

ETREL

INCH Pro

QUICK START GUIDE

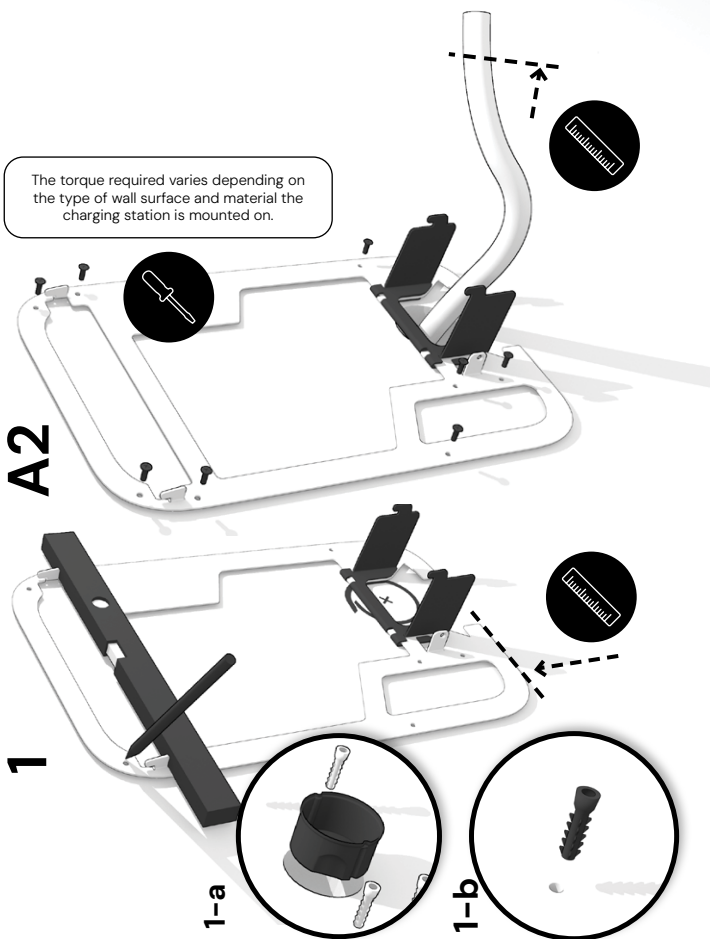
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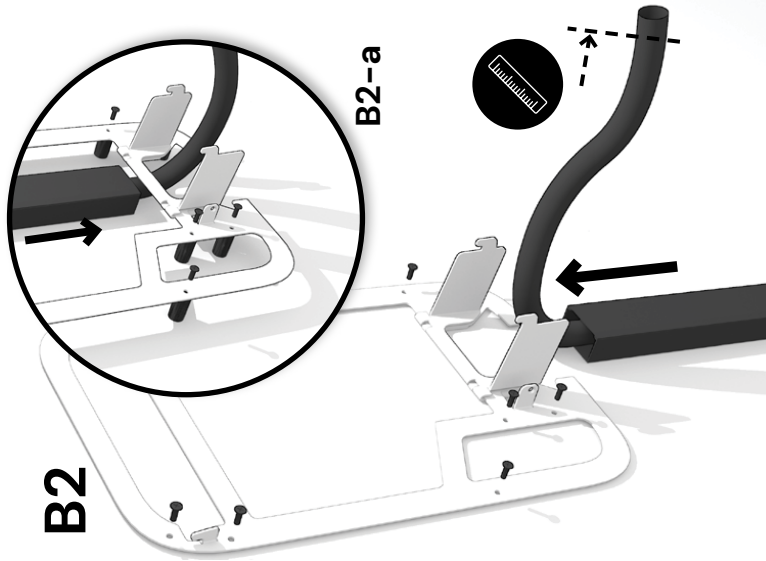
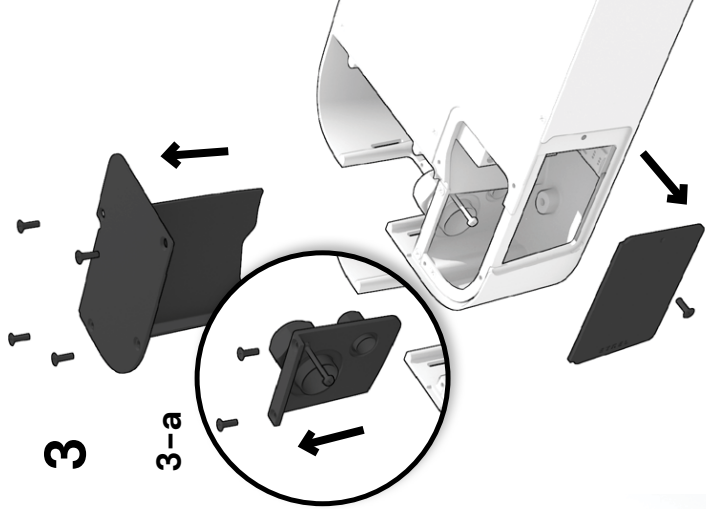
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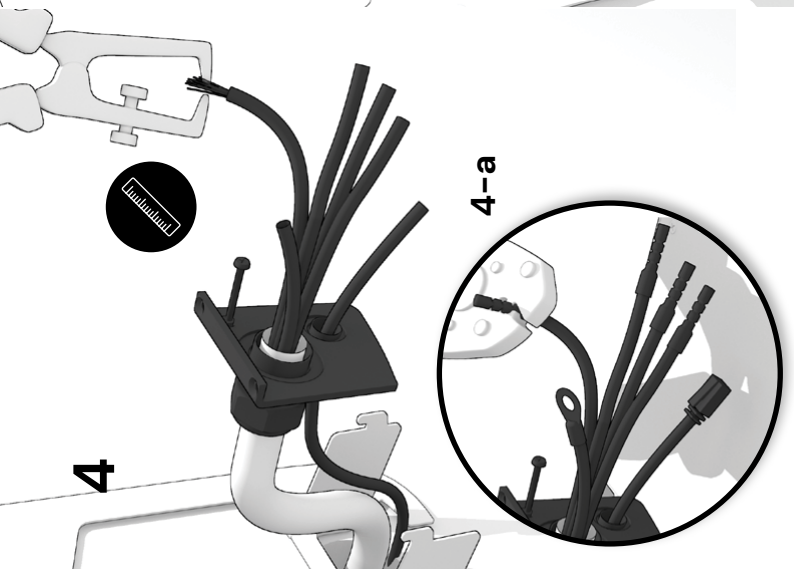
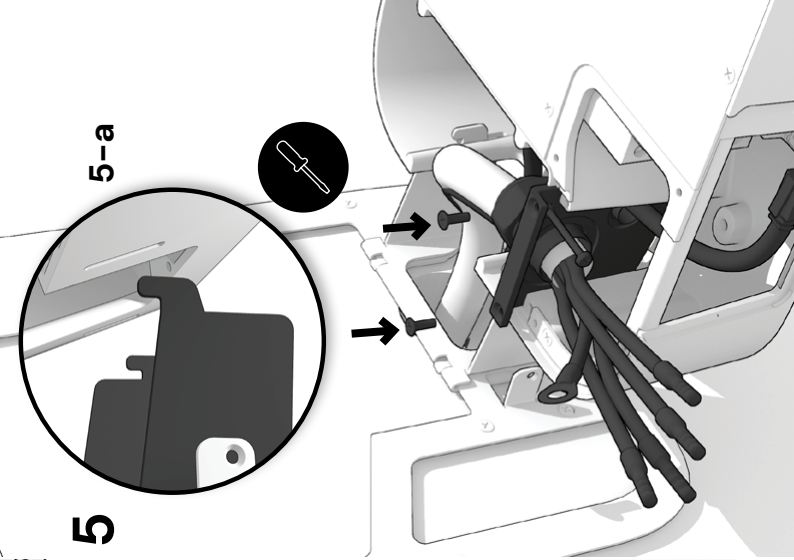
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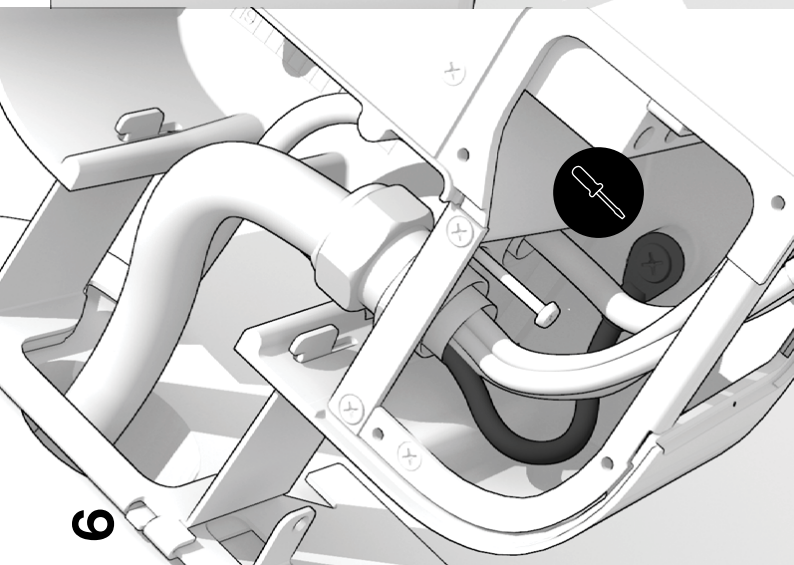
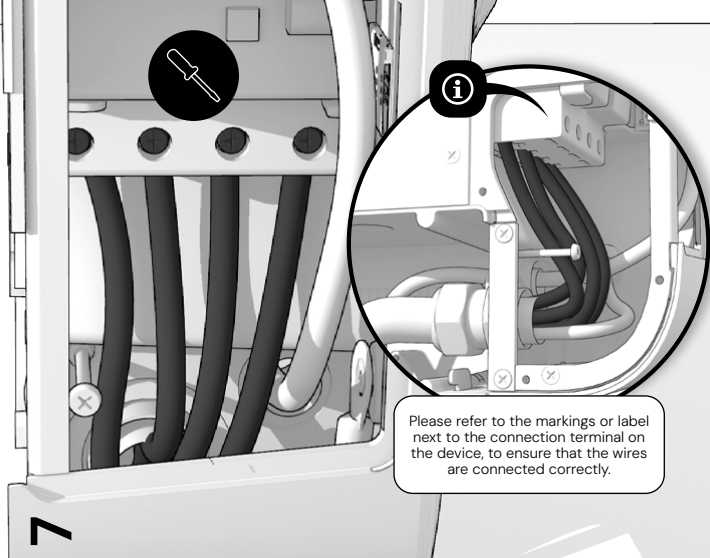
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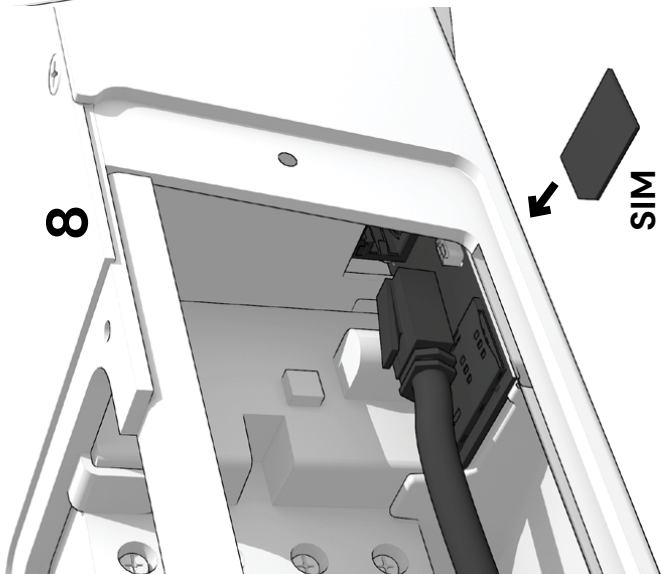
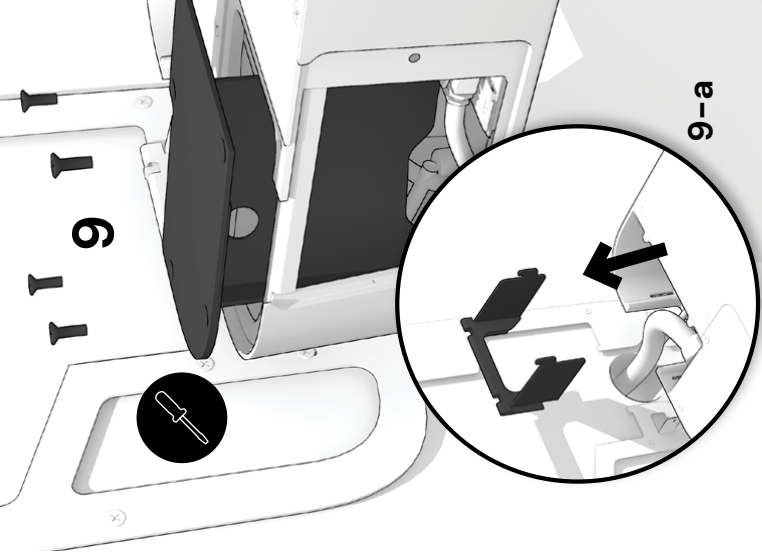
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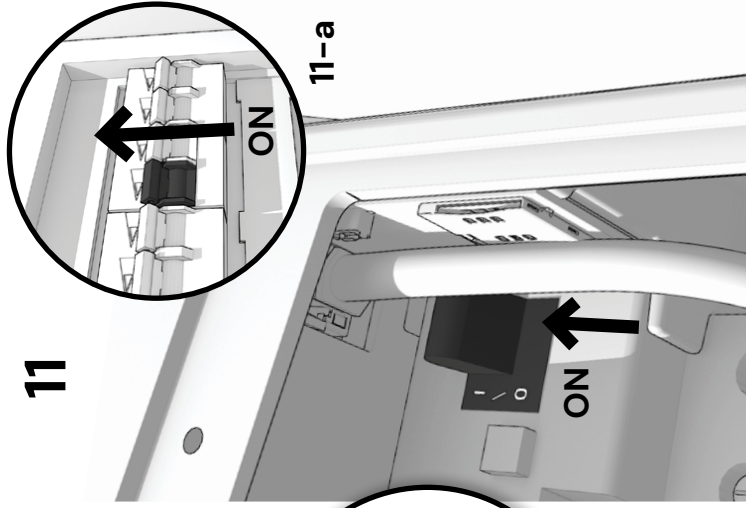
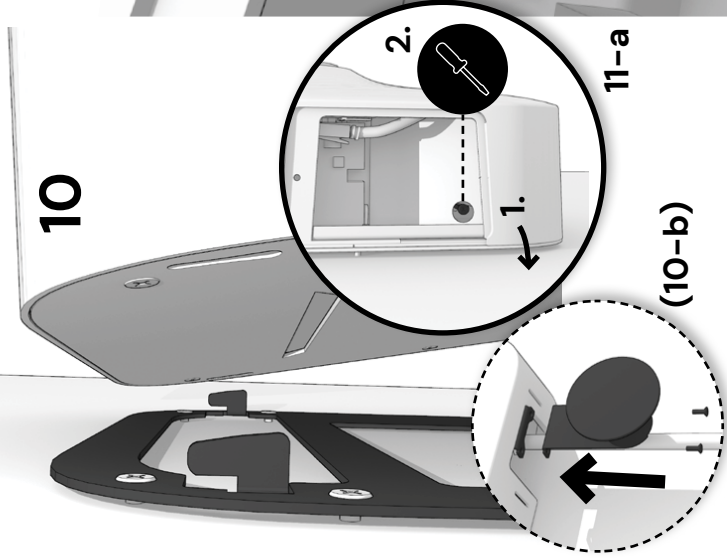




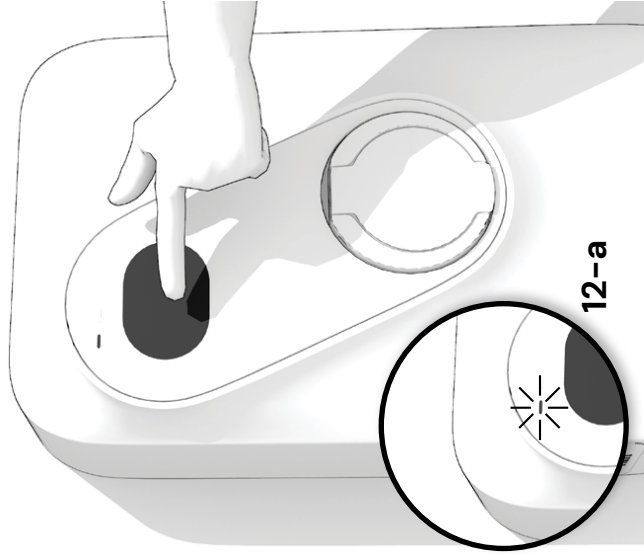






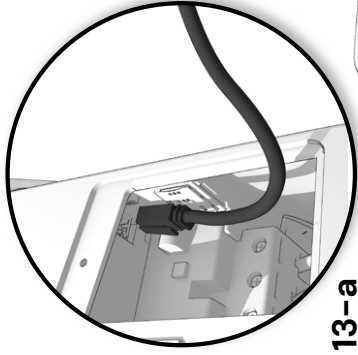


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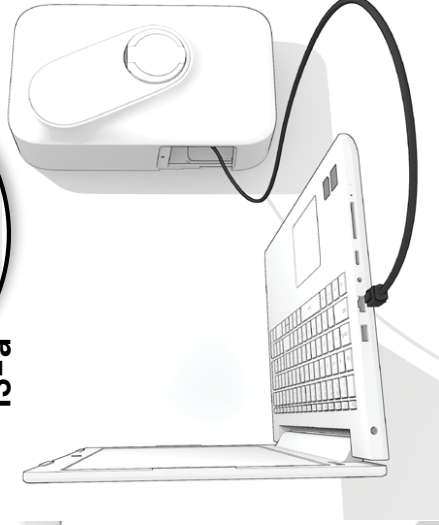


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Etrell d.o.o., Cesta ob Bregu 6, 1291 Škofljica, Slovenia (*hereinafter Etrell*), as manufacturer warrants this product to be free of any defects for a period of 3 years from the date of delivery.

WARRANTY CONDITIONS

- 1 The warranty period starts from the date of delivery of the new product by the authorized dealer.
- 2 The warranty is valid in the market where the product was sold. This warranty does not apply in the USA and Canada.
- 3 The customer invokes the warranty by submitting a warranty certificate, an invoice and a request for repair to the manufacturer or an authorized representative.
- 4 The customer is obliged to follow the user manual, as well as to ensure that the product is regularly maintained, serviced, and cared for.
- 5 If warranty case occurs, the customer shall submit a warranty claim for the repair of defects as soon as the customer discovers the defect. When carrying out a warranty repair, Etrell may either repair or replace the defective part as permitted by the law to ensure the fault-free operation of the unit. The replaced parts become the property of Etrell.
- 6 The warranty does not apply in the following cases:
 - A In case of incorrect, improper or unprofessional installation or connection of the product.
 - B In case of damage to the product as a result of a mechanical force.
 - C If the product has not been used in accordance with the user manual.
 - D In case of malfunctions or defects caused by the user or a third party.
 - E If regular service, maintenance checks and updates have not been carried out in accordance with the manufacturer's instructions.
 - F If the product was modified without the prior approval and consent of the manufacturer.
 - G In case an unauthorized person opens or dismantles parts of the product.
 - H If non-original spare parts have been installed in the product.
 - I In case of unstable power supply or force majeure.
 - J In case of inadequate or insufficient care of the product.
 - K In case of expected wear and tear.

- 7 Etrel shall provide maintenance and spare parts for the product for 3 years after the expiry of the warranty period, subject to payment.
- 8 The warranty applies solely to the characteristics and operation of the product free of any defects, and does not cover the installation of the product, nor does it cover the cost of repairs or consequential damages in the event of incorrect or unprofessional installation.
- 9 Regular maintenance of the product is not covered by the warranty.

IMPORTANT WARNINGS!



The product installation must be carried out by a professional, ensuring the product is installed properly, configured and connected in accordance with the user manual and all applicable technical regulations.

Always disconnect all power supply before servicing. Do not modify or tamper with the device. Ensure adequate ventilation.

A charging station is an electrical device that operates under high voltage. The manufacturer advises the documentation supplied with the product is carefully read before first use of the product.

All safety instructions and warnings must be carefully followed!

CHARGING STATION WITH A BUILT-IN NETWORK MODEM

The SIM card and the mobile network to which the device connects are provided by a third-party operator independent of Etrel. As a result, Etrel is not responsible for the availability or coverage of the mobile network.

Authorized service centre

Etrel d.o.o., Kamnik pod Krimom 142, 1352 Preserje, Slovenia, EU

Tel: +386 1 601 01 27 • **E-mail:** support@etrel.com

SAFETY INSTRUCTIONS

WARNING SIGNS

This manual uses the following warning signs:



Warning! Possible danger of electric shock.



Caution! Possible damage to the user, product, or impact on the environment.



Note. Useful information.

Please follow all the safety precautions in these installations at all times. Failure to do so might result in damage to the product and injuries or death. Any unauthorized modification or tampering with the product may void the product warranty.

SAFETY INFORMATION

The Etrel INCH Pro charging station has been designed and tested in accordance with current and past versions of international standards. The charging station is compliant with IEC 61851 international standard which defines conductive AC electric vehicle charging and supports Mode 3 charging for safe recharging of standard electric vehicle.

Requirements of Low Voltage Directive (LVD) and Electromagnetic Compatibility Directive (EMCD) are fulfilled; however, because radio equipment is installed in the station, the EU Declaration of Conformity should only state compliance with Radio Equipment Directive (RED).

SIMPLIFIED EU DECLARATION OF CONFORMITY

Manufacturer: Etrel d.o.o., Slovenia • <https://etrel.com>

Products: Etrel INCH Pro charging station

Applicable EU Legislation:

- Radio Equipment Directive (RED) 2014/53/EU
- As required by RED, essential requirements covering safety (LVD 2014/35/EU) and electromagnetic compatibility (EMC 2014/30/EU) are inherently included for radio equipment.

Harmonised Standards Applied:

EN IEC 61851-1, EN IEC 61851-21-2

EU Declaration of Conformity:

Etrel d.o.o. hereby declares under sole responsibility that the above-mentioned equipment INCH Pro charging station complies with the essential requirements and all other applicable provisions of the Radio Equipment Directive 2014/53/EU. The full text of EU declaration of conformity is available at the following address:

<https://etrel.com/inch-pro/>**"Technical information"****"Certificates"****INTENDED USE**

- The Etrel INCH Pro charging station is intended only for charging of electric vehicles and should not be used to charge other appliances or for any other purpose. The Etrel INCH Pro charging station is intended for conductive AC charging in accordance with IEC 61851 and supports Mode 3 charging.
- The manufacturer accepts no responsibility for damage or injuries resulting from incorrect installation or inappropriate use.

WARNING!

All electrical installation work must be performed by qualified personnel. Always disconnect power supply before servicing.

- Do not modify or tamper with the device.
- Ensure adequate ventilation.

INSTALLATION AND MAINTENANCE

- Do not install charging station near flammable, explosive, or combustible materials.
- Check mechanical stability, grounding and protective devices.
- Verify configuration before commissioning.
- The installation must be performed in dry weather conditions.
- Electrical installation, wiring, and connections must be carried out by a qualified electrician or technician in accordance with all local electrical codes, legislation, and ordinances.
- The charging station can be installed, maintained, and repaired by qualified personnel only.
- The charging station's power supply should always be switched off during maintenance and repair.

- Avoid hazardous risks. Only the manufacturer, an authorized service technician, or technically qualified personnel may replace a damaged charging station or its components.

OPERATION



- Do not operate your charging station if there is visible damage to the unit or charging cable. Contact the manufacturer's or reseller's support department for advice on how to proceed.
- Stop charging if warnings occur.
- Do not cover or expose to liquids.
- Inspect cable and enclosure regularly.
- Servicing must be carried out by authorized personnel only.
- Do not put fingers into the charging connector.
- Do not operate the charging station with wet hands.
- The charging station manufacturer cannot be made liable for damage or injury caused by improper handling, installation, or use of the product.
- Any usage of the product not covered in this document is not allowed and could cause injury or death.

BASE SPECIFICATION

ELECTRICAL CHARACTERISTICS

Three phase installation:

230 / 400 V ~ 3W + N + PE • 50/60 Hz • 32 A_{max} • Up to 22 kW
 230 / 400 V ~ 3W + N + PE • 50/60 Hz • 16 A_{max} • Up to 11 kW

Single phase installation:

230 V ~ 1W + N + PE • 50/60 Hz • 32 A_{max} • Up to 7.4 kW
 230 V ~ 1W + N + PE • 50/60 Hz • 16 A_{max} • Up to 3.7 kW

Supported grounding systems: TN-S, TN-C, TN-C-S, IT¹, TT¹

Rated current of each circuit (I_{nc}): Up to 32 A

Rated conditional short-circuit current of assembly (I_{cc}):

10.000 A – Applicable if fitted with RCD (Residual Current Device), MCB (Miniature Circuit Breaker), or RCBO (Residual Current Circuit Breaker with Overcurrent Protection)

Rated diversity factor (RDF): 1

MCB Rating: I_n = 40 A, Characteristic C

RCD & RCBO Rating: I_n = 40 A, I_{Δn} = 30 mA, Type A

DC Leakage Rating: I_{Δn} = 6 mA

Device power consumption: Up to 15 W²

¹ Location specifics and local regulations apply.

Consult a qualified electrical design engineer to ensure compliance.

² Applicable for idle state. Consumption depends on charging station configuration.

ENVIRONMENTAL CHARACTERISTICS

Ingress protection: IP56

Applies to the main enclosure only. The IP rating of the socket or cable may differ. Please refer to the rating marked on the specific socket or cable.

Impact protection: IK10

Protection class: Class I Equipment

Pollution degree: PD3

Overvoltage protection: OVC III

Electromagnetic compatibility (EMC):

EMC Emissions: Class B (*Residential*)

EMC Immunity: Class A (*Other than residential*)

FREQUENCY BANDS AND RADIO POWER

RFID Module:

Frequency band: 13.56 MHz (HF)

Transmitting power: Up to 8 dBm (*ISO 14443 and ISO 15693*)

LTE Module:

GSM, GPRS, EDGE: 850, 900, 1800, 1900

UMTS, SHPA: 800/850, 900, AWS 1700, 1900, 2100 MHz

Ethernet Module: 10M/100M

Wi-Fi Module: ¹

Frequency band: 2.4 GHz

Transmitting power: Up to 20.5 dBm (*Adjustable*)

Sub-GHz Module: ¹

Frequency bands: 868 MHz or 915 MHz

Transmitting power: 12.5 dBm

BLE Module: Bluetooth 5.0 (*Low energy*) ¹

Concurrent connections: 1

Range: 10 m

COMMUNICATION PROTOCOLS

OCPP:

OCPP 1.6 JSON (*All messages / methods supported*)

OCPP 2.0.1 support is available from firmware version 9.0 onwards.

ISO 15118-3: ISO 15118-3 compatible (*ISO 15118-2 support is available from firmware version 9.0 onwards.*)

MID Meter: Optional MID meter installed inside the charging station. Accuracy rating: Class 1 for active energy according to EN 62053-21 and class B according to EN 50470-3.

¹ Included modules vary according to charging station configuration.



OTHER CLASSIFICATION AND CHARACTERISTICS

AEVCS: Assembly intended for charging stations for electric vehicles. Permanently connected to AC supply network.

Installation location: Outdoor & Indoor

Mounting method:

Stationary equipment, floor or wall-mounted assembly.

Location accessibility:

Location with a restricted or non-restricted access.

Mechanical resistance: High

Installation: Must be performed by qualified personnel.

Operation: Intended for use by ordinary persons.

DIMENSIONS

Assembled charging station: 45 × 27 × 13.5 cm

Cable dimensions are not included in the dimensions specified.

Approximate height of the tidied up cable on holder is 50 cm.

MASS

Model with socket: ~ 8.2 kg *With packaging ~ 9.5 kg*

Model with 5 m cable: ~ 11.1 kg *With packaging ~ 12.7 kg*

Model with 7 m cable: ~ 12.3 kg *With packaging ~ 13.9 kg*

TEMPERATURE

Operating: -25 °C to +65 °C

Ambient: -25 °C to +40 °C ¹
-25 °C to +50 °C ^{1 2}

Storage: -30 °C to +70 °C



Adaptors or conversion adaptors are not allowed to be used.
Cord extension sets are not allowed to be used.

GROUNDING INSTRUCTIONS

Supported grounding systems: TN-S, TN-C, TN-C-S, IT³, TT³

The Etrel INCH Pro charging station must be properly grounded for safe use. In case of a malfunction or breakdown, grounding provides a protective measure to reduce the risk of electric shock. Improper connection to the grounding conductor may result in risk of electric shock. When in doubt, consult a qualified electrical design engineer to ensure that the product is properly grounded. Service doors, mounting bracket, and mounting pole must also be properly grounded.

¹ Without direct sunlight.

² With automatic derating limiting output current to 23 A.

³ Location specifics and local regulations apply.



ELECTRICITY PROTECTION ELEMENTS

Installation and grounding must be carried out in accordance with applicable local low voltage regulations!



Overvoltage protection: OVC III (*The use of additional upstream overvoltage protection is advised*).

Overcurrent protection: Should be installed upstream to protect the power supply cable.

Residual current protection: Must be provided in accordance with applicable local regulations. The use of an RCD in upstream is highly recommended.



The RCBO performs the function of overcurrent and differential protection and is an alternative to using two protection units, replacing the MCB and RCD.



The reduced-output (less than 22 kW) models retain the same internal protection design as the higher-capacity units. Installers must ensure proper coordination with upstream protective devices, as external breakers may respond more quickly under fault conditions. The station default setting monitors charging current and will stop the session if load exceeds 120 % of the active limit determined by settings, cable rating, or system configuration.

GEOGRAPHICAL RESTRICTIONS

The charging station can be used in the area of the European Union without risk of breaching the radio spectrum. For devices installed outside of European Union, this must be specified before the order.

COUNTRY SPECIFICS

Certified for use within the EU, this product complies with all relevant standards; however, certain region-specific requirements must still be considered when placing an order (e.g., German Eichrecht requirements). Ensure that these regional specifics are considered before putting the charging station into use. For use outside the EU, consult your distributor to confirm whether CE marking is sufficient.

CONTENT AND ACCESSORIES

- 1 × Charging station (*With Type 2 cable or Type 2 socket*)
- 1 × Wall mounting bracket
- 9 × Wall plugs for mounting the bracket to the wall using screws
- 9 × Screws to mount the bracket to the wall
(*Screws dimensions: 4.5 × 40 and 4.5 × 60 mm*)
- 1 × Cable gland rubber seal for smaller cable dimensions
- 9 × Wall spacers¹
- 2 × Keys to open the side maintenance door¹
- 1 × Means of opening the maintenance doors¹
- 1 × Magnetic cable holder¹

¹ Optional, depending on the purchased model's configuration.

INSTALLATION PROCEDURE



Read the following instructions together with the corresponding images at the beginning of this document. The number to the left of each step corresponds to the image number.



Use cables with stranded wire for all wiring connections.

Equipment needed: Phillips screwdriver, utility knife, crimping pliers for cable end sleeves, wire strippers, and cable rippers.

1 Wall Preparation



Measure and mark the positions for drilling the holes for the wall mounting bracket. The wall mounting bracket should be installed at **100 cm** measuring from the ground to the bottom of the bracket. This ensures the easiest way of inserting the cable and operating the LCD screen.

Make sure that the charging station holder is attached to the mounting bracket when marking the spots for the screws. The holder will prevent any bending of the mounting bracket so that the holes will be marked at the correct positions when used.

If power supply cables come through the wall, a hole for the power supply cables needs to be drilled first.

1-a Drill the hole in the position shown in the image. The hole must be big enough to manage the cables after they are pulled through.

1-b Drill 9 holes for screws and insert an anchor screw in each hole.

A2 Power Supply Cable Preparation



Pull the power supply cable through the drilled hole in the wall if the cables need to go through the wall. If cables are connected to the charging station from above or below, enough length of the cable should be provided. Extra cable length available for the installation should be around **40 cm**.

Align the holes of the mounting bracket with the drilled holes and tighten the screws using a **Phillips-head screwdriver**.

B2 Alternative Power Supply Cable Preparation



When supply cables come from below the charging station, the station allows easy insertion into the connection area. Extra cable length available for the installation should be around **40 cm**.

- B2-a** If the cable is routed to the back of the charging station from above, install a cable raceway as shown in the image. Also install wall spacers (available separately) and secure them into the holes as shown.

3 Removal of Maintenance Doors and Cable Gland Plate

Unscrew and remove the back and the side maintenance doors. Depending on the door type, use a Phillips-head screwdriver, security hex key, or key.

- 3-a** Loosen the screws on the plate with cable glands and remove the plate.



If using the bigger gland, make sure that the rubber inside the gland is of the correct size. For cables with dimensions up to **5×6 mm²**, use the tighter rubber seal. For cables with dimensions of **5×10 mm²**, use a looser rubber seal, which should already be installed in the gland by default.

Replace the rubber seal by unscrewing the plastic gland top and simply pushing the rubber seal out of the gland. After the new rubber seal is inserted into the cable gland, screw the plastic gland top back on.

4 Wires Preparation



Proceed with preparation of cables. Prepare the power supply cables by removing around **15 cm** of cable jacket. This ensures that the wires are long enough to connect to the elements inside the charging station.

Pull the power supply cable through the gland. Ensure that approximately **15 cm** of power supply cable and approximately **2 cm** of cable jackets are pulled to the other side of the gland. This will make cable manipulations inside the charging station easier and completely seal the gland. Make sure that the cable is secured firmly in the gland so that it cannot be pulled out. Tighten the gland by turning the plastic gland top clockwise.

- 4-a** Strip the insulation from the wires using appropriate pliers. Attach ferrules to the wire ends and a cable ring to the grounding wire.

If Ethernet is used for physical connectivity for communication, prepare the UTP cable in the same manner. First, remove the gland filler from the UTP gland rubber.

Remove the gland cap by unscrewing it counter-clockwise and simply push the filler out. Insert the rubber back into the gland as it will likely come out together with the filler.

Insert the UTP cable through the gland and remove its cable jacket. Approximately **17 cm** of the UTP cable should be pulled through the gland. Once pulled through, attach a connector to the UTP cable. Use straight connections of UTP wires, without wire cross-over. To boost EMC immunity we recommend using an STP cable with a metal RJ45 connector.

- A Power supply (L1, L2, L3, N):** 2 cm + 15 cm without cable jacket
- B Grounding cable (PE):** 10 cm
- C Ethernet cable (UTP):** 17 cm

5 Mounting the Charging Station on the Holder and Screwing the Cable Gland on the Enclosure

Mount the station on the holder which is already attached to the mounting bracket. The holder is strong enough to hold the charging station during the installation of cables.

Place the gland plate in its position so that the plate holes are aligned with the holes of the enclosure. Make sure that the cables are long enough to connect. Screw in the gland plate using a Phillips-head screwdriver.

6 Securing the Grounding Wire

Attach and tighten the grounding conductor. There will not be enough space to do so afterwards.

7 Connecting the Connection Element

Connect the wires to the RCD / MCB / RCBO / MID-Meter unit according to the markings on the connectors. Tighten the connector screws to the recommended torque.

When connecting a charging cluster of single-phase charging stations, ensure that all phases of the grid are equally utilized.

Recommended torque values ¹

MCB	2 Nm	RCBO	2.5 Nm
RCD	2 Nm	MID	3–3.5 Nm

¹ Components from different manufacturers may require different torque specifications.

8 Connecting the Ethernet UTP Cable and Inserting the SIM Card

Connect the Ethernet UTP cable into the Ethernet connector next to the protection element. If you are installing a model with mobile data communication, insert the SIM card into the SIM card holder.

9 Attaching the Maintenance Doors and Removing the Holder

Attach the back maintenance door back onto the enclosure and use the screw to secure it.

- 9-a** Remove the charging station off the holder and remove the holder from the bracket. Hold the charging station firmly as it is no longer supported.

10 Attaching the Charging Station to the Wall Bracket

- 10-a** Attach the charging station to the wall bracket. First attach it to the top hooks and gently push it towards the wall. Tighten the screw until it is completely fastened and the charging station is secured to the wall.

10-b Installing the Magnetic Cable Holder ¹

Attach the cable holder after you remove the charging station from the station holder. To do so, align the holes on the cable holder hook with holes on the plate attached to the enclosure.

11 Checking Whether the Charging Station is Working Properly

If the charging station has either an MCB, RCBO or RCD device installed, make sure that the protection element is switched on.



Ensure adequate insulation resistance and protective earth conductivity. Test voltages and expected results are specified in the IEC 60364 standard. The test voltage for measuring insulation resistance must be set to 250 V DC to avoid damage to protective elements. The station's varistors may affect the measurement results or be damaged if tested with higher voltage.

- 11-a** Switch on the power supply in the electrical cabinet.

¹ Applies only to attached cable models.

12 Powering up the Charging Station for the First Time

The first boot of the charging station can take up to 10 minutes. Make sure that the status light above the LCD screen is solid green, indicating that the charging station is ready to charge an EV. Follow the instructions on the LCD screen to start charging.

13 Connecting to the Charging Web Interface

The device operator can connect to the charging station's web interface via Ethernet connection and PC to configure the charging station. The default **username and password** are available on the charging station's maintenance doors.



More documentation, warranty certificates, and troubleshooting are available at:

<https://etrel.com/inch-pro/>

DISPOSAL (WEEE) AND ENVIRONMENTAL COMPLIANCE

This product is electrical/electronic equipment. At the end of its service life, do not dispose of it with household waste. Follow the symbol and take the product to a designated waste collection centre in accordance with local regulations. Dispose of the device only at the recycling centre.

www.etrel.com

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This guide applies to all G-PDXXXXXX-XXX configurations