the wall mounting procedure in section 4.9.1 and follow points from 8 to 12.	
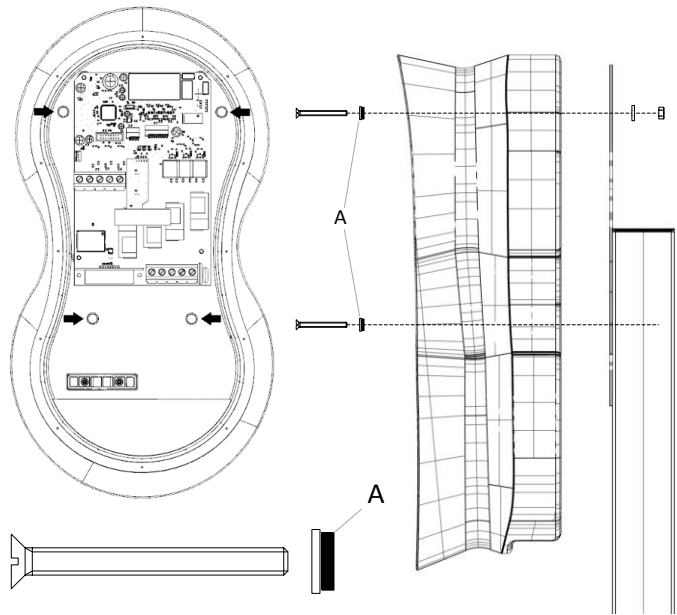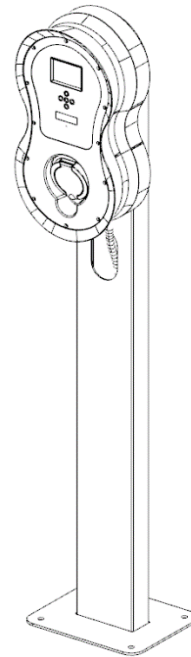
4.10. First configuration

⚠ **WARNING**

The first configuration must only be done by qualified technical personnel. It is forbidden to change the device settings configured by the installer to avoid the risk of damage or failures.

ℹ It is not possible to use infinergi to charge a vehicle until the first configuration has been completed.

On infinergi versions equipped with a display it is possible to complete the first configuration directly from it (see 4.10.1).
On all versions, it is always possible to use the integrated web portal to complete the first configuration (see 4.10.2).

The parameters to be configured are the following:

- **Charging enabled**. Enable the parameter to use infinergi. Useful when the device should be administratively disabled without the need to turn it off.
- **Wiring limit**. It is the maximum value of current/power that infinergi can supply. It must be set according to the maximum availability of the user's electrical system and with the section of cables used for wiring.
- **Earthing arrangements**. Indicates the grounding system (TN/TT or IT).
- **Installation complete**. To be enabled when installation is completed, otherwise, the device is still unusable. When saving, the device will exit the configuration mode by turning off the yellow front logo blinking.

⚠ WARNING
Setting electrical system inconsistent limits can cause serious damage to property or people and create malfunctions for users.

⚠ ATTENTION
If the infinergi unit shows a warning by the acoustic and the lighting signals when pressing the Apply button, disconnect the switch upstream of the device and try to solve the problem as described in section 9.1.

4.10.1. Using the display

1. Turn on the device unit by the upstream main switch.
2. Wait for the unit startup, confirmed by the relative acoustic and luminous signal.
3. Check that the device is in configuration mode (front logo blinking yellow). The following screen will appear on the display.
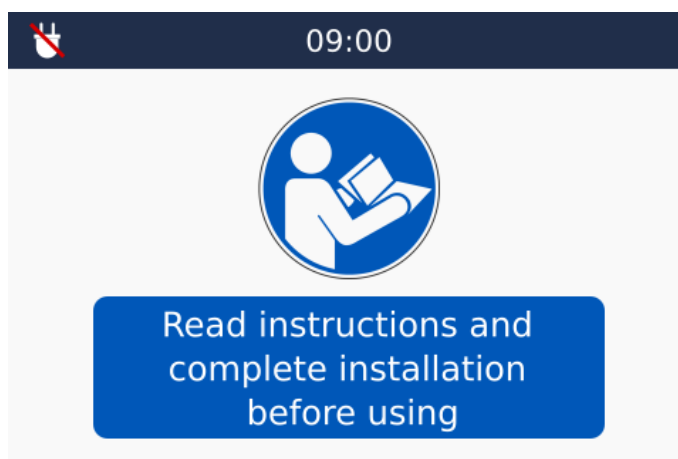
4. Open the main menu by pressing the center button ⊙.
5. Use the navigation buttons ⌃ and ⌄ to open the section *"Admin"* → "*Installation*". The default passcode is **4444**. To change this code, see the configuration parameter "*Admin passcode*" (see section 7.1.2).
6. Use the navigation buttons ⌃ and ⌄ to scroll through section items.
7. Use the navigation buttons ⌕ and ⌖ to change the value of the selected item.

8. Once the last item "*Installation complete*" has been enabled, the device can be used to charge an electric vehicle.

4.10.2. Using the web interface

1. Turn on the device unit by the upstream main switch.
2. Wait for the unit startup, confirmed by the relative acoustic and luminous signal.
3. Check that the device is in configuration mode (front logo blinking yellow).
4. Connect your WiFi device to the infinergi network called *INFINERGI_xx_xx_xx*[2]. The password is the alphanumeric code printed next to the "*WiFi Key*" marking on the internal label, duplicated inside the unit packaging (section 2.4.2).
5. Open any web browser on your device and type **http://192.168.223.1** on the address bar.
6. Log in using *admin* as username. The password is the serial number printed next to the "*Serial*" marking on the internal label, duplicated externally on the unit packaging (section 2.4.1).

⚠ ATTENZIONE
⚠ It is recommended to change the default password once the configuration is completed to prevent normal user access to the installation settings.

7. Open the *Admin* section from the home page, as illustrated in the following picture.

8. Click on the *Installation* section to open the installation parameters.

---

[2] The x are the last MAC address characters printed on infinergi internal label, duplicated on the unit packaging.
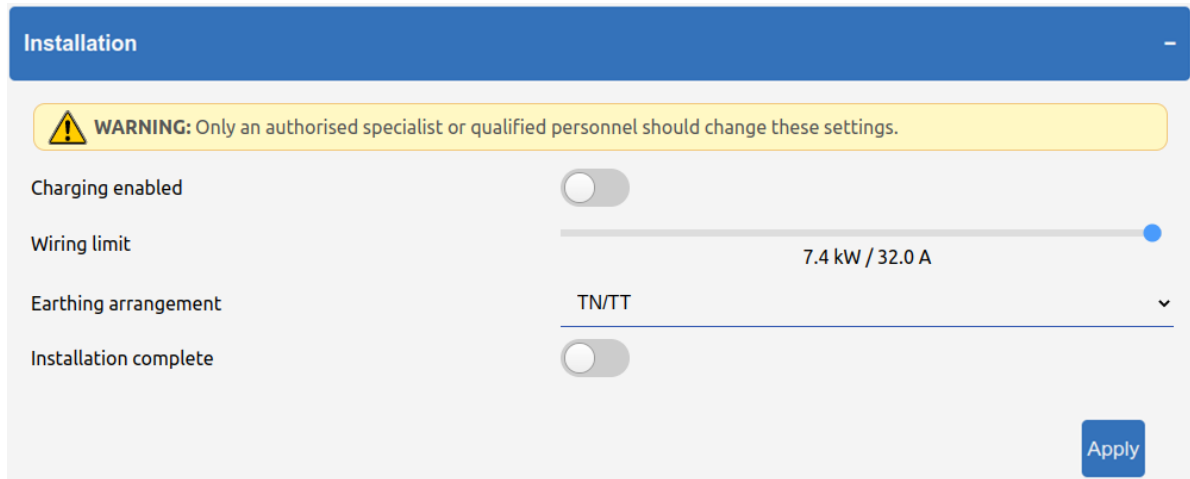
9. Set the parameters according to the type of the electrical system and save them with *Apply* button. Now the device can be used to charge an electric vehicle.

5. Functionalities

Some functionalities require the use of accessories provided only with certain models or that can be purchased separately.

5.1. Charging modes

The active charging mode is selectable among the following options of the configuration parameter "*Active mode*" (section 7.2.1):

- *Fast*
- *Green*
- *Programmed*
- *OCPP*

If the selected charging mode is managed directly from the device (*Fast*, *Green*, *Programmed*), the user can set a limit to the charging rate concerning the value entered during installation. This is changed via the configuration parameter "*Maximum charge rate*" (section 7.2.1).

5.1.1. Fast

Infinergi always charges at the maximum available rate, equal to the system limit settled during the first configuration or a lower limit if configured as a user setting.

If the DLM functionality is active, the available current is continuously adjusted according to changes in user power consumption (section 5.3).

5.1.2. Green

Requires installation of a grid meter (section 5.2.2).

Infinergi charges by optimizing the energy production of a renewable source plant.

The behavior of this mode can be adjusted by changing the following parameters (section 7.2.1):

- *"Minimum green level"*: expressed as a percentage of the minimum charging power (1.4kW on single-phase or 4kW on three-phase systems), it represents the surplus of green energy necessary to start and maintain charging.
  - o By setting this value to 100%, a surplus equal to or greater than 1.4kW is required to charge a vehicle. In this way you are sure to use only renewable energy, making the charging process completely eco-sustainable.
  - o By setting lower values, charging is performed with a mix of green energy and energy drawn from the grid connection. For example, by setting this level to 75%, a surplus equal to or greater than 1.05kW is required to start charging, while up to 0.35kW would be imported from the grid.
  - o By setting this value to 0%, the charging process is started independently from the production of renewable energy, drawing up to 1.4kW from the electricity grid, a value that decreases as the available surplus increases.
- "*Minimum exported power*": represents the minimum power to be always exported and not to be considered in the calculation of the available surplus. If this value is set, the "*Minimum green level*" parameter is automatically treated as 100%.

5.1.3. Programmed

Requires setting of the internal clock (section 5.4).

Infinergi can operate in different modes according to a schedule set by the user.

There are six weekly programs, named from P1 to P6, and a default program that is applied when none of the other programs are active.

For each one, the following parameters can be configured:

- Days of the week when it is active;
- Start time;
- Duration (value 00:00 makes it inactive);
- Charging mode, to be chosen between *Fast* and *Green*;
- Limit on charging power ;
- In the case of *Green* mode, the *"Minimum green level"* percentage.

> ℹ️ If *Green* profiles are programmed, activation of the DLM functionality is required (section 5.3).

5.1.4. OCPP

> ℹ️ Requires an Internet connection (section 5.8) via WiFi or GPRS.

The charging profile is managed by a central system (*Central Station)* via the OCPP 1.6J protocol.

To establish the OCPP connection between the device and the central system, the user must configure the following configuration parameters (section 7.2.1):

- *"URL"*: connection endpoint of the central system.
- *"Charge Point ID"*: ID of the charge point. Optional parameter, the default value is equal to the serial number.

On firmware versions 2.1.0 or newer, it is possible to configure two additional OCPP parameters.

- *"Authorization mode"*: the authorization mode is selectable among the following options.
    - **Disabled**: charging could be started without authorization;
    - **Static ID tag**: authorization is performed using a fixed ID tag;
    - **RFID**: authorization is performed using the RFID reader and a valid card.
- *"Static ID tag"*: an ID tag to be used in `StartTransaction` message, when authorization mode is not dynamic (RFID), or in `Authorize` message to use a fixed value. Optional parameter, the default value is equal to the last 19 characters of the serial number.

5.1.5. Off

Infinergi never supplies power when a vehicle is connected.

The "*off*" mode can only be set within the "*programmed*" mode (section 5.1.3).

5.2. Energy meters

5.2.1. Vehicle

The type of meter used to measure the energy supplied to the vehicle is selected among the options of the configuration parameter "V*ehicle meter*" (section 7.2.1).

Meter readings are shown in the section *"Info"* → "*Electrical readings*" of the web interface.

5.2.1.1. Internal

The infinergi device integrates a meter capable of measuring the power absorbed by the vehicle and the energy supplied during charging.

Not being a certified measuring instrument, the information provided should only be used for indicative purposes.

5.2.1.2. MID meter

This option is only available on versions equipped with an RFID reader.

Some models of the infinergi device are equipped with an RS485 interface to communicate with a MID-approved electricity meter. The certification of the energy reading used during a charging session allows the device to be used in scenarios where service pricing is required (eg. *OCPP*).

For the connection of the MID meter and the list of supported models, refer to section 4.7.

After installation, MID meter readings are displayed in the statistics instead of those from the integrated meter.

5.2.2. Grid

The type of meter used to measure the energy imported/exported from the grid is selected among the options of the configuration parameter "*Grid meter*" (section 7.2.1).

Meter readings are shown in the section *"Info"* → "*Electrical readings*" of the web interface.

For the connection of the related analog sensors, refer to section 4.6.

5.3. Dynamic Load Management (DLM)

This function adjusts the available charging current based on the system's energy consumption, allowing it to avoid the disconnection of the energy meter when the overall absorption exceeds the contractual power.

To use DLM it is necessary to have installed a dedicated energy meter (section 5.2.2) and properly configure the parameter "*Maximum import from the grid*" (section 7.2.1). This represents the maximum value of current/power drawn from the grid connection during a charging session. Normally it must be set as at the contractual power value.

⚠ ATTENTION
The standard requires a minimum charging current of 6A (equal to approximately 1.4kW on single-phase and 4kW on three-phase systems). Therefore, the charging process may not start as long as the available power, net of other consumption on the system and the surplus of green energy available, does not reach this threshold

5.4. Date and time setting

To use some functionalities, the internal clock must be properly configured.

If the device is connected to the Internet (section 5.8), the date and time are automatically synchronized.

Alternatively, they can be configured manually using the configuration parameter "*Date and time*" (section 7.2.2).

5.5. Boost

During **Green** mode, the activation of Boost functionality increases charging power to the maximum possible value, regardless of the surplus of available energy.

A dedicated parameter ("*Boost energy*", section 7.2.1) represents the amount of energy that must be supplied to the vehicle before the Boost is interrupted.

By setting this parameter to zero, the Boost remains active until the charge ends (or manual deactivation).

5.6. Over temperature limitation

Infinergi constantly monitors the internal temperature to avoid overheating problems and potential failures.

As soon as the temperature exceeds a first warning threshold, infinergi decreases the charge rate, regardless of the active charging mode.

If the temperature continues to rise above a second critical threshold, charging is stopped and infinergi reports an error.

> The charging station guarantees full power operation as long as the ambient temperature remains within the operating range. See section 2.3 for technical specifications.
>
> To make charging efficient and avoid possible damage, it is recommended to install infinergi away from heat sources and not directly exposed to sunlight.

5.7. Charge authentication

> Authentication management can only be performed by a user with administrative privileges.

On infinergi models equipped with an RFID reader, it is possible to configure that the charging process starts only after user authentication.

If authentication is required, to start charging a user must swipe a valid RFID card in front of the reader, positioned in correspondence with the relevant logo as shown in the figure.

The authentication mode is selected from the following options of the configuration parameter "*Authentication mode*" (section 7.1.2):

- *Free*: authentication disabled.
- *Local list*: the list of valid cards is saved on the device's memory.
- *Centralized*: the list of valid cards is saved on a remote system.
- *Centralized with local list*: the validation of a card is performed both as a request to a remote system and by checking the local list stored on the device.

RFID
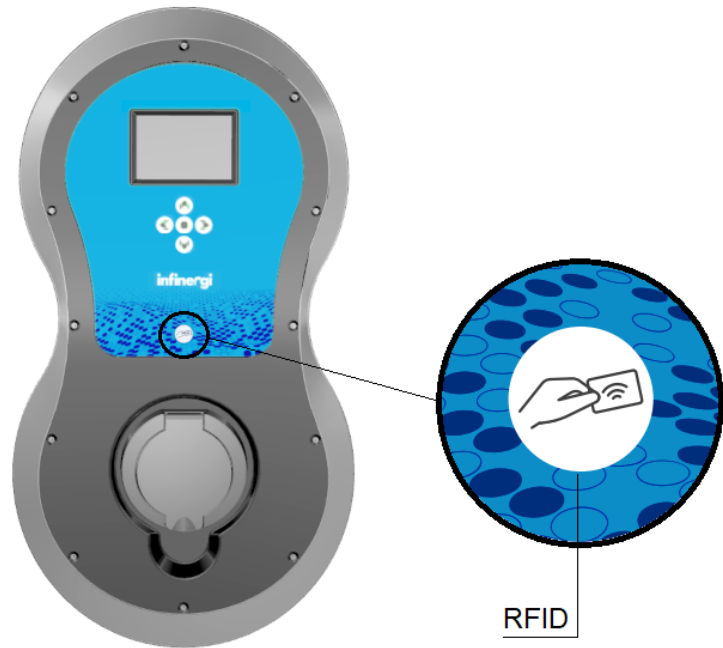
In the latter two cases, the device must be connected to the Internet (section 5.8).

The management of the local list, once that "*Local list*" or "*Centralized with local list*" are selected as authentication mode, can be performed both from the display (if equipped) and from the web interface.

> Each new card is stored as valid. At any time, it's possible to block one of the saved cards, without having to remove it from the system, and then reactivate it at a later time.

5.7.1. Display

Navigate to the section *"Admin"* → "*RFID authentication*", where the "*Current list*" item is present.

From here you can add a new card, following the instructions on the display, or remove an existing one by selecting it from the list.

5.7.2. Web interface

Open the *"Admin"* → "*RFID authentication*" section and select the "*Add new*" item.

This allows adding a new card by swiping it directly on the reader (within 1 minute) or by entering its ID manually.

5.8. Internet connection

Infinergi can be connected to the Internet via WiFi connectivity, which is available on all versions, or via mobile network, using an expansion module that is integrated into some versions or purchasable separately (see section 4.8 for installation).

5.8.1. WiFi

If infinergi is installed in an area reached by a WiFi network, it can be configured to connect to this network. Refer to section 7.2.4 for the configuration parameters.

5.8.2. Mobile

To use this connection is required an infinergi device equipped with a GPRS module (section 4.8).

⚠ ATTENTION
The module can also be purchased separately and installed on devices that do not natively mount it. In this case, the installation of the module must only be carried out by qualified technicians. The manufacturer is not responsible for damage caused by incorrect installation. See section 4.8 for more details.

Refer to section 7.2.5 for the configuration parameters.

5.9. Software update

It is recommended to always keep the device updated to the latest software version. This increases its reliability and safety, and integrates new features if they are available.

The device software update can be performed automatically, if connected to the Internet, or manually, using the internal web interface.

During this procedure, the device may automatically restart several times. If the operation is started while a charge is in progress, the restart of the device is postponed at the end of the charging session.

Wait for the end of the light or the display (where available) indication of the update in progress before starting a new charge.

5.9.1. Automatic mode

If the device is connected to the Internet (5.8), the software updates are managed automatically by the device.

For this reason, it is always recommended, where possible, to connect your device to the Internet.

5.9.2. Manual mode

To start the procedure, download the latest software version available at the following link
https://docs.ithingszone.com/infinergi/firmware/

Using the local web interface (6.1.2) with administrative access privileges, it is possible to update the device manually.

Once logged in, enter the *Admin* menu and open the *Firmware update* item. Then click on "*Choose a file*" and select the previously downloaded file.

Click on "*Start update*" and wait for the end of the procedure.

Firmware update
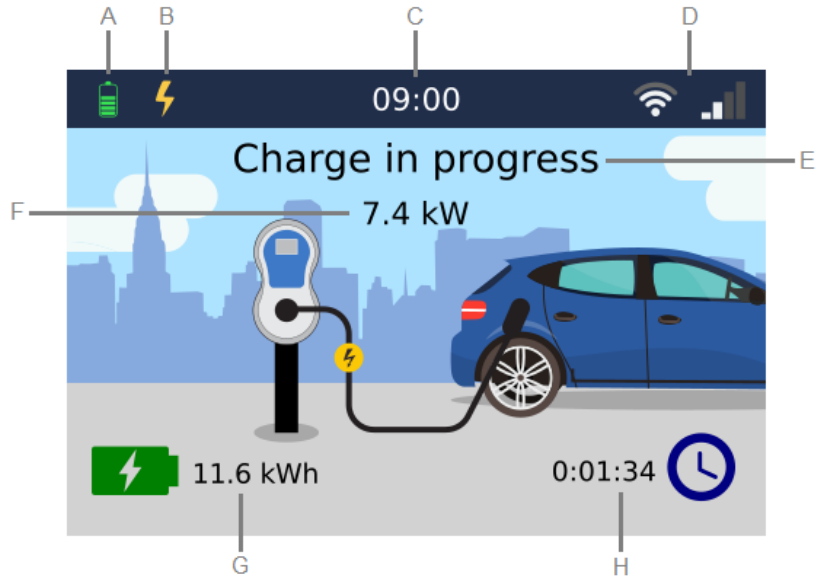
Choose a file

INFINERGI-2.0.2.iPKG

Start update

Home	History	Settings	Admin	Info

6. User interface

6.1. Local access

6.1.1. Display

The main screen (*Home*) of the device appears as follows.

A. Device status icons:
    ⟳ Device initialization in progress.
    Charging not enabled.
    ⏻ Device out of service.
    Vehicle not connected.
    🔒 Vehicle connected but user not yet authenticated.
    ⧖ Vehicle connected but charge current not yet available.
    Charging in progress.
    ❚❚ Charging paused.
    Charging terminated.
    ⚠ Error encountered.
    ⊕ Firmware update in progress.

B. Current charging mode:
    ⚡ Fast
    🍃 Green
    Programmed (flanked by the current program number, when active)
    OCPP OCPP

C. Current time
D. Status of WiFi and mobile connectivity (optional)
E. Device status information
F. Instant charging power (present only during a charging session)
G. The energy delivered during the last charging session
H. Duration of the last charging session

By pressing the ⦿ button from the *Home* screen the user enters the *Menu* screen, where using the buttons as indicated in 6.2.2 it is possible to navigate between the following sections:

- **Admin**: contains the administrative settings (section 7.1).
- **User settings**: contains the settings that the user can change (section 7.2).
- **Info**: shows the main information of the device.

ℹ️ The *home* screen closes automatically after 1 minute of inactivity.

6.1.1.1.   Access privileges

Navigation between the different display screens is free.

For greater security, especially in the case of installations in non-private scenarios, it is recommended to set a 4-digit passcode that must be entered to access the *Menu* screen.

To enable and change the code, refer to the configuration parameters "*Menu access*" and "*User passcode*" (section 7.1.2).

Access to administrative settings (*Admin*) is always protected, and the insertion of a valid passcode (default **4444**) is required.

To change the code, refer to the configuration parameter "*Admin passcode*" (section 7.1.2).

6.1.2. Web interface

1. Connect your WiFi device to the infinergi network called *INFINERGI_xx_xx_xx*[3]. The password is the alphanumeric code printed next to the "*WiFi Key*" marking on the internal label, duplicated inside the unit packaging (section 2.4.2). To edit the password, refer to the configuration parameter "*Infinergi network*" (section 7.2.3).
2. From any web browser, navigate to the address **http://192.168.223.1**

ℹ️ If infinergi has been connected to an existing WiFi (section 5.8.1), the same web portal can be reached from any other device on the same network.
In this case, you must navigate to the address: **http://infinergi_xx_xx_xx.local**

3. Login using the access credential described in 6.1.2.1.
4. When the web page is loaded, you can navigate between the following sections:

- **Home**: represents the current status of the device and charging information (if in progress).
- **History**: reports the history of the charging sessions stored in the device.
- **Settings**: contains the settings that the user can change (section 7.2).
- **Admin**: contains the administrative settings (section 7.1).
- **Info**: shows the main information and statistics of the device.

6.1.2.1.   Login credentials

The web interface can be accessed with two levels of privileges: *user* and *admin*.

Logging in as a user (username *infinergi*) allows navigation among the various sections, except for the administrative settings.

In this case, the password to be used is equal to the last 6 characters of the serial number shown on the label, as described in 2.4.1.

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[3] The x are the last MAC address characters printed on infinergi internal label, duplicated on the unit packaging.

To change this password, refer to the configuration parameter "*User web login*" (section 7.2.3).

Access to the administrative settings (username *admin*) is done using as a password the serial number printed next to the "*Serial*" marking on the internal label, duplicated externally on the unit packaging (section 2.4.1).
To change this password, refer to the configuration parameter "*Admin web login*" (section 7.1.3).

For example, the access login credentials for a device with serial number 21/001-000001 are the following:

	User access	Admin access
Username	**infinergi**	**admin**
Password	**000001**	**21/001-000001**

6.2. Buttons

6.2.1. Models without display

Models without display have only one multifunction button, which performs different functionalities depending on the duration of pressing.

BUTTON	DURATION	EVENT	DESCRIPTION
	Less than 1 second	Charging management	The action changes depending on the status of the device: • ERROR IN PROGRESS: recovery attempt (see 9.1 for more details). • CHARGING IN PROGRESS: suspend charging. • PAUSE IN PROGRESS: resume charging.
	30 seconds	Device restart	Software restart of infinergi device
	60 seconds	Factory reset	After the first 30 seconds, the device will restart. Keep the button pressed for further 30 seconds to restore the factory settings.

6.2.2. Models with display

Models with displays have five buttons, whose functionalities are different depending on the currently active screen.
From any screen, pressing the right and left buttons simultaneously allows the following quick operations.

BUTTONS	DURATION	EVENT	DESCRIPTION
	30 seconds	Device restart	Software restart of infinergi device
	60 seconds	Factory reset	After the first 30 seconds, the device will restart. Keep the button pressed for further 30 seconds to restore the factory settings.

infinergi

6.2.2.1. *Home* **screen**

BUTTON	DESCRIPTION
●	Enter the *Menu* screen
⋀	Boost activation (only in **Green** mode)
⋁	Change charging mode
≪ ≫	-

6.2.2.2. *Menu* **screen**

BUTTON	DESCRIPTION
●	Confirmation of the selected option
⋀ ⋁	Navigation through the menu items
≪ ≫	Change the value of the current item

6.2.2.3. **Standby**

While the display is on standby, pressing any button exits this mode and reopens the *Home* screen.

7. Configuration parameters

Using the access modes described in 6.1 it is possible to configure the following parameters.

7.1. Admin

7.1.1. Installation

Parameter	Description	Ref.
Charging enabled	Enable/disable the device at the administrative level	4.10
Wiring limit	Maximum current/power value supported by the electrical system and the size of the cables used for installation. The device will never charge beyond this limit.	
Earthing arrangement	Type of earthing (TN/TT or IT).	
Installation complete	Confirm the end of the installation	

7.1.2. RFID authentication

ⓘ   This section is only available on versions equipped with an RFID reader.

Parameter	Description	Ref.
Mode	Currently active authentication mode.	5.7
Current list	List of RFID cards stored on the device.	

7.1.3. Security

Parameter	Description	Ref.
Admin passcode	(*Only with versions with the display*) 4 digits code to open the *Admin* section.	6.1.1.1
User passcode	(*Only with versions with the display*) 4 digits code to open the menu (if protected).	
Access to menu	(*Only with versions with the display*) Select if access to the menu is free or protected by code.	
Web login admin	Password used to login as *Admin* to the web portal. Leaving the field blank resets the password to its default value.	4.10.2

7.2. Impostazioni utente

7.2.1. Charging

Parameter	Description	Ref.
Active mode	Currently active charging mode.	5.1
Maximum charge rate	User limit to charging power.	
Maximum import from the grid	The contractual power limit used to dynamically manage the charging current.	5.3
Boost energy	Amount of energy to be supplied in *Boost* mode.	5.5

Meters	Vehicle	Type of meter used to measure the energy absorbed by the vehicle.	5.2.1
	Grid	Type of meter used to measure grid import/export.	5.2.2
Green	Minimum green level	Necessary surplus to start a charging process.	5.1.2
	Minimum exported power	Minimum power level to be exported.	
Programmed		Up to six different charging schedules.	5.1.3
OCPP	URL	Central system connection endpoint.	5.1.4
	Charge Point ID	The ID of the charge point.	
	Authorization mode[4]	Authorization mode to use in OCPP mode.	
	Static ID tag[4]	Fixed ID tag to be used in messages to the Central System.	

7.2.2. System

Parameter	Description	Ref.
Date and time	Date and time of the internal clock.	5.4
Language	(*Only with versions with the display*) The language used on the display.	-
Screen brightness	(*Only with versions with the display*) Brightness level.	
Display off	(*Only with versions with the display*) Auto shutdown time.	
Buttons sound	Enable/disable the acoustic signal when keys are pressed.	

7.2.3. Security

Parameter	Description	Ref.
Infinergi network	It's the key used to connect to the WiFi network called *INFINERGI_xx_xx_xx*. Leaving the field blank resets the key to its default value.	6.1.2.1 6.1.1.1
User web login	Password used to log in to the web portal using *infinergi* as username. Leaving the field blank resets the password to its default value.	

7.2.4. WiFi connection

Parameter	Description	Ref.
Enable	Enable/disable the connection of the device to an existing WiFi network.	5.8.1

WiFi networks scan is performed by selecting the "*Current network*" item (if using the display) or by pressing the "*Show Networks*" button (if using the web interface).

Select the network of interest and, if protected, enter the password in the relevant section.

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[4] Requires firmware versions 2.1.0 or newer.

Wait for confirmation of connection from the relative icon on the display (6.1.1) or in the section *"Info"* → "*WiFi connection*" of the web interface.

7.2.5. Mobile connection

 This section is only available on versions equipped with the GPRS module.

Parameter	Description	Ref.
Enable	Enable/disable the connection of the device to the mobile network.	5.8.2
APN	Access point name to connect the device to the Internet. Contact the operator of the inserted SIM to get this information.	

Once configured, wait for confirmation of connection from the relative icon on the display (6.1.1) or in the section *"Info"* → "*Mobile connection*" of the web interface.

8.   Light signals

On the front panel of infinergi, there is a logo that lights up according to the following table.

COLOR	STATE	DURATION [ms]	DESCRIPTION
🟡🟢🔵	Single blink	600	Infinergi startup.
–	Off	-	Vehicle not connected.
🟡	Fixed	-	Vehicle connected but charging current not available. Condition verifiable only with DLM functionality enabled or in *OCPP* mode.
	Periodic blinking	1000	Incomplete installation.
	Periodic blinking	2000	Charging was suspended due to one of the following conditions: • Invalid charging program • Energy not available (DLM active) • Green energy not available (DLM and *Green* mode active) • Ventilation required by the vehicle • Device not enabled for charging (only in *OCPP* mode) • Pause requested by the user
🔵	Fixed	-	Vehicle connected, waiting for it to start charging.
	Periodic blinking	200	Test in progress before starting charge.
🟢	Fixed	-	Vehicle charging complete.
	Periodic blinking	1000	Charging in progress.
	Double blink	350	Valid authentication.
🟣	Periodic blinking	2000	Software update in progress: do not power off the device.
🔵	Fixed	-	Waiting for transaction start confirmation (only in *OCPP* mode).
	Single blink	500	Charging authorization request in progress.
🔴	Double blink	350	Failed authentication.
	Periodic blinking	500	The device has encountered an error. See 9.1 for more details.

9. Technical support

9.1. Errors and recovery

The infinergi charging station can detect some failures and inform the user.

An error will always stop or suspend the charging process.

Errors are divided into three categories: installation, vehicle, and infinergi device errors.

CATEGORIA		ORIGINE
1	Installations	Incorrect wiring of the device or problems with the power supply system.
2	Vehicle	Problems related to the charging cable (untethered versions) or the connected vehicle.
3	Device	These errors are linked to internal problems in the infinergi device.

If an error occurs, the front panel central LED flashes (as described in section 8) as many times as the number of its category. The flashing sequence is repeated cyclically, at intervals of one second, until the error is resolved manually or automatically.

For a limited time, LED signaling is accompanied by acoustic signaling.

Each error has its code to facilitate recognition, which can be displayed via the user interface or the display (if equipped).

⚠ ATTENTION
Some recovery actions can only be performed by qualified technical personnel. If the problem report persists even after the indicated corrective action, please contact technical support.

COD.	ERROR	CAUSE	RECOVERY ACTION
I1	Problem with the earth connection	Earth wire disconnected or impedance too high.	Disconnect the vehicle and check that the earth connection is consistent with the type of installation specified in 4.10.
I2	Phase reversal	Phase and neutral input cables reversed.	Remove the power supply from the device and check the input cable wiring.
I3	Undervoltage	Input voltage too low.	The error is automatically cleared when the voltage returns above the minimum threshold. For a three-phase system, check that phase 2 and 3 cables are correctly inserted.
I4	Overvoltage	Input voltage too high.	The error is automatically cleared when the voltage returns below the maximum threshold.
V1	Overload	The current drawn by the vehicle exceeded the maximum limit (125%).	Disconnect the vehicle and press the multifunction button to reset the device.
V2	Ground fault	Excessive DC leakage current detected during charge.	Disconnect the vehicle, check that the source of the problem is cleared, and press the multifunction button to reset the device.

V3	Non-compliant vehicle	Vehicle not compliant with IEC 61851 detected.	Disconnect the vehicle and press the multifunction button to reset the device.
V4	Pilot problem	Problem detected on vehicle-side control pilot circuitry.	Disconnect the vehicle and press the multifunction button to reset the device. If the problem persists, check if the connector contacts are dirty.
V5	Invalid cable	(Only for untethered versions - case B): connected cable not correctly detected.	Disconnect the cable and check that the cable/plug is marked IEC 62196-2. Supported cables are 70/63A, 32A, 20A, and 13A. If the problem persists, check if the connector contacts are dirty.
D1	Internal communication error	Communication error between the panel and box electronic boards.	Press the multifunction key to reset the device. If the error persists, check the correct connection of the internal flat data cable between the two cards.
D2	Remote communication error	Radio communication error between the infinergi device and the associated CT remote device.	Press the multifunction button to reset the device. If the error persists, pair the two devices again.
D3	Internal hardware error	Hardware problem with the internal electronic boards.	Press the multifunction button to reset the device. If the problem persists, disconnect the unit's main power supply.
D4	Incorrect output voltage	Power failure when attempting to start charging.	Press the multifunction button to reset the device.
D5	Error in locking/unlocking the connector	Only for untethered versions (case B): connector locking system failure.	Check that the connector is firmly seated in the station socket and press the multifunction button to reset the device.
D6	Internal protective device error	Failure of the internal protection sensor (RDC-DD) during the test before a charge.	Disconnect the vehicle and press the multifunction button to reset the device.
D7	Overheating	Internal device temperature above maximum threshold limit.	Wait for the device to cool. Leaving the vehicle connected, the error persists until the temperature returns to the acceptable range.
D8	Unexpected status	The device signals an unexpected state, which does not comply with IEC 61851-1.	Disconnect the vehicle and press the multifunction button to reset the device.
D9	Communication error with MID meter[5]	Communication error between the device and the configured MID meter.	Press the multifunction key to reset the device. If the error persists, check the connection between the device and the meter.

9.2. Troubleshooting

This section lists the most common problems you may encounter. If you cannot find the solution to a problem, please refer to the local distributor of the product.

PROBLEM	POSSIBLE REASON	POSSIBLE SOLUTION
Display (option) or LEDs don't light up	• Device is not powered	• Check for correct supply voltage (230V AC ± 10%)

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[5] Some IVY METERING Modbus meters need about a minute before communicating correctly. Ignore the D9 errors reported by the infinergi device and perform corrective actions only if the problem persists even after a few minutes.

	• Device is in standby mode	• Tap the unit or press a button to wake it up
	• Flat data cable is not connected	• (*Only for installers*) Check flat data cable connection
Charging does not start once a vehicle is connected	• A charging mode that does not enable charging is configured	• Check the charging mode configuration (5.1) • If set, check DLM configuration (5.3)
	• Charging cable is not correctly inserted (*only for untethered versions*)	• Fully press the charging cable on the vehicle and/or on infinergi (*only for untethered versions*)
The charging rate is limited compared to the nominal power of infinergi	• A limit (installation or user) below nominal power has been set	• Check installation limit (4.10) or user limit, if set (5.1)
	• Internal temperature of infinergi is too high	• See 5.6
	• The vehicle does not accept charging rates above a certain threshold	• Consult the vehicle user manual
The energy supplied to the vehicle is reported as green even in the absence of renewable energy production	• DLM functionality is enabled but the current sensor is not properly installed	• Check that the current sensor is properly installed (4.6)
The device signals an audible or visual alarm	• An error condition occurs • The charging station is damaged	• Check the light indications in 8 or the error code and check 9.1 for the troubleshooting • If the error persists, disconnect infinergi from the mains and contact assistance
The protection RCD trips after switching on the device	• Excessive earth leakage current on the system • The charging station is damaged	• Check your electrical system • In case of damage, infinergi makes the RDC automatically trip for safety reasons. Contact assistance
Vehicle connection makes the energy meter trip	• Problems with DLM functionality	• If set, Check DLM configuration parameters (5.3) • Check that the current sensor is properly installed (4.6)
	• For devices without DLM functionality, the settled charge limit is too high	• Lower the charge limit via device settings (5.1)
The device does not connect to a WiFi network	• Network connection has not been properly configured	• Check configuration parameters (7.2.4)
	• Configured network is out of range or has a weak signal level	• Bring a WiFi signal repeater closer
The device does not connect to the mobile network (*only for GPRS versions*)	• GPRS module is not detected	• (*Only for installers*) Check GPRS module installation (4.8)
	• Network connection has not been properly configured	• Check configuration parameters (7.2.5)
	• Configured network is out of range or has a weak signal level	• Change the installation site to an area with better coverage
	• SIM card is not detected	• (*Only for installers*) Check SIM insertion (4.8)

10. Maintenance

⚠ DANGER
Using a damaged device could result in electric shock. Call a qualified technician to repair the unit or shutdown in case of irreparable damage. Disconnect the mains before any maintenance operation.

⚠ WARNING
For outdoor installations, do not perform maintenance during rain, snow, or wet weather. Pay attention to reassembling the unit to maintain the device's IP rating.

Do a visual check to find element damage before each charge.

10.1. Cleaning

Do not use solvents or strong detergents to clean the enclosure or the charging cable.

Use a soft damp cloth and neutral detergent.

10.2. Disposal

Follow local regulations about the disposal and recycling of electrical components, plastics, and packaging materials to limit environmental pollution.