



ELECTRIC VEHICLE CHARGER EVC01 Series

User Manual



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1 - SAFETY INFORMATION



CAUTION

RISK OF ELECTRIC SHOCK



CAUTION: ELECTRIC VEHICLE CHARGER DEVICE SHALL BE MOUNTED ELECTRICAL CONNECTED AND COMMISSIONED BY A LICENSED OR AN EXPERIENCED ELECTRICIAN AS PER ANY REGIONAL OR NATIONAL ELECTRIC REGULATIONS AND STANDARDS IN EFFECT.



CAUTION

AC grid connection and load planning of the electric vehicle charging device shall be reviewed and approved by authorities as specified by the regional or national electric regulations and standards in effect.



For multiple electric vehicle charger installations the load plan shall be established accordingly. The manufacturer shall not be held liable directly or indirectly for any reason whatsoever in the event of damages and risks that are borne of errors due to AC grid supply connection or load planning.

IMPORTANT - Please read these instructions completely before installing or commissioning the device

1.1 - SAFETY WARNINGS

- These safety and operating instructions should be kept in a safe place for future reference.
- Check the voltage reported on the label; do not use the charging station without the appropriate supply voltage.
- If there is any doubt about normal operation or if the unit is damaged in any way, DO NOT continue using the unit; switch off the main power switches (MCB and RCCB). Contact your local dealer.
- The room temperature range should be approximately between -25°C and +50°C without direct sunlight and at a relative humidity between 5% and 95%. Use the charging station only within operating conditions.
- The position of the device must be chosen in such a way that excessive heating of the charging station is avoided. High operating temperatures, caused by direct sunlight or heating sources, may cause the charging current to be reduced or the charging process to be temporarily interrupted.
- The charging station is intended both for outdoor and indoor use. Cannot be used in public areas.
- To reduce the risk of fire, electric shock or material damage, do not expose the unit to rain, snow, electrical storms or other severe weather events. Moreover, the charging station must not be exposed to splashes or spray of liquids.
- Do not touch the terminals, the electric vehicle connector and other hazardous live parts of the charging station with sharp metal objects.

- Avoid exposure to heat sources, and place the unit away from flammable, explosive, hard or combustible materials, chemicals or vapours.
- Risk of explosion. The equipment has internal flammable or spark-sensitive components that should not be exposed to flammable vapours. The unit should not be located in recessed spaces or below floor level.
- The device is designed solely for charging vehicles that do not require ventilation during loading.
- To avoid the risk of explosion and electric shock, make sure that the specified circuit breaker and earth leakage circuit breaker are connected to the network of the building.
- The lowest part of the socket should be between 0.9 m and 1.5 m above the ground.
- The use of adapters is not allowed. The use of extension cables is not allowed.

WARNING: Never let people (including children) with reduced physical, sensory or mental capabilities or lack of experience and or knowledge use electrical devices unsupervised.

CAUTION: This vehicle charger unit is intended only for charging electric vehicles not requiring ventilation during charging.

1.2 - GROUNDING WARNINGS

- The charger must be connected to a grounded system. The earth conductor entering the charger must be connected to the instrument ground lug which is located inside the charger. This operation must be done with the circuit conductors and by connecting the equipment grounding bar or cable to the charging station. Connections to the charger are the sole responsibility of the installer.
- In order to reduce the risk of electric shock, connect only to earthed sockets.
- **WARNING:** Ensure that during installation and use the charging station is permanently and correctly grounded.
- **WARNING:** If Earthing Type is selected as IT, the protective earth error check is disabled.

1.3 - WARNINGS ABOUT POWER CABLES, SOCKETS and CHARGING CABLES

- A damaged power cable can cause a fire or lead to electric shocks. Do not use the product if the flexible power cable or vehicle cable is frayed, if its insulation is damaged or if the unit shows other signs of damage.
- Therefore, please ensure that the charging cable is well positioned; do not step on it, do not trip over it or do not subject it to damage or stress.
- Do not forcibly pull on the cable and do not damage it with sharp objects.
- Never touch the vehicle plug/socket or cable with wet hands: this could cause a short circuit or an electric shock.
- In order to avoid the risk of fire or electric shock, do not use the device with extension cords. To avoid danger, if the mains cable or vehicle cable is damaged, it must be replaced by the manufacturer, its service agent or by similarly qualified persons.

1.4 - WARNING FOR WALL INSTALLATION

- Please carefully read the instructions before mounting the wall charging station.
- Do not install the charging station on the ceiling or on sloping walls.
- Use the indicated wall mounting screws and other accessories.
- The unit is certified to be used both indoors and outdoors. If the unit is mounted outdoors, the equipment for connecting the hoses to the unit must be certified for outdoor use and must also be installed in such a way that the IP certification on the unit is maintained.

2 - GENERAL INFORMATION

2.1 - INTRODUCTION TO THE PRODUCT COMPONENTS





EVC01 Product Components

- 1- Branding Area
- 2- RFID Card Reader
- 3- LED Status Indicator
- 4- Cable Hook
- 5- Charging Plug
- 6- Charging Cable
- 7- Supply inlet cable gland
- 8- Communication cable gland
- 9- Charging cable gland

2.2 - LED STATUS INDICATOR INFORMATION

\langle	Status of the LED		Status of the Charging Station	
		Blinks Blue and Green	Charging station is starting up / booting.	
	0	No LED Indication	Charging device is ready to charge	
	₩	Blinks blue	Electric Vehicle is connected. Charging Station is waiting for RFID card authorisation.	
		Green Glowing	Charging is authenticated.	
		Blue Glowing	Charging in progress	
	O	Constant Blue	Charging suspended or finished. Depending on HMI Configuration	
	O	Constant Red	Fault condition	
	((())) 2 4 sec	Blinks red	Ventilation required mode	
	₩ ¥ sec	Blinks purple	Charging with current limited to 16A due to over temperature	
	O	Constant Purple	Charging not possible due to over temperature or power optimizer current limit is reached or the charger is disabled	
		Blinks red and blue	Charging station is reserved.	
			Charging station is waiting for Eco Time interval.	
	1 sec		Charging station is in Delay Charge Mode.	
	O	Constant Red	Firmware update	
	↓ ↓ 1 sec	Blinks red Per second for 60 seconds	Master Card Config mode / Local Card List Reset	
	Twice	Blinks green for 2 times	User RFID Card addition to local RFID list	
	Twice	Blinks red for 2 times	User RFID card removes from local RFID list	

Status of the LED		Status of the Charging Station	
	Green Glowing	Authorised RFID Card is tapped while charging cable is connected	
(((Q))) ((30 sec	Glows green for 30 secs	Authorised RFID Card is tapped while charging cable is not connected	
Three Times	Blinks red for 3 times	Start/stop charging attemption with unauthorised RFID card	
∑ 1 sec	Blinks Green for 1 secs	Charging Station is waiting for Randomised Delay Period.	
0	Constant Yellow	Altered Firmware	
I3 sec	Blinking Yellow	Tamper switch is activated	

3 - DESCRIPTION

3.1 - MODEL DESCRIPTION

	MODEL DESCRIPTION : EVC01-AC*****
	EVC01 : Electric Vehicle AC Charger (Mechanical Cabinet EVC01)
	1st Asterisk (*): Rated Power
	7 : 7.4 kW (1Phase Supply Equipment)
	11 : 11 kW (3Phase Supply Equipment)
	22 : 22 kW (3Phase Supply Equipment)
	2nd Asterisk (*) can include combinations of the following communication module options.RFID reader is standart equipment for all of the model variant."S" option must be included for selecting combinations of W,L and P;
	S : Smart Board with Ethernet Port
	W : WiFi & Bluetooth module
Model Name	L : LTE / 3G / 2G module
	P : ISO 15118 PLC module
	3rd Asterisk (*): Broken PEN Detection Option
	Blank : No broken PEN detection functionality
	PEN : Broken PEN detection and disconnection function
	4th Asterisk (*) can be one of the following for tethered cable length
	T2P : Type2 Charging Cable with 5m
	T2P7 : Type2 Charging Cable with 7m
	5th Asterisk (*) can be one of the following:
	WHT : w/White Cosmetic Cover
Cabinet	EVC01

4 - TECHNICAL SPECIFICATION

This product is compliant to IEC61851-1 (Ed3.0) standard for Mode 3 use.

Model	EVC01-AC22 Series	EVC01-AC11 Series	EVC01-AC7 Series
IEC Protection class	Class - I		
Vehicle Interface	Attached Cable with IEC 62196 Type-2 Plug (5 or 7 meters)		
Voltage and Current Rates	230/400V 50 Hz 3-Phase 32A	230/400V 50 Hz 3-Phase 16A	230V 50 Hz 1-Phase 32A
AC Maximum Charge Output	22kW	11kW	7.4kW
Earthing System Options	7	N-TT by default, IT option	al
Serial Interface	Modbus over RS485		
Built-in DC residual current sense	6mA		
Required RCCB on AC Mains	4P-40A - 30mA RCCB 4P-20A - 30mA RCCB 2P-40A - 30mA RCCB Type- A Type- A Type- A		
Required Circuit Breaker on AC Mains (Max Current)	4P-40A MCB Type-C	4P-20A MCB Type-C	2P-40A MCB Type-C
Broken PEN detection and disconnection function for the UK	Optional for 1-phase only.		
Built-in Electrical Protection	Over Current, Over Voltage, Under Voltage, DC Residual Current, Over Temperature, Short Circuit, Surge/Lightning, Earth Fault, Phase- Neutral Reverse Detection		
Required AC Mains Cable	5x 6 mm² (< 50 m) 5x4 mm² (< 50 m) 3x 6 mm² (< 50 m)		
(Recommended minimum cable	External Dimensions:	External Dimensions:	External Dimensions:
size in accordance with BS7671)	Ø 15-21 mm	Ø 15-21 mm	Ø 11-15 mm

CONNECTIVITY

Ethernet	100 Mbps Ethernet	
Wi-Fi	Wi-Fi 802.11 a/b/g/n/ac 2.4 GHz and 5 GHz	
Bluetooth (Optional)	Bluetooth 5.1; Bluetooth 4.2 low energy	
Cellular (Optional)	LTE / 3G / 2G	
	GSM : B3 (1800 MHz), B8 (900 MHz)	
	WCDMA : B1 (2100 MHz), B8 (900 MHz)	
	LTE : B1 (2100 MHz), B3 (1800 MHz), B7 (2600 MHz), B8 (900 MHz), B20 (800 MHz), B28A (700 MHz)	
RFID Reader	ISO 14443A/B and ISO 15693	

OTHER FEATURES

Potential Free Enable Input	Signal input for enabling and disabling the charging station externally
Welded Contact Shunt Trip	230V AC output for shunt trip in case of welded contacts
Potential Free Load Shedding Input	Signal input for reducing the charging current down to 8A in case of overload on the upstream transformer

OTHER FEATURES

Remote Control / Monitoring	OCPP 1.6j
Remote Diagnostics	Remote Diagnostics over OCPP
Load Management	Ethernet / Wi-Fi / OCPP
Software Update	OCPP / Configuration WEB User Interface

MECHANICAL SPECIFICATIONS

Material	PC 5VA f1, flame retardant		
Product size	256.0 mm (Height) x 256.0 mm (Width) x 127.0 mm (Depth)		
Dimensions (with package)	375.0 mm (Height) x 375.0 mm (Width) x 275.0 mm (Depth)		
Product weight	6,6 KG (22 kW variant)		
rroduct weight	5,6 KG (7.4/11 kW variant)		
Woight with nackago	8,5 KG (22 kW variant)		
weight with package	7,5 KG (7.4/11 kW variant)		
AC Maine Califa Dimensione	For three-phase models Ø 15-21 mm		
AC Mains Cable Dimensions	For one-phase models Ø 11-15 mm		
Cable Inlets	AC Mains / Ethernet / RS485		

ENVIRONMENTAL TECHNICAL SPECIFICATIONS

Protection Class	Ingress Protection	IP54
	Impact Protection	IK08,IK10
Usage Conditions	Temperature -25 °C to +50 °C (without direct sunlight)	
	Humidity	5% - 95% (relative humidity, without condensation)
	Altitude	0 - 3,000m

5 - CHARGING

5.1 - STANDALONE USAGE MODES

The preset "Standalone" variants are pre-configured for standalone use. In standalone use, the charging station has two modes, auto-start (plug and charge) and RFID-authorised. When your charger is powered up for the first time, if you connect your charging cable to start charging, the charging station starts operating in "auto-start (plug and charge)" mode. If you tap your main RFID card and then your user RFID card, your charging station starts operating in RFID authorised mode.

5.1.1 - AUTOSTART MODE

The charging station behaves in automatic charging start-up mode as shown below:

a) If no configuration is made in the configuration screens for 60 seconds and the charging cable is connected, the charging station automatically starts in autostart mode.

b) If the last RFID card is deleted from the list of local RFID cards, the loader starts in autostart mode.

5.1.1.1 - VEHICLE CONNECTION & CHARGING



5.1.1.2 - STOP CHARGING



5.1.2 - AUTHORISED RFID MODE

5.1.2.1 - REGISTERING USER RFID CARD

In standalone mode, the master RFID card is already registered in the charger. If the master RFID card on the charging station is touched when the charging cable is not connected, the charger starts transmitting via Bluetooth and at the same time the user's RFID card can be added to the charger's local RFID list. During this time, the LED starts flashing blue for 60 seconds. The user's RFID card can be added/deleted. If no configuration is made within 60 seconds, the charging station exits configuration mode and returns to the previous mode.

5.1.2.1.1 - ADD/REMOVE RFID CARD TO/FROM A LOCAL RFID LIST

As previously mentioned, if any user's RFID card that is not in the local RFID list is touched within 60 seconds of configuration mode, it is added to the list. Similarly, if a user's RFID card that has already been added to the local RFID list is touched, it will be deleted from the list. If the last RFID card is deleted from the list of local RFID cards, the loader goes into autostart mode.

NOTE : If you delete the last RFID card from the local RFID card list, then your charger starts to behave as autostart (plug&charge) mode.

5.1.2.2 - VEHICLE CONNECTION & CHARGING



NOTE: Charging session will be rejected if an authorised RFID card is used. Charging will only begin with an authorised RFID card.

5.1.2.3 - STOP CHARGING



5.1.3 - SMART APPLICATION AUTHORIZED MODE

5.1.3.1 - CONFIGURING DRIVE GREEN APPLICATION

In standalone usage mode, the master RFID card is already registered to your charger. If you tap the master RFID card to your charging station when the charging cable is not connected, your charger starts to make broadcasting over Bluetooth In this period of time, indication LED starts to blink blue for 60 seconds. You can configure Drive Green application from your smartphone in this period of time. If you do not make any configuration in 60 seconds, charging station exits from configuration mode and returns to its previous mode.

5.1.3.2 - DRIVE GREEN CONFIGURATION:

It is waited to start configuration from your smartphone within 60 seconds after the configuration mode starts. If you do not make any configuration in 60 seconds, bluetooth broadcasting finishes and configuration mode ends.

Please download "Drive Green Next" application from Android Play Store or iOS App Store.

You can reach to the application by QR code below.



Open Drive Green Mobile App. You will see selection of different models. To configure your charger, select EVC01 model shown in picture above and click continue button and follow the instructions which are mentioned inside the application in detail to setup the charger and finish the configuration. Please note that after first configuration your EV charger and Mobile Application connect locally via Bluetooth, so you can only monitor and control your charging session when you are near the charging station. If you want to monitor and control your charging station from the Internet remotely, you need to configure Internet connection settings of your EV charger from "Connectivity" tab in "Device Settings" menu. You can either use Ethernet LAN connectivity or WiFi WLAN connectivity option.

5.1.3.3 - VEHICLE CONNECTION & CHARGING

After configuring your charger with smart application, you can control the charger via the application either in autostart mode or in RFID authorised mode. Autostart and RFID authorised modes are explained.

Your charging station behaves in autostart charging mode as mentioned below. But you can continue to control the charger with smart application even it is in autostart charging mode.

a) If you do not make any configuration in configuration mode for 60 seconds and connect your charging cable, your charging station starts in autostart mode automatically.

b) If you delete the last RFID card from the local RFID card list, then your charger starts to behave as autostart mode.

5.1.3.3.1 - ATTACHED CABLE MODEL

5.1.3.3.1.1 - VEHICLE CONNECTION & CHARGING



NOTE: Charging operation is rejected by the charging station when you want to start charging with an unauthorized card. It takes around one minute to reboot your charging station after it resets.

5.1.3.3.1.2 - STOP CHARGING



5.1.4 - RFID LOCAL LIST AUTHORIZED MODE & ACCEPT ALL RFIDs MODE

Please check "STANDALONE MODE SETTINGS" in Installation Guide document.

5.1.4.1 - ATTACHED CABLE MODEL

5.1.4.1.1 - VEHICLE CONNECTION & CHARGING



NOTE : Charging operation is rejected by the charging station when you want to start charging with an unauthorized card. It takes around one minute to reboot your charging station after it resets.

5.1.4.1.2 - STOP CHARGING



5.2 - OCPP CONNECTED MODE 5.2.1 - VEHICLE CONNECTION & CHARGING



NOTE : Charging session will be rejected if an authorised RFID card is used. Charging will only begin with an authorised RFID card.

5.2.2 - STOP CHARGING



5.2.3 - OCPP 1.6 JSON ADDITIONAL FEATURES

5.2.3.1 - RESERVATION FEATURE

Reservation feature allows the user to reserve the charging station for a period of time. During this period:

- The LED will blink in red and blue.
- Only the RFID card that is used for reservation may initiate the charging process. Other cards are rejected.

If charging is not initiated until the reservation period is expired, the LED will switch to "No Light Indication" mode.



5.2.3.2 - REMOTE CHARGE INITIATION / TERMINATION

This feature is supported by the charging station. If it is also supported by the connected server, then charging process may be initiated/terminated remotely.

5.2.3.3 - HARD RESET/SOFT RESET

If the electric vehicle charging station does not work properly, the service provider can restart the device using this function. There are two types of restart. Software or hardware reset can be selected.

6 - ERROR AND FAULT CONDITIONS

6.1 - GENERAL ERROR CONDITIONS

If the status LED is red and solid, switch the charging station off and switch it back on.

If the LED is still red and solid, please contact an authorised service centre.



6.2 - OTHER ERROR CONDITIONS

Status indicator	Problem	Possible causes	Recommended solutions
O	Constant LED.	AC supply voltage may not be in the range in the operation manual, grounding connection may not be performed and/or phase/neutral connections may be reversed or the charging station may have a fault.	Please ensure that the voltage is in the specified range and that the grounding connection have been performed. If the LED is still solid red, please contact authorized service.
₩ 	Even if the status information LED blinks in blue every four seconds, it is not possible to start charging the electric vehicle or to lock the plug in the charging station	The charging plug may not be connected properly to the charging device or the electric vehicle.	Ensure that the charging plug is connected properly on both sides. Please check if your electric vehicle is in charging mode.
	The status information LED blinks in red	You shall see this error notification if your vehicle is equipped with a battery type that requires ventilation.	This charging station is not suitable to charge such vehicles.

NOTE : if you have a problem with the charger and smartphone configuration, make sure the Bluetooth range is less than 10 metres. Stay within range.

NOTE: if a Wi-Fi connection problem occurs and the charger cannot be controlled, restart the router and check the connections.

6.3 - DC 6mA LEAKAGE CURRENT SENSOR BEHAVIOR

The charging station is equipped with a DC leakage current sensor that reacts a DC leakage current higher than 6mA.

If the charging station goes to error state due to DC leakage current, charging cable must be unplugged from vehicle and then from the charging station to reset this error.

7 - CLEANING AND MAINTENANCE

- Do not clean the electric vehicle charging device during charging.
- Do not wash the device with water.
- Do not use abrasive cloths and cleaning agents. We recommend to use a microfibre cloth.

Failure to observe these warnings can lead to death and serious injury. In addition, it can cause damage to the device.



CE