

# *User Manual*

ELECTRICAL VEHICLE CHARGING STATION LEVEL 2

**EVC30T/EVC30T-IN**



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## OVERVIEW

The Elmec Inc. **EVC30T/EVC30T-IN** is a Level 2 Electrical Vehicle Charging Station. Its primary function is to send electrical power to an electric vehicle that is equipped with the SAE J1772™ Electric Vehicle connector. There are different models of this charging station:

### MODEL 4

Can be used in wet location (UL/CSA type 3R, 4, 4X enclosure)

25' (7.6 m) Output Cable SAE J1772™

30A Output Current (40A circuit breaker)

Electrical installation require a junction box

Fixed and permanent installation

### MODEL 5

Can be used in wet location (UL/CSA type 3R, 4, 4X enclosure)

25' (7.6 m) Output Cable SAE J1772™

30A Output Current (40A circuit breaker)

Electrical installation with a NEMA 6-50P 240V plug on input cable

Portable model, non-permanent installation

### MODEL 30

Can be used in wet location (UL/CSA type 3R, 4, 4X enclosure)

15' (4.6 m) Output Cable SAE J1772™

30A Output Current (40A circuit breaker)

Electrical installation require a junction box

Fixed and permanent installation

### MODEL 31

Can be used in wet location (UL/CSA type 3R, 4, 4X enclosure)

15' (4.6 m) Output Cable SAE J1772™

30A Output Current (40A circuit breaker)

Electrical installation with a NEMA 6-50P 240V plug on input cable

Portable model, non-permanent installation

## PARTS LIST



A	NEMA 6-50P 240V connector (optional)
B	Unit transport handle
C	Enclosure
D	SAE J1772™ electric vehicle connector
E	SAE J1772™ connector's release button
F	Electric vehicle charging cable

### **WARNING !!!**

DO NOT REMOVE THE BOLTS THAT HOLD THE ALUMINUM HANDLE ONTO THE ENCLOSURE OF THE CHARGING STATION

Figure 2.1: Electric Vehicle Charging Station (EVC30T Portable version shown)

## SPECIFICATIONS



### Input voltage

208-240VAC single phase, 30A Level 2 EVSE



### Input connector

NEMA 6-50P (models 21, 31, 5 and 7);  
wall-mount junction box connection  
(models 4 and 30)



### Output connector

SAE J1772™  
choice of 3 different cable lengths: 15' (4.6 m), 18' (5.5 m), 25' (7.6 m)



### Operating temperature

-40 °C to 40 °C



### Storage temperature

-40 °C to 100 °C



### Dimensions (Height x Width x Depth)

(17" x 10" x 4 1/4")



### For outdoor use

Models 4, 5, 30 and 31  
(UL/CSA enclosure Type 3R, 4, 4x)



### Weather resistant

All models



### Weight

4.5 kg (10 lb)

## IMPORTANT SAFETY INSTRUCTIONS

### SAVE THESE INSTRUCTIONS

This manual contains important instructions for the Elmec Inc. EVC30T/EVC30T-IN EV Charging Station that should be followed during installation, operation and maintenance of the unit.

## CAUTION

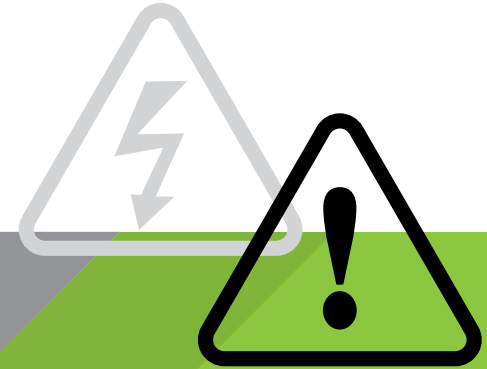
- To reduce the risk of fire, connect only to a circuit provided with 40 amperes maximum branch circuit over current protection in accordance with the National Electrical Code, ANSI/NFPA 70 and C.E.C Part 1 C22.1-12.
- This equipment should be used with an electrically interlocked ventilating means during indoor charging of vehicles requiring ventilation during charging. Verify that:
  - 1) The ventilating means is operating properly.
  - 2) The ventilation path is free of obstructions.
- Do not alter AC cord or plug provided. – Where it does not fit the outlet, have proper outlet installed by a qualified electrician. Improper connection increases the risk of an electric shock.



## IMPORTANT SAFETY INSTRUCTIONS

### *GROUNDING AND AC POWER CORD CONNECTION INSTRUCTIONS*

Charger should be grounded to reduce risk of electric shock. Charger is equipped with an electric cord having an equipment-grounding conductor and a grounding plug. The plug should be plugged into an outlet that is properly installed and grounded in accordance with all local codes and ordinances.



Read this manual thoroughly and make sure you understand the procedures before you attempt to operate this equipment.

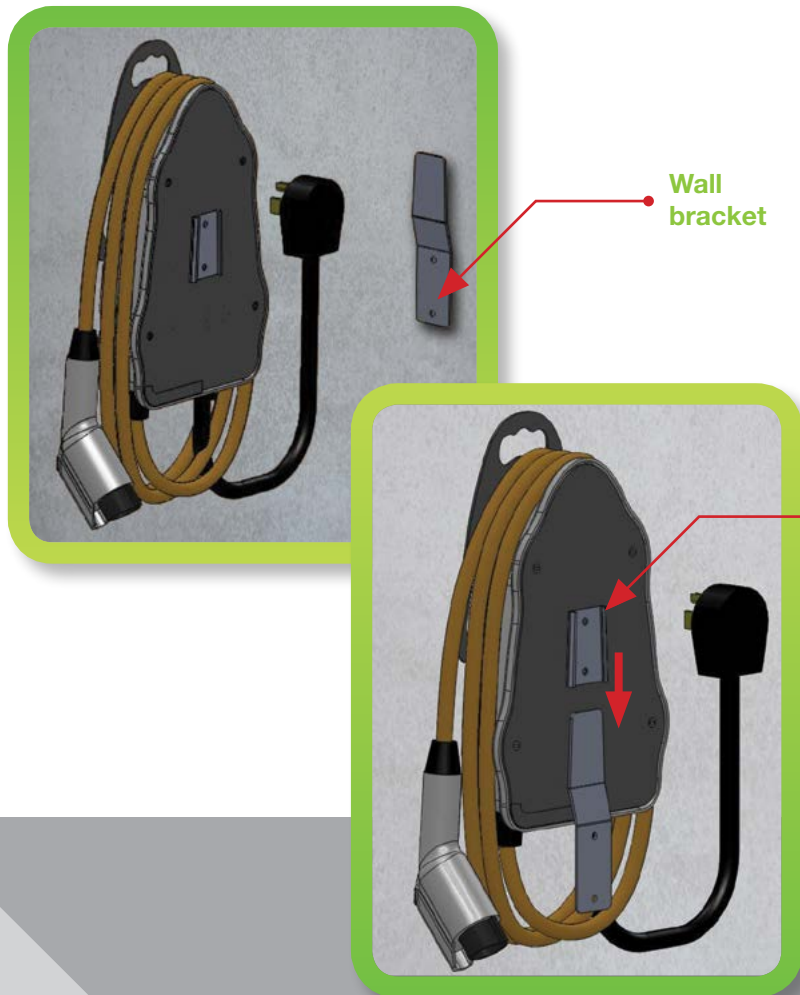
The purpose of this manual is to provide you with information necessary to safely operate, maintain, and troubleshoot this equipment. Keep this manual for future reference.

This equipment should be installed, adjusted, and serviced by qualified electrical personnel familiar with the construction and operation of this type of equipment and the hazards involved. Failure to observe this precaution could result in death or severe injury.

Do not use this product if the Electric Vehicle Charging Cable has any indication of damage.

Do not use this product if the enclosure or the Electric Vehicle Charging Cable Connector is broken, cracked, open, or shows any other indication of damage.

This Electrical Vehicle Charging Station is intended for use with plug-in electric vehicles only.



### *Models 5 and 31 (with NEMA 6-50P plug connector)*

This version of the Electrical Vehicle Charging Station is a portable-type charger and is not designed to be fixed permanently on a wall. But, using our wall mounting kit, it is possible to mount the unit temporarily on a wall. The Figure 5.1.1 illustrates this mounting kit.



The wall mounting kit must be installed on a wall and fixed on a vertical stud that can support at least 4 times the weight of the unit (the unit weighs about 10 lb).

Figure 5.1.1: Portable unit wall mounting kit





### *Models 4 and 30 (using a nearby installed junction box)*

This version of the Electrical Vehicle Charging Station is a fixed-type charger and is designed to be fixed permanently on a wall using the mounting kit included with the charging station. The Figure 5.2.1 illustrates this mounting kit.



The wall mounting kit must be installed on a wall and fixed on a vertical stud that can support at least 4 times the weight of the unit (the unit weighs about 10 lb).

Figure 5.2.1: Fixed installation mounting kit

## Models 5 and 31 (with NEMA 6-50P power input connector)

1. Simply connect the NEMA 6-50P connector into a suitable 240V/40A receptacle.
2. Once the unit is receiving power, the Main LED will light up **GREEN**.

This Electrical Vehicle Charging Station requires a dedicated 40A in the main electrical panel.



This equipment should be installed, adjusted, and serviced by qualified electrical personnel familiar with the construction and operation of this type of equipment and the hazards involved. Failure to observe this precaution could result in death or severe injury.



## Models 4 and 30 (using a nearby installed junction box)

1. Install a junction box close to the location where you want to install the charging station permanently.
2. Insert the cable coming for the main electrical panel into the junction box. **Information: Consult a qualified master electrician so he can calculate the required size of the cable coming from the main electrical panel.**
3. Insert the main input cable coming from the charging station into the junction box.
4. Do the following connections:

Connection Table		
Description	Cable from the main electrical panel	Cable from charging station
L1	Black	Black
L2	Red	White
Neutral	White	N/A
Ground	(Bare copper wire)	Green

5. Re-engage the circuit breaker in the main electrical panel and verify that the charging station is powered up – the Main LED is **GREEN**.

## OPERATING SEQUENCE

1. Make sure that the unit has power (Main LED should be **GREEN**.)
2. Using the Electrical Vehicle Charging Cable, connect the unit to the electric vehicle suitable SAE J1772™ inlet connector.
3. Once connected, the Main LED should light up briefly **YELLOW** before going to **BLUE**.
4. The Main LED will stay lit in the **BLUE** color during the charging sequence. For certain vehicles, the Main LED will light up **YELLOW** once the charge is completed.
5. If the Main LED becomes **RED** once connected to the electric vehicle, but gets back to **GREEN** once the charging cable is disconnected, this means that charging this model of electric vehicle requires ventilation if done in an indoor location. Our charging unit isn't compatible with these vehicles. So, make sure to check with your electric vehicle manufacturer to be certain that our charging unit can charge your specific electric vehicle.
6. When the charge is finished (or when the user wants to terminate the charge), simply disconnect the SAE J1772™ connector from the electric vehicle by pressing the release button on the SAE J1772™ connector.
7. Replace the Electric Vehicle Charging Cable on the unit as shown in Figure 2.1

**The Main LED on the front of the unit indicates the state of the unit. This table summarizes the possibilities for the colors of the Main LED.**

State of the Main LED	
Color	Description
Green - Constant	The unit is powered up and is ready to accept a vehicle connection.
Yellow - Constant	A vehicle has been detected but it isn't ready to accept the charge (This state happens very briefly after vehicle connection). A vehicle has been detected and the charge is completed (certain vehicles only).
Blue - Constant	The vehicle is connected and is in charging state.
Red - Constant	Indoor charging area ventilation required. No charging allowed. The unit is in fault mode. Check the troubleshooting table.

**Never operate the unit if the enclosure isn't sealed.**



## OPERATING MODES



### *Instantaneous charging*

This is the mode by default. Simply plug the SAE J1772™ connector into the electric vehicle inlet. The Main LED will turn to **BLUE** and the charge will begin for as long as the vehicle stays connected to the Electrical Vehicle Charging Station.



Figure 8.1.1: Location of Main LED

## MAINTENANCE AND CLEANING

### *Maintenance*

This charging station does not require any major maintenance except a regular verification to be sure that there are no damages or excessive wear to the charging station itself or to any of the power cords/plugs/connectors.

### *Cleaning*

The charging station and the power cords should be cleaned regularly. The cleaning process can be done using a wet rag.

**Do not use water jet, high pressure washer, chemicals agents or solvents during the cleaning process. Do not splash water on the power cords or on the plugs/connectors.**



## STORAGE OF THE PORTABLE VERSION

The portable version of the charging station (models 5 and 31) must be stored in a clean and dry location, and it must be located away from any high heat sources.

Avoid oily or corrosive substances from contacting the charging station or the power cords and plugs/connectors between uses.

Avoid any fall or drop that can lead to impacts between a hard surface and the charging station. Make sure there is no contact of any sharp object with the charging station or the power cords or plugs/connectors.

Do not store the charging station in a location where rodents have access, such as an exterior shed.



## TROUBLESHOOTING



This table lists some of the common troubles and their possible solutions.



Troubleshooting Table

Diagnostic	Problem	Solutions
The Main LED won't light up when powering the unit.	The unit isn't receiving a proper power supply.	<ul style="list-style-type: none"> <li>• Check if the dedicated circuit breaker is at the ON position.</li> <li>• Check the power supply connections inside the unit enclosure (Gnd, L1, L2).</li> </ul>
The Main LED is light up constant red.	The unit is in fault mode.	<ul style="list-style-type: none"> <li>• Reset the unit by unplugging the NEMA 6-50P plug (Standard version) or switch the dedicated circuit breaker at OFF and then at the ON position (Optional version).</li> <li>• If even after a reset, the unit is still in fault mode, call the manufacturer support service.</li> </ul>
The Main LED is going from blue to yellow rapidly.	The Electric Vehicle Charging Cable is worn, damaged or dirty.	<ul style="list-style-type: none"> <li>• Call the manufacturer support service.</li> </ul>
The Main LED is going from blue to yellow a few seconds after connection to EV.	Power lines L1 or L2 from the main electrical panel is missing or damaged.	<ul style="list-style-type: none"> <li>• Call the manufacturer support service.</li> </ul>

### *What does this warranty cover?*

This warranty covers any defects or malfunctions of your new EVduty EVC30T Electric Vehicle Charging Station.

### *How long does the coverage last?*

This warranty runs for 3 years from the purchase date.

### *What will Elmec Inc. do?*

Elmec Inc. will repair any EV-Duty EVC30T Electric Vehicle Charging Station judged to have a defect or malfunction as long as the seal on the cover is not broken. In the event repair is not possible, Elmec Inc. will replace the EVduty EVC30T Electric Vehicle Charging Station with a new one of similar specifications and price.

### *What does this warranty not cover?*

This warranty will be void in the case the EV-Duty EVC30T Electric Vehicle Charging Station being opened in any manner so that the internal components are accessible. The cover is sealed with the rear plate by using rivets and sealant.

### *How to get service?*

To use this warranty, you must contact the Elmec Inc. Support Service, and a qualified technician will verify if there is a real problem with your EVduty EVC30T Electric Vehicle Charging Station. If it's the case, send the EVduty EVC30T Electric Vehicle Charging Station postage paid with proof of purchase including serial number to the following address:

#### **ELMEC INC. SERVICE SUPPORT**

1141, 2<sup>e</sup> avenue, Grand-Mère (Québec) G9T 2X9  
Mobile (24/7): 1 819 531-0819 (calls and text messages)  
Facebook: Jean-Marc Pittet

Elmec Inc. will inspect the EV-Duty EVC30T Electric Vehicle Charging Station and contact you within 72 hours following the product reception to tell you if the product will be repaired or replaced.

### *Your rights under the actual applicable law:*

This warranty gives you specific legal rights, and you may also have other rights which vary from one province to another.



Postal address

**Elmec Inc. Service Support**  
1141, 2<sup>e</sup> avenue  
Grand-Mère (Québec)  
G9T 2X9



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