

# INSTALLATION MANUAL



# POLE

## USER MANUAL

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V2C bears the CE mark. The corresponding Declarations of Conformity are located at V2C.



This product meets the requirements of the ROHS Directive (2011/65/CE). The corresponding Declarations of Conformity are located at V2C.

#### Disposal Information



The above symbol, the crossed-out trash container, indicates that electric appliances and electronic devices including accessories (EEE), the electrical and electronic equipment of the electric charging station, as well as its accessories, shall be disposed of separately from general household waste. You will find more information about this in the operating manual or in the packaging of the product. The materials are recyclable according to their labelling. Reuse, material recycling and other forms of recycling used equipment contribute considerably to protecting our planet.

## 1 INDEX

1	INDEX.....	3
2	IMPORTANT INFORMATION.....	4
2.1	SAFETY INSTRUCTIONS.....	4
2.2	INTENDED USE.....	5
2.3	ABOUT THIS MANUAL.....	5
3	GENERAL OVERVIEW.....	5
3.1	VERSIONS.....	6
4	USING THE CHARGING STATION.....	7
4.1	ELECTRIC CHARGING BOX WITH CABLE.....	7
5	TROUBLESHOOTING.....	8
6	INSTALLATION.....	8
6.1	GENERAL CRITERIA FOR THE SITE SELECTION.....	8
6.2	INSTRUCTIONS FOR ELECTRICAL CONNECTION.....	9
7	CHARGE AMPS SELECTION.....	10
7.1	INSTALLATION OF THE CHARGING POINT.....	10
7.2	ELECTRICAL CONNECTION.....	11

Dear customer, V2C team wants to thank you for buying one of our electric vehicle charging box. Our passion in design and innovation makes our charging points leaders in technology and design. Do not hesitate to contact us at [info@v2charge.com](mailto:info@v2charge.com) if you have any suggestion. We hope you enjoy your product.

Best regards, **The V2C Team**

## 2 IMPORTANT INFORMATION

### 2.1 SAFETY INSTRUCTIONS



#### ⚠️WARNING!!

Not observing the safety instructions can result in risk of death, injuries and damage to the device! V2C assumes no liability for claims resulting from this!

- Electrical hazard / fire hazard!

Never use damaged, worn or dirty charging plugs. The first time tuning on the electrical charging station must be carried out exclusively by competent and qualified technical personnel, fully responsible for compliance with the installation regulations and existing standards.

Never use damaged, worn or dirty charging connectors.

- The owner must ensure that the charging station is only ever operated in perfect conditions:
  - Repair work to the charging station is forbidden and may only be performed by the manufacturer (the charging station must be replaced)!

- Do not carry out any unauthorized conversion work or modifications to the charging station!

- Do not remove any notices on the device, such as safety symbols, warning notices, rating plates, nameplates or cable markings!

- The charging station does not have its own power switch! The RCD circuit breaker and the line circuit breaker of the building installation serve as main connectors.

- No extension cables are permitted for connecting an electric vehicle to the power supply device for electric vehicles.

Only electrical vehicles or their chargers may be connected. No connection of other loads is permitted (electric tools etc.)!

- Read the information and the instructions for your vehicle carefully before you charge the vehicle using the charging station.

- Ventilation: A number of vehicles require an external ventilation system in the interior areas due to the possible creation of toxic or explosive gases during the charging procedure.

- Unplug the charging cable by pulling on the connector, never on the cable.

- Risk Damage! Never clean the charging station with a jet of pressurized water (from a hose, high-pressure cleaner etc).

## 2.2 INTENDED USE

POLE is a "charging station" for the indoor and outdoor area at which electrically operated vehicles can be charged (e.g. electric automobiles).

The electric charging station has been designed for being built in a wall.

The respective national regulations must be observed with regard to the installation and connection of the charging station.

The device was developed, manufactured, inspected and documented in compliance with the relevant safety standards. Therefore, the products do not pose any danger to the health of persons or a risk of damage to other property or equipment under normal circumstances, if the instructions and safety precautions relating to the intended use have been observed properly.

The instructions contained in this manual must be strictly observed in all circumstances. Failure to do so could result in the creation of potential sources of danger or the disabling of safety devices. Regardless of the safety instructions given in this manual, the safety precautions and accident prevention measures appropriate to the situation in question must also be observed.

## 2.3 ABOUT THIS MANUAL

This manual is valid for devices of the type: POLE.

This manual is intended for the following people:

- End customers (user of the electrical charging point) Electric Technicians

## 3. GENERAL OVERVIEW



### 3.1 VERSIONS



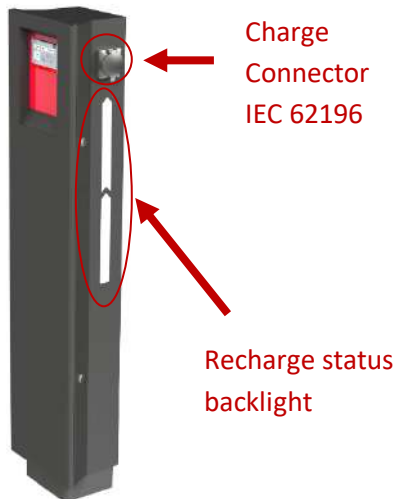
<b>MODEL</b>	<b>INTENSITY</b>	<b>ELECTRIC POWER</b>	<b>POWER SUPPLY</b>	<b>MAXIMUM POWER</b>
<b>1 X SOCKET</b>	6-32 Amp	1x Up to 22 kW	3F+N+TT	22 kW
<b>2 X SOCKET</b>	6-32 Amp	2x Up to 22 kW	3F+N+TT	<b>44 kW</b>

## 4 USING THE CHARGING STATION

### 4.1 ELECTRIC CHARGING BOX WITH CABLE

1. Switch on the charging box (Normal operation of the charging point: always activated)
2. The charging box will start a self-test mode for a few seconds. Immediately, the backlight will turn green.

#### Start the Charge



1. **Select Amp Rated.** With the buttons, you can choose the Amp Rated for Charging.
2. **Connect the connector to the car.** It will turn blue. The blue color of the backlight will activate while the car is connected to the recharging point and the car does not give you permission to recharge.
3. When the car is charging the Backlight will be **lilac** and the car will begin to charge. In the display you can check if the car is charging.

#### Ending the charging procedure

The charging procedure will end when unplugging the charging cable from the vehicle. For details, please refer to the instructions of the vehicle manufacturer.

#### 1. Unplug the charging cable from the vehicle

Do not use force to pull out a mechanically locked plug!

Keep save charging connector / charging cable

#### BACKLIGHT SIGNALS



The EVSE is connected and waits to be connected to the electric vehicle.



The EVSE is ready to charge. The EVSE is connected to the car but is waiting the authorization of the car.



The EVSE is charging. The cable is connected to the vehicle.

#### ATTENTION:

**THERE IS NO NEED TO DISCONNECT THE RECHARGING POINT FROM THE MAINS. IT CAN BE LEFT CONSTANTLY ON. HOWEVER, IF IT IS NOT GOING TO BE USED FREQUENTLY FOR SOME TIME, IT IS ADVISABLE TO TURN IT OFF FROM THE PROTECTIONS.**

## 5 TROUBLESHOOTING

### PROBLEM

### POSSIBLE CAUSE - SOLUTION

#### LED does not light up

- No voltage supply.
- Check the residual current circuit-breaker and the thermal breaker and, if necessary, connect them.
- Faulty: contact your service representative.

#### Charging procedure does not start

- The plug is not plugged in properly:
- Pull out the plug and insert it again.
  - The connector in the locking area may be dirty or damaged: clean the connector or have it replaced.
  - The vehicle doesn't need power or has a failure check on the vehicle.
  - Vehicle is scheduled to start the charge at a later start time.

#### Vehicle not fully charged Long charge time

- Reduced current due to high temperature because of the vehicle or the electric charging station.
- Protect the vehicle and charging station from direct sunlight during the charging process.
- Visual check of dirt, wear or damage on the connecting device. If necessary, contact your service representative.
- Incorrect authorisation due to an external control device (power supply, photovoltaic system, etc.)

#### The connector can't be unplugged from the car

The charging process hasn't been completed by the vehicle: please complete the charging process according to the vehicle manufacturer's manual. Eventually the connector cannot be unlocked under traction: push the connector inwards and reconnect it to the vehicle. Then complete the charging process again.

## 6 INSTALLATION

### 6.1 GENERAL CRITERIA FOR THE SITE SELECTION

The charging station was constructed for the indoor and outdoor area. Therefore, it is necessary to ensure the installation conditions and the protection of the device at the installation area.

- According to the product standard, the charging station must be located at a height between 0.4 m and 1.5 m. We recommend installing the charging station (height of the socket or parking bay) at a height of 1.2 m. Observe that national regulations can limit this height. It must be taken in consideration that, in the case of placement in parking, put it at a height, which in case of accidental collision, does not damage the recharging point.

- The device must not be exposed to direct water jets (e.g. neighboring manual car wash facility, high-pressure cleaner, garden hose, etc).

- The device should be protected from direct rain as far as possible to prevent icing, hail damage or similar.

- The device should be installed in a way that it is protected from direct sunlight as far as possible



to prevent reduction of the charging current or interruption of the charging due to excessive temperatures of the charging station components.

- Do not install the charging station in places where objects could fall and damage the equipment. If you think that a vehicle may hit the charging station, install protective barriers.
- Do not subject the equipment to direct water jets (e.g. due to the proximity to car wash stations or high-pressure cleaners).

**Observe the internationally valid installation standards (e.g. IEC 60364-1 and IEC 60364-5-52) and comply with the nationally applicable installation standards and regulations.**

## 6.2 INSTRUCTIONS FOR ELECTRICAL CONNECTION

### **Selection of differential circuit breaker:**

Each charging station must be connected to a separate differential circuit breaker. Other current circuits cannot be connected to this differential circuit breaker. A suitable rated current  $I_N$  must be selected for the set circuit breaker.

### **Sizing of the head-end thermal magnetic switch:**

The increase of the ambient temperature in the control cabinet must also be taken into consideration for the sizing of the thermal circuit breaker. Calculate the rated current according to the chosen charging power and the supply line.

### **Sizing of overvoltage devices:**

If national legislation requires it, the installation of an overvoltage device must be designed according to the maximum intensity of the charging station.

Determine the rated current according to the data on the nameplate in compliance with the selected load capacity and the supply line.

### **Disconnection device:**

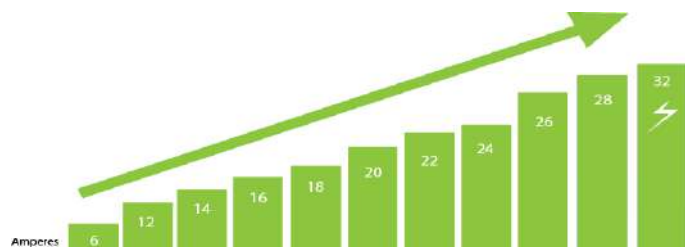
The Charging Station has no power switch available. The differential switch and the magneto-thermal switch of the power supply line operate as a mains connection device. The Charging Point can always be turned on and will only be switched off if it isn't used very often.

### **Sizing of the power supply line:**

When designing the installation, do it according to current state regulations. If the cable is exposed to high temperatures take into account the temperatures that it can suffer inside the charging point. Select the cable of sufficient section for the chosen automatic switch.

## 7 CHARGE AMPS SELECTION

The vehicle will charge at that recharging speed or at a lower speed depending on the maximum recharging capacity of the vehicle and the percentage of load it is in. The maximum speed selected must be in accordance with the installation performed.



An electrical specialist technician must select the circuit breaker you need to install and the supply section.

It can be modified easily by opening the back cover. The vehicle will charge at this charging speed or at a lower one, depending on the maximum charging capacity available in the vehicle and the percentage of charge it is in. The maximum speed selected must be in accordance with the installation carried out.

<b>Single-phase power (kW)</b>	1,4	2,8	3,2	3,7	4,1	4,6	5	5,5	6	6,4	7,7
<b>Three-phase power (kW)</b>	4,2	8,4	9,7	11	12,2	13,8	15	16,5	18	19,2	22
<b>Protections to be installed</b>	10	16	16	16	20	20	25	25	32	32	32
<b>Minimum cable cross-section (mm<sup>2</sup>)</b>	2,5	2,5	2,5	2,5	4	4	6	6	6	6	10

The protections to be installed and the cable section must be chosen by a specialist, this table serving only as a reference. See section 6.

The charging post has protections for each socket of 32 Amps Magneto-thermic Switch and 40 Amps 0.03 mA Super-immunized Differential. Each socket has its own separate protections.

### 7.1 INSTALLATION OF THE CHARGING POINT

1. Open the side cover by removing the two fastening screws. Remove and insert the cover in a tilting way.
2. Fixing materials are not included in the charging point. Those considered the most suitable for the material to be fixed should be used. In the case of concrete, the use of dowels and screws is recommended. An interesting recommendation is to use a chemical anchor.
3. Fix the charging point to the ground.

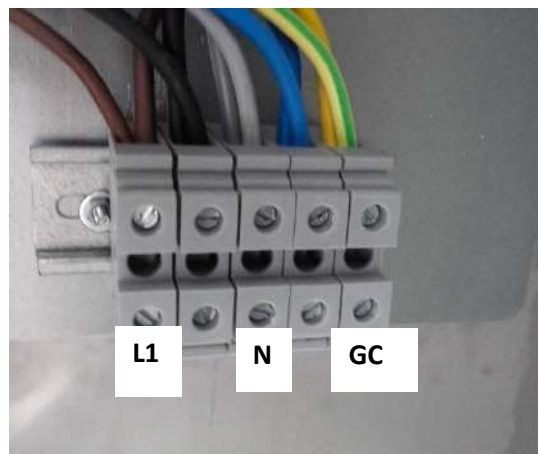
## 7.2 ELECTRICAL CONNECTION

It is recommended if the installed pipe enter 15 cm inside the post to prevent water from entering the canalization.

The electrical connection is made from only one point through Grey colored terminal blocks. These terminal blocks are unique and supply power to all the sockets at the recharging point.

### SINGLE-PHASE CONNECTION.

Connect only L1 (Brown color), Neutral (Blue color) and Ground connection (Yellow and Green).



### THREE-PHASE CONNECTION.

Connect L1 (Brown), L2 (Black), L3 (Gray), Neutral (Blue) and Grounding (Yellow and Green).



### **ATTENTION**

*Make sure that the screws are tightened properly. Don't be afraid to use "moderate" force.*



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