TOMMATECH GmbH
GERMAN-based company

Contents

1. Note on the Guide

1.1. Scope of Validity

This guide is an integral part of the TommaTech Likya AC Vehicle Charging Devices Series. It explains the product's assembly, installation, commissioning, maintenance, and fault conditions.

Please read carefully before using the device.
Keep this guide in a place where it is always accessible.

1.2. Target Group

This guide is intended for qualified electricians. The tasks described in this guide may only be carried out by qualified electricians.

1.3. Symbols Used

This document contains the following types of safety instructions and general information as explained below:

DANGER!
"Danger" indicates a hazardous situation which, if not avoided, will result in death or serious injury.

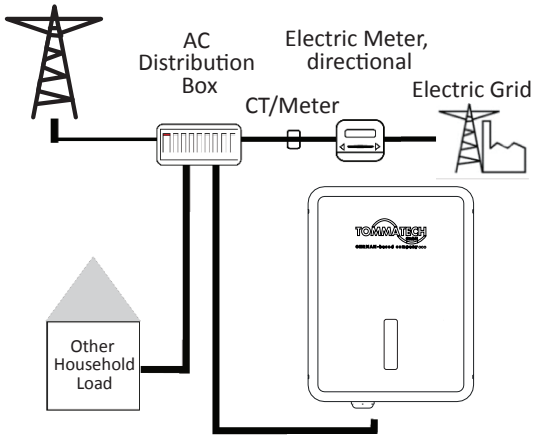
WARNING!
"Warning" indicates a hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION
"Caution" indicates a hazardous situation which, if not avoided, may result in minor or moderate injury.

2. Safety

2.1. Proper Use

The TommaTech Likya AC Vehicle Charging Devices Series are AC EV chargers intended to be installed in a fixed location and connected to an AC power supply.



Communication with the Grid

2.2. Important Safety Instructions

DANGER!

Due to the high voltages of the outputs and inputs in this device, there is a risk to life!
*All operations must be carried out by a qualified electrician with knowledge and experience in electrical installations.
*The device must not be used by persons with reduced physical, sensory, or mental capabilities, or by those lacking experience and knowledge, unless they are supervised or instructed.
*Children must be supervised to ensure they do not play with the device.

CAUTION!

*Risk of burn injuries due to hot enclosure parts!
*EV chargers may become hot during operation.

CAUTION!

Incorrect use or improper operation may result in:
*Injury or death of the operator or third parties.
*Damage to the device and other property belonging to the operator.
*Inefficient operation of the device..

WARNING!

*Risk of electric shock!

*Before application, please read this section carefully for correct and safe operation, and keep the user manual properly.
*Use only accessories recommended or sold by Tommatech GmbH. Otherwise, it may cause fire, electric shock, or personal injury.
*Ensure that the existing cable installation is in good condition and that the cable is not smaller than required.

Do not disassemble any part of the EV charger that is not specified in the installation manual. It contains no user-serviceable parts. For service instructions, refer to the Warranty. Attempting to service the EV Charger Series yourself may cause electric shock or fire risk and will void your warranty.
To prevent fire hazards, keep away from flammable or explosive substances.
The installation site must be free from moisture and corrosive materials.
Authorized service personnel must use insulated tools when installing or working with this equipment.
Do not use the EV Charger if there are defects, cracks, wear, exposed leakage, etc. In such cases, contact the operating personnel.
In the event of any emergency, disconnect all input and output power supplies.
The electric vehicle must not be allowed to move during charging. Charge only when the electric vehicle is stationary. For hybrid vehicles, charge only when the engine is turned off.

2.3. Explanation of Symbols:

- This section provides the description of all symbols shown on the type label of the EV charger.

Symbol	Description
	High voltage hazard. Risk to life due to high voltages in the EV charger!
	Danger. Risk of electric shock!
	The EV Charger must not be disposed of with household waste. Used electrical devices must be collected separately and recycled in an environmentally friendly manner. This device complies with the Regulation on the Control of Waste Electrical and Electronic Equipment. Complies with the WEEE Directive.
	The EV Charger is recyclable.
	Do not expose to direct sunlight.

3. Introduction

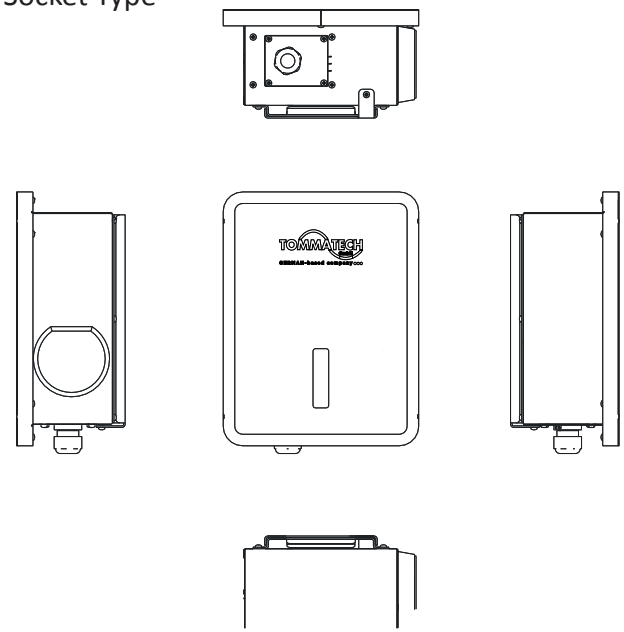
3.1. Basic Features

Thank you for purchasing the Tommatech GmbH EV Charger Likya Series. The Tommatech GmbH EV Charger Likya Series can be used to charge your electric vehicle at home. Devices in this series can operate in both three-phase and single-phase modes. They are also suitable for personal use; for detailed information, please consult our dealers. The features of the device are listed below.

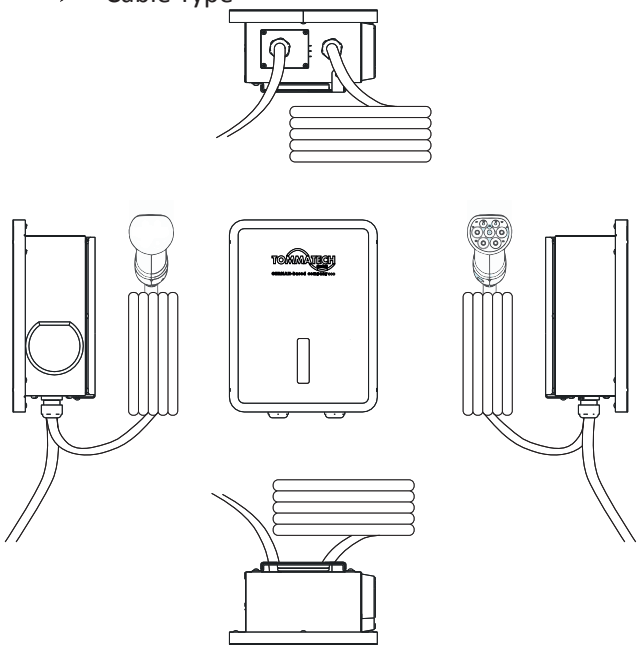
Socket or cable selectable,
Built-in 30 mA type A RCD and 6 mA DC protection,
Integrated PEN protection without grounding rod,
Bluetooth-based encrypted communication,
Device status notification with LED,
Easy installation for indoor and outdoor use,
Configuration start/stop via mobile application.

3.2. Dimension

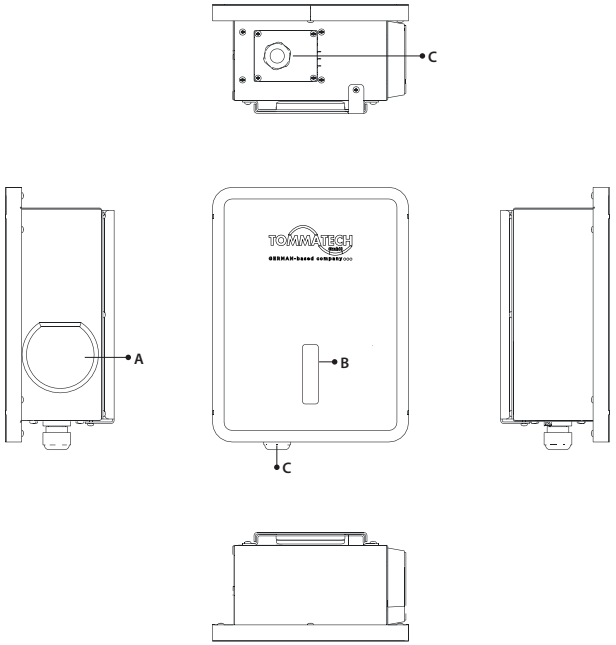
➢ Socket Type



➢ Cable Type



3.3. Product Description



OBJECT	Name	DESCRIPTION
A	Charging Connection Base	For connecting the charging connector.
B	LED Indicator	Red LED status: The red light turns on when an error occurs.
		Green LED status: Ready for charging.
		Purple LED status: Socket connection established.
		Turquoise LED status: Occurs when the start command is sent to the device and remains until the charging process begins. It notifies the user that the start command has been delivered to the device.
		Blue LED status: Indicates that the charging process has started and is in progress.
C	Connector (AC input)	INPUT: For AC input connection

Likya AC Vehicle Charger 22 kW	
Model	Likya AC Vehicle Charger 22 kW
Vehicle Connection Interface	Type2 (IEC 62196) Female Socket
Voltage Current Ratings	220VAC 50/60Hz 1-Phase 32A 380VAC 50/60Hz 3-Phase 32A
AC Maximum Charging Power Output	22kW
Built-in Residual Current Detection Module	AC-30mA / DC-6mA
Required Circuit Breaker for AC Grid	2P–40A–30mA Type-C / Single Phase Usage 4P-40A 30mA Type-C / Three-Phase Usage
Required Residual Current Device (RCD) for AC Grid *	2P–40A–30mA RCCB Type-A / Single Phase Usage 4P-40A-30mA RCCB Type-A / Three-Phase Usage
AC Grid Cable	3x6mm² / Single Phase Usage 5×6mm² / Three-Phase Usage
Status Notification	LED
Protection Temperature	70˚C
Connection	Three-Phase / Single-Phase
Communication	Bluetooth
Identification	–
Software Update	ISP
Authorization	Mobile

**The protections marked with an asterisk are mandatory for device and human safety.*

3.4. Product Standards

The Likya AC Vehicle Charger Series has been designed and manufactured in compliance with the European Union directives and related standards listed below:

Regulations:

. 2014/30/EU Electromagnetic Compatibility (EMC) Directive

. 2014/35/EU Low Voltage Directive (LVD)

Applied Standards:

. EN 61851-22:2002 — Charging systems for electric vehicles — Specific requirements for AC charging systems.

. EN IEC 61851-21-2:2021 — Electric road vehicles — EMC requirements — Specific conditions for equipment used during charging.

Within this scope, the device series has been tested and evaluated to ensure compliance with current legislation and technical standards in terms of both safety and electromagnetic compatibility.

6. (The visuals of the mobile application need to be updated)

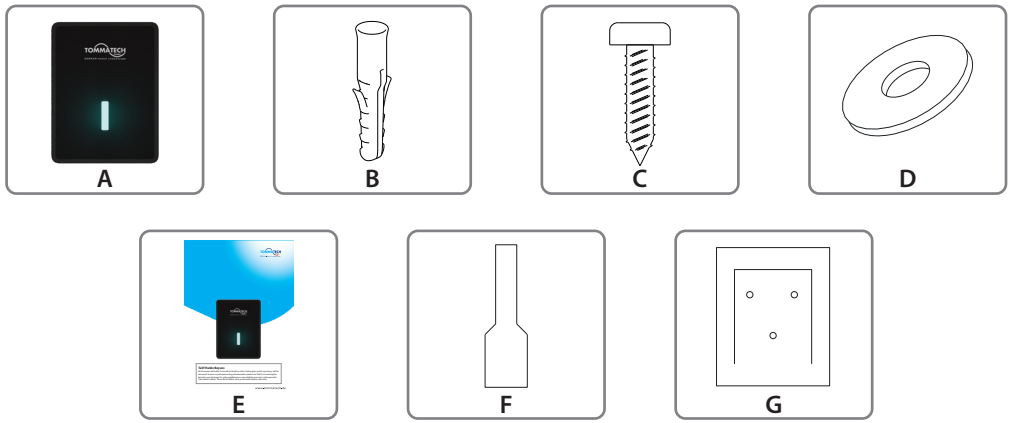
4. Installation

4.1. Inspection of Transport Damage

Ensure that the EV chargers are intact during transport. If there is any visible damage such as cracks, please contact your dealer immediately.

4.2. Packing List

Open the package and take out the product, then check the accessories first.



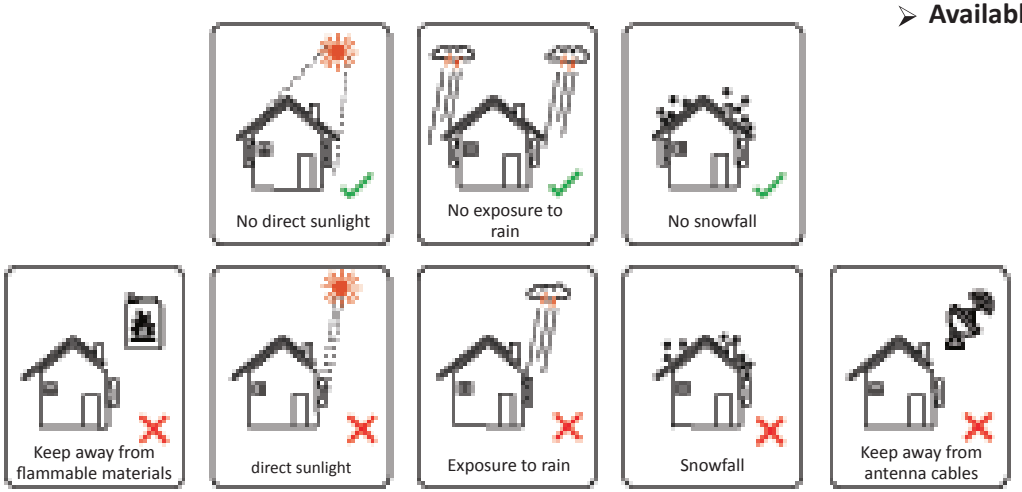
Object	Amount	Description
A	1	EV Charger
B	3	Dowel
C	3	Self-tapping Screw
D	3	Washer
E	1	User Manual
F	5	Cable Lug
G	1	Wall Mounting Bracket

4.3. Installation Precaution

The EV charger is designed for wall-mounted installation (IP 54). Ensure that the installation site meets the following conditions:

- Must not be exposed to direct sunlight.
- Must not be used in areas where highly flammable materials are stored.
- Must not be installed in areas with explosion risk.
- Must not be located near a television antenna or antenna cable.
- Must not be used at altitudes above approximately 2000 m.
- Must not be used in rainy or humid environments (%5 to %95).
- Ensure adequate ventilation.
- Ambient temperature must be within the range of -30°C to +50°C.
- Wall inclination must be within ±5°.

The wall on which the EV charger is to be installed must meet the following conditions:
1)Solid brick/concrete or an installation surface with equivalent strength;
2)If the wall strength is insufficient (such as a wooden wall or a wall covered with a thick decorative layer), the EV charger must be supported or reinforced.



➢ **Available Space Dimension**

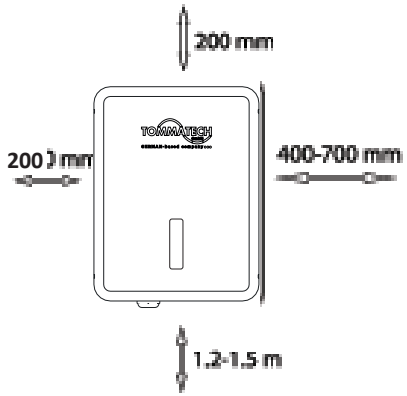


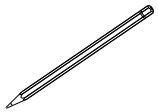
Table: Available Space Dimension

Position	Minimum Dimension
Left	200 mm
Right	400-700 mm
Up	200 mm
Down	1.2-1.5 m
Front	300 mm

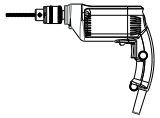
4.4. Installation Steps

Preparation:

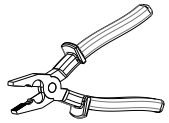
- The following tools are required before installation:



Pencil

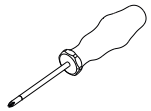


Drill

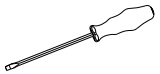


Wire Stripping Pliers

Ferrule Crimper

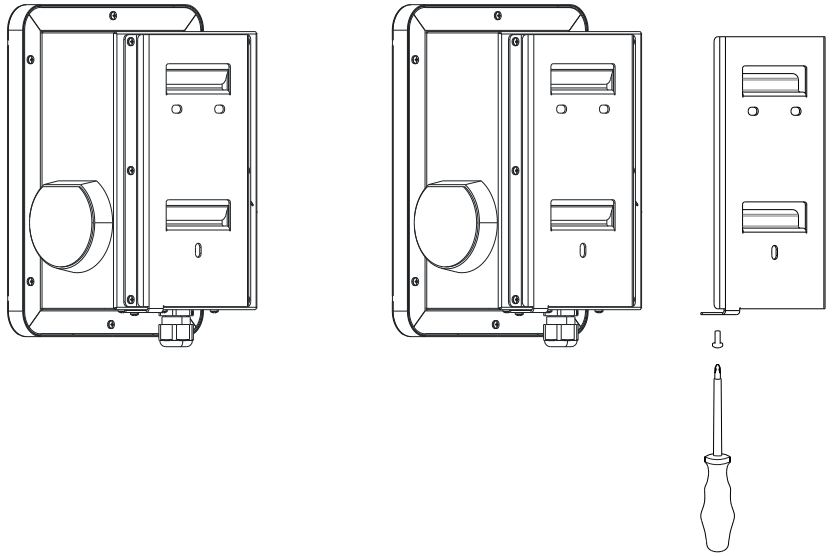


Phillips Screwdriver



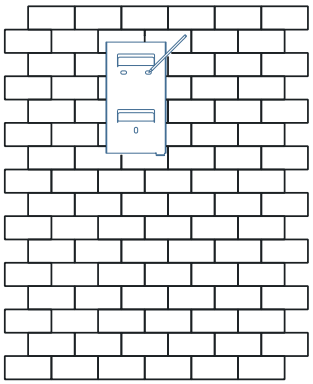
Flathead Screwdriver

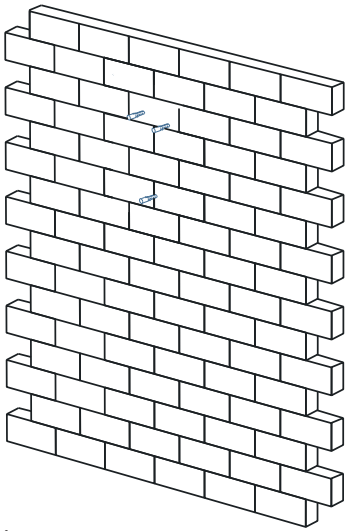
STEP 1: Remove the screw on the EV Charger using a Phillips screwdriver. Then carefully remove the rear bracket.



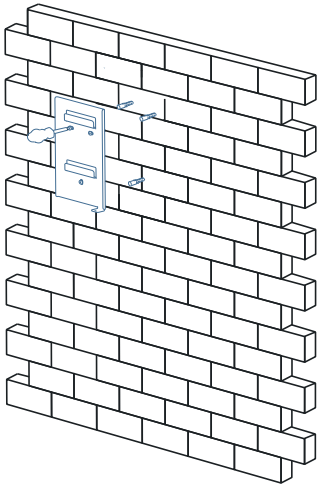
STEP 2: Fix the rear bracket to the wall.

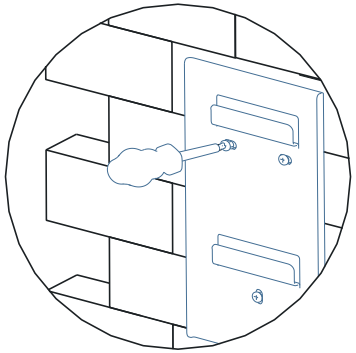
- Mark the positions of the holes.
- ϕ 8 Drill the holes with an 8 mm drill.
- Insert the dowels into the wall.
- Depth: at least 45 mm.





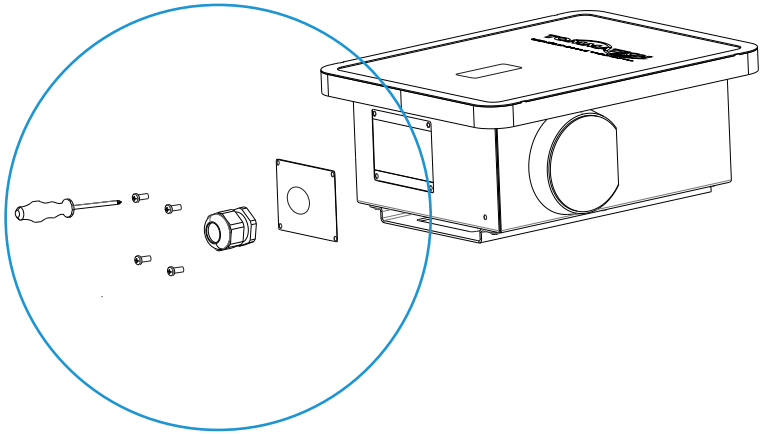
Align the bracket with the holes and screw in the self-tapping screws using a Phillips screwdriver.



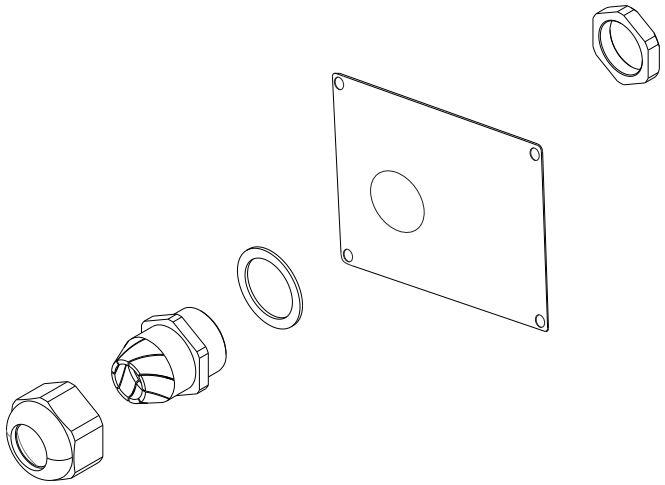


STEP 3: Hang the EV Charger on the wall for testing, then estimate the required input cable length. After that, remove the EV Charger..

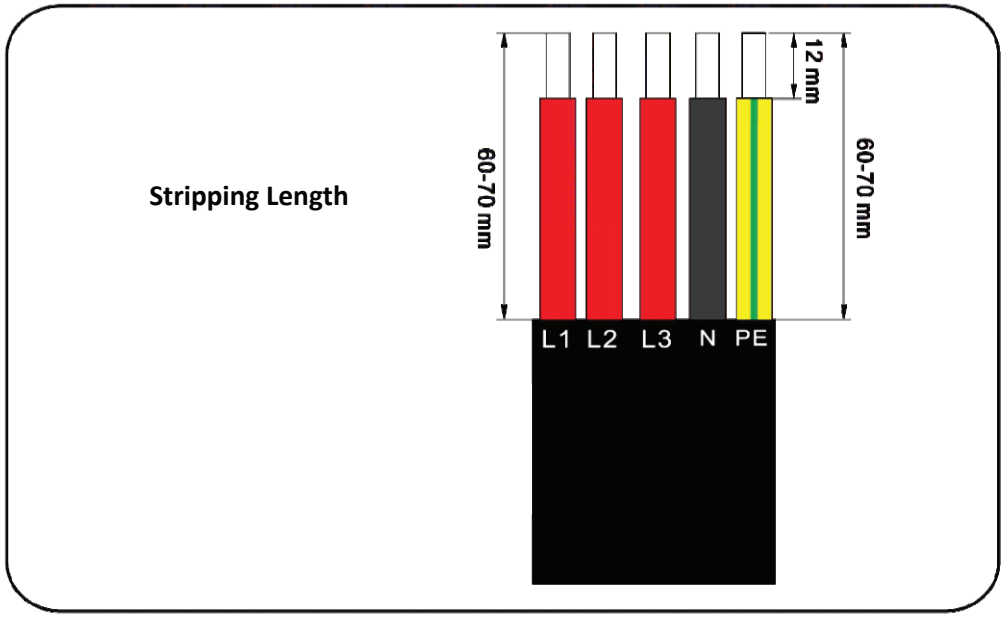
STEP 4: Unscrew and remove the back cover of the EV Charger using a Phillips screwdriver. Then loosen the fixing caps and remove the waterproof materials as shown below.



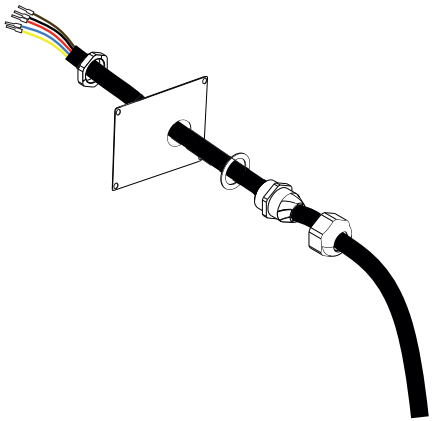
STEP 5: Unscrew the screw of the power input cover using a Phillips screwdriver. Then pull out the power input cover.



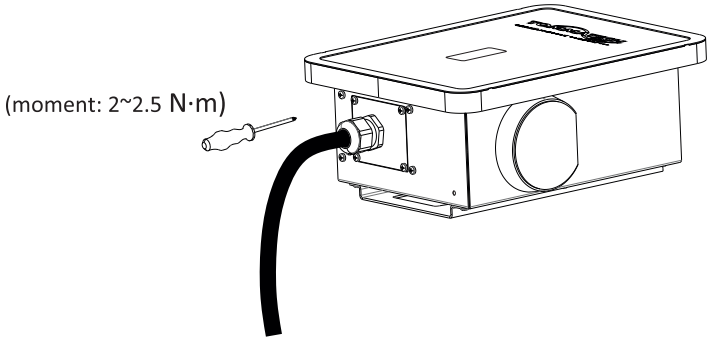
STEP 6: Strip the outer sheath of the input cable to a length of 60–70 mm, ensuring that all cables can reach the terminal blocks with a little extra length. Strip 12 mm of insulation from the ends of all colored wires as shown below. Then crimp the ferrules using the ferrule crimper.



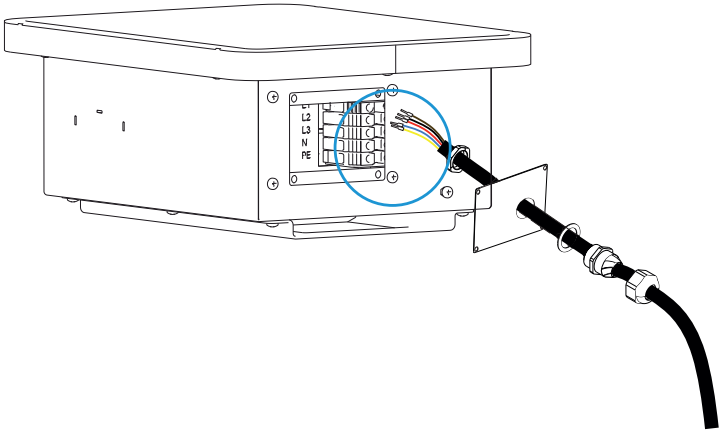
STEP 7: Pass the input cable through the waterproof connector as shown below.



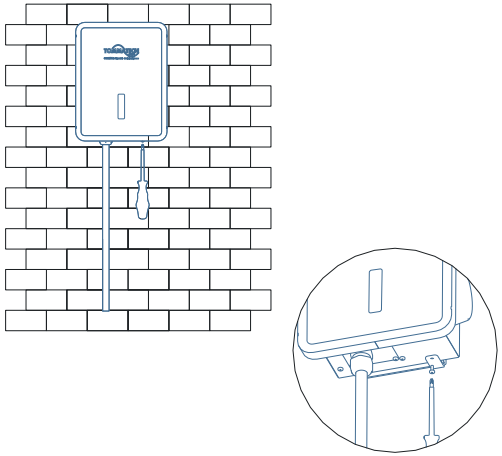
STEP 9: Push the power input cover cables into the proper position and tighten the self-tapping screws with a Phillips screwdriver. Then tighten the waterproof fixing head.



STEP 8: Insert the cables into the appropriate holes of the terminal blocks, then secure the terminals with a flathead screwdriver.



STEP 10: Carefully hang the EV Charger and secure it with self-tapping screws using a Phillips screwdriver.



4.5. Operate the EV Charger

Start the EV Charger after checking all the following steps:

- a) Check that the device is operating.
  b) Check that the AC cable is correctly connected to the grid.

- Start the EV Charger
  a) Check the status of the LED indicators. When the EV Charger starts normally, the green light should turn on.
  b) If the light does not turn on, please check that it is properly plugged in and connected to the power supply.

WARNING!!

Power to the unit should only be turned on after installation is completed. All electrical connections must be carried out by authorized personnel.

5. Operating Method

5.1. Device Status Notification

Two statuses can be set for EV chargers.

5.2. Startup Modes

The EV Chargers have two startup options: Plug & Play Mode and Control Mode. Plug & Play Mode is the default mode. For Control Mode, the AC EV Charger Controller mobile application must be obtained.

1)Plug & Play Mode

In this mode, the user configures the settings once through the mobile application. The device saves the settings, which can be modified later via the application if needed. The device is limited to 32 amperes. You can select the current suitable for your electrical line through the application.

2)Control Mode

The user requires the application for charging operations. Without the start charging command from the application, the process will not take place. In this way, the user secures the product against usage outside of personal use.

6. Application Setting

Application Name: AC EV Charger Controller
Application Purpose: To control TommaTech Likya AC Vehicle Chargers.

Application Features:

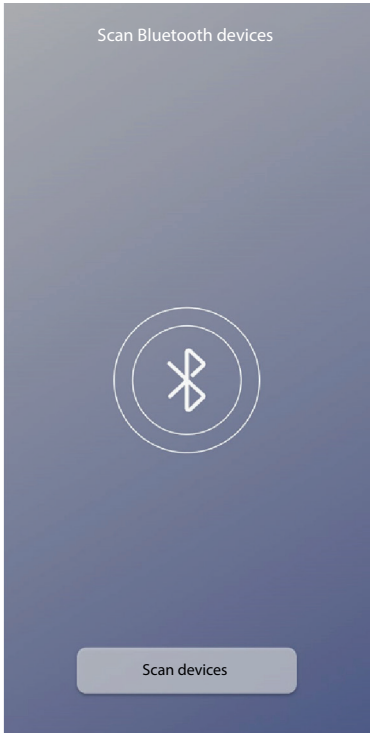
-The application automatically detects the language set on the user's phone and operates in that language without the need for a language selection screen.
-Device security is ensured through Bluetooth encryption via the application.
-The charging current for the vehicle can be selected through the application.
-The application controls the operating mode of the charger. The device has two different user modes:

- Plug & Play Mode <- In this mode, the user configures the settings once through the application. The device saves the settings and can be used without the application.
- Control Mode — The user requires the application for charging operations. Without receiving the start charging command from the application, the process will not take place. In this way, the user secures the product against usage outside of personal use.

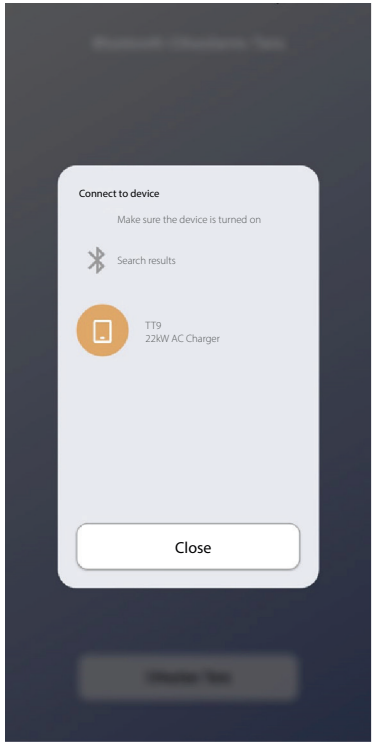
Phase Selection	Current Selection	Power Output
Single Phase	6A	1.350kW
	10A	2.3kW
	16A	3.7KW
	32A	7.4KW
Three Phase	6A	4.150kW
	10A	7kW
	16A	11kW
	32A	22kW

The device is designed to operate in both single-phase and three-phase modes. This transition is carried out manually by changing the cable connection during installation. The phase selection offered in the application is included so that you can view the power information delivered to your vehicle according to your connection type.

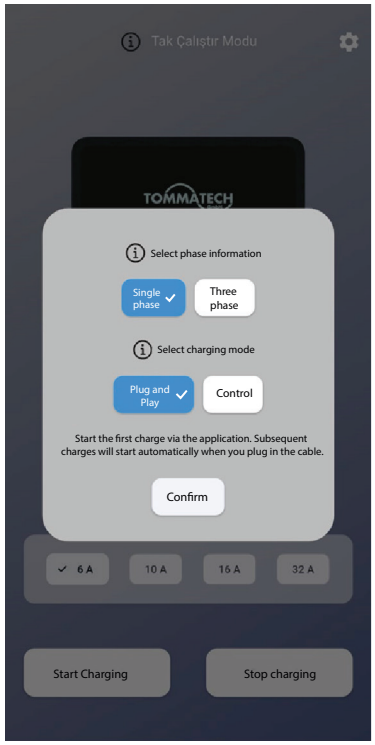
1- The application opens with the Bluetooth screen.



2- Devices named TommaTech are being filtered.

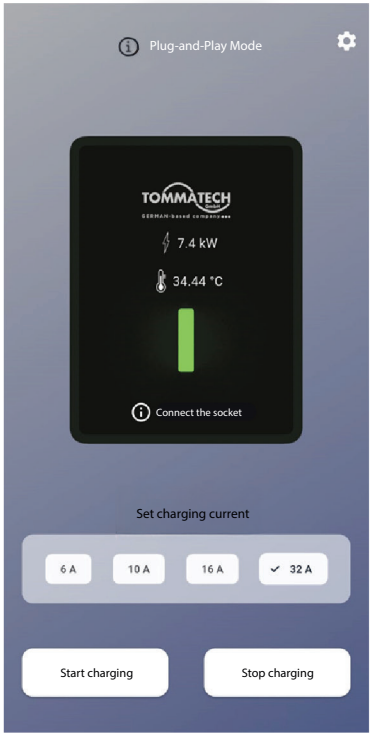


3- Devices connected via Bluetooth first prompt the user to select phase and mode settings. After the selections, the user is directed to the main screen.

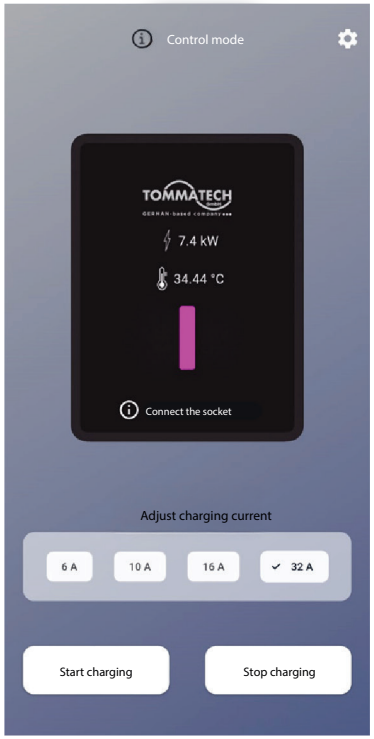


⚠ ***Phase selection is used in the application for displaying the kW value. For phase change of the device, the grid connection must be modified.**

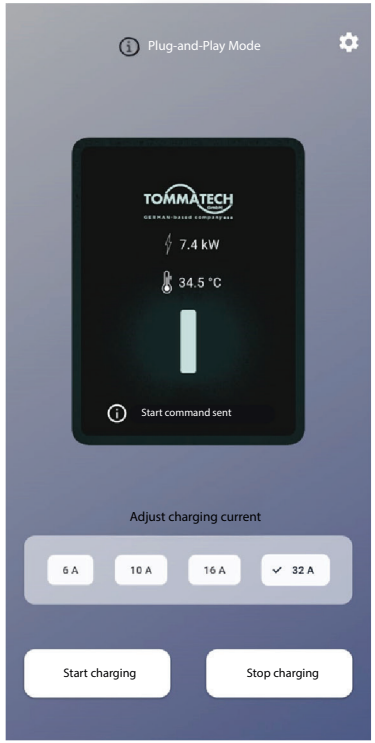
4- The user can control the current value at which they want to charge their vehicle through the main screen.
The charging status can be monitored via the device's LED colors and the description text.



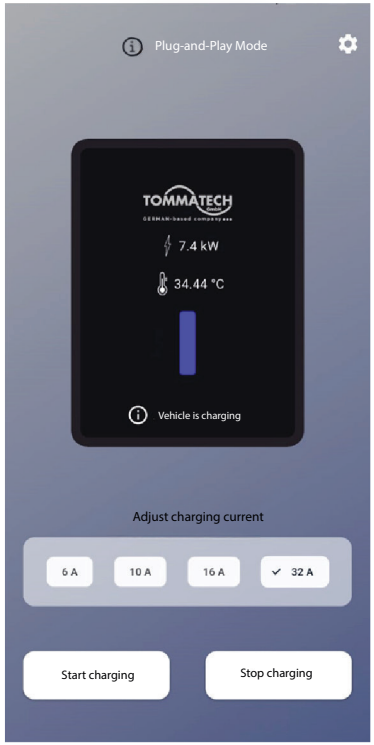
-Green LED status
Ready for charging.



- Purple LED status
Socket connection established.



- Turquoise LED status
Occurs when the start command is sent to the device and remains until the charging process begins. It notifies the user that the start command has been delivered to the device.



-Blue LED status
Indicates that the charging process has started and is in progress.

7. Decommissioning

-Disconnect the EV Charger from the grid.
-Wait 5 minutes for the power to discharge.
-Remove the EV Charger from the bracket.
-Remove the bracket if necessary.

7.1. Packaging

If possible, please pack the EV Charger with its original packaging.
If it is no longer available, you may also use an equivalent cardboard box that meets the following requirements:
-Suitable for loads over 10 kg.
-With handles.
-Fully sealable.

7.2. Storage and Transport

Store the EV Chargers in a dry place where ambient temperatures are always between -30°C and +50°C. Handle the EV Chargers with care during storage and transport, and keep fewer than 4 cartons in a stack.

7.3. Disposal of the EV Charger

When the EV Chargers or other related components need to be disposed of, ensure that it is done in accordance with local waste management regulations.
Please make sure to deliver waste EV Chargers and packaging materials to a designated location or department that can assist with proper disposal and recycling.

8. Warranty

1.Including but not limited to problems, defects, and malfunctions caused by external factors such as power outages, power surges, lightning, explosions, fire, flood, earthquake, typhoon, hurricane, tornado, volcanic eruption, tsunami, lightning strikes to the products, accessories, or their surroundings, snow and salt damage, weather and natural events, natural disasters, acid rain, smoke, problems caused by air pollution or other contaminants, dirt or dust on products and accessories, intentional or negligent damages and actions by the user or third parties, negligent or intentional accidents, force majeure, and other unforeseeable circumstances.
2.Problems, defects, and malfunctions occurring beyond the control of TommaTech GmbH.
3.Product misuse, user errors.
4.Defects, problems, and malfunctions arising from use outside the product's design or intended purpose.
5.Improper, incorrect, or unauthorized installation, commissioning, maintenance, operation, or modification.

6. Defects caused by damage from animals, rodents, or insects.
7. Problems, defects, and malfunctions resulting from the removal of the products, accessories, and/or their mechanisms, utilities, parts, or equipment.
8. Insufficient ventilation and circulation leading to reduced cooling and natural airflow.
9. Installation in a corrosive environment.
10. Damages occurring during the transportation or handling of the products.
11. Bodily (death, injury, etc.) or material damages occurring to living or non-living entities.
12. Malfunction of the product's display not caused by manufacturing defects.
13. Use of the products for purposes other than charging an electric vehicle.
14. Failure to properly and timely maintain the equipment.
15. Intervention, disassembly, reinstallation, replacement, maintenance, handling, or modification of the product or its components by persons other than TommaTech GmbH or its authorized personnel.
16. Breakage, cracking, or damage to the products caused by external impacts or factors.
17. Alteration, deletion, or illegibility of the product's model, type, label, or serial number.
18. Use of the products in a way that infringes on intellectual property rights such as patents, utility models, trademarks, copyrights, or design rights of TommaTech GmbH or third parties.
19. Errors, problems, and malfunctions arising from the installation, commissioning, or application of the products or other related products, materials, and accessories specified in these warranty conditions.
20. Problems, defects, and malfunctions caused by other products and materials.
21. Problems, defects, and malfunctions arising from the use of products and accessories on mobile units including, but not limited to, vehicles and ships.
22. Expiration of the product's warranty period.
23. Failure to return the replaced or substituted products to TommaTech GmbH or its cooperating distributors within 15 (fifteen) days after the relevant request from TommaTech GmbH.
24. Problems, defects, and malfunctions caused by transportation or improper storage conditions of the product.
25. Problems, defects, and malfunctions arising from locations and installation areas unsuitable for the features of the products and accessories.
26. Problems, defects, and malfunctions in the products and the systems in which they are used, caused by the electrical infrastructure of the installation site.
27. Problems, defects, and malfunctions resulting from installation and applications not in accordance with the product instructions, user manuals, safety rules, and labels on the products.
28. Alteration, deletion, or illegibility of the product's model, type, label, or serial number.
29. Relocation of the product from its original installation site.
30. Failure to notify TommaTech GmbH of the product malfunction immediately after its occurrence.

31. Errors or defects caused by third-party embedded or external software or hardware (e.g., devices controlling inverters or devices controlling battery charging or discharging) without the written permission of TommaTech GmbH.
32. Modification, tampering, or alteration of the product.
33. Normal and reasonable wear and tear.
34. Taxes, import/export fees or costs, and other general administrative costs.

TommaTech's liability under this warranty shall be limited to replacement and/or repair. Furthermore, TommaTech's total liability under these warranty terms shall not exceed the purchase price of the Product claimed to be defective under warranty.

This Warranty Policy does not cover materials or equipment not manufactured by TommaTech GmbH, nor defects and malfunctions that may occur in such materials and equipment for any reason. This Warranty Policy does not cover claims and demands relating to cosmetic or surface defects, dents, marks, or scratches on the product that do not affect the proper functioning of the product.

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