

150kW DC Quick EV Charger



Maintenance Manual

SAVE THESE INSTRUCTIONS

This manual contains important instructions for DC Quick Charger models that shall be followed during maintenance of the unit.

WARNING ELECTRICAL

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

READ THIS MANUAL THOROUGHLY PRIOR TO INSTALLATION AND ENERGIZING THE EQUIPMENT. INSPECTION AND MAINTENANCE OF THIS EQUIPMENT SHOULD BE PERFORMED IN ACCORDANCE WITH THE OPERATING PROCEDURES DETAILED IN THIS MANUAL 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.

DO NOT USE THIS PRODUCT IF THE EV CABLE IS FRAYED, HAS DAMAGED INSULATION OR ANY OTHER SIGN OF DAMAGE.


DO NOT USE THIS PRODUCT IF THE ENCLOSURE OR THE EV CONNECTOR IS BROKEN, CRACKED, OPEN, OR SHOW ANY OTHER INDICATION OF DAMAGE.

INTENDED FOR USE WITH PLUG-IN ELECTRIC VEHICLES ONLY.

PREMISE VENTILATION NOT REQUIRED.

THE INFORMATION CONTAINED IN THIS MANUAL IS SUBJECT TO CHANGE WITHOUT NOTICE.

WARNING ELECTRICAL

THIS SYMBOL  INDICATES HIGH VOLTAGE. IT CALLS YOUR ATTENTION TO ITEMS OR OPERATIONS THAT COULD BE DANGEROUS TO YOU AND OTHER PERSONS OPERATING THIS EQUIPMENT. READ THE MESSAGE AND FOLLOW THE INSTRUCTIONS CAREFULLY.

WARNING

INDICATES A POTENTIALLY HAZARDOUS SITUATION WHICH, IF NOT AVOIDED, CAN RESULT IN SERIOUS INJURY OR DEATH.

CAUTION

INDICATES A POTENTIAL HAZARDOUS SITUATION WHICH, IF NOT AVOIDED, CAN RESULT IN MINOR TO MODERATE INJURY, OR SERIOUS DAMAGE TO THE EQUIPMENT. THE SITUATION DESCRIBED IN THE CAUTION MAY, IF NOT AVOIDED, LEAD TO SERIOUS RESULTS. IMPORTANT SAFETY MEASURES ARE DESCRIBED IN CAUTION (AS WELL AS WARNING).

IMPORTANT

INDICATES A PARTICULAR ITEM OR INSTRUCTION THIS IS IMPORTANT TO CONSIDER.

ATTENTION

INDICATES AN ACTION OR OPERATION TO INSURE USER SAFETY

PROHIBITED

INDICATES AN ACTION OR PROCEDURE THAT IS NOT ALLOWED.

CAUTION

USE UNDER ENVIRONMENTS SPECIFIED IN THE SPECIFICATION.

- THIS DEVICE CAN BE USED OUTDOORS, BUT SHALL NOT BE INSTALLED ON SITES UNDER ENVIRONMENTS OTHER THAN SPECIFIED IN THE SPECIFICATION OR WHERE POISONOUS GAS MAY BE GENERATED.
- CONFIRM THAT YOUR INSTALLATION SITE HAS A LOAD CAPACITY SUFFICIENT TO SUPPORT THIS DEVICE.

- DO NOT TOUCH VARIABLE RESISTORS ON THE CONTROLLER PRINTED CIRCUIT BOARD. THEY HAVE BEEN ADJUSTED OPTIMALLY THROUGH FACTORY TESTS.
- REMOVE DUSTS AND METAL FINES THAT BECOME ATTACHED DURING INSTALLATION WORK.
- DO NOT BLOCK EITHER OF THE INTAKE AND EXHAUST PORTS.
BLOCKING THE INTAKE OR EXHAUST PORT MAY CAUSE AN INCREASE IN THE INTERNAL TEMPERATURE OF THE DEVICE AND RESULT IN FAILURE.

DANGER

THERE IS A DANGER OF ELECTRIC SHOCK, INJURY, AND/OR BURNING

- PERSONS SKILLED IN ELECTRIC SERVICES AND/OR RELATED REGULATIONS (PROFESSIONAL ENGINEERS OR TECHNICIANS) SHALL INSTALL ELECTRICAL WIRING AND PERFORM MAINTENANCE CHECKS.
- DO NOT PERFORM LIVE-WIRE OPERATIONS. DO NOT FORGET TO SHUT OFF THE POWER SUPPLY.
- THIS DEVICE INCLUDES CAPACITIVE COMPONENTS SUCH AS ELECTROLYTIC CAPACITORS. PROFESSIONAL ELECTRICIANS SHALL PERFORM SUCH OPERATIONS WITH CAREFUL ATTENTION TO CHARGED PARTS AFTER DISCHARGING THE ELECTROLYTIC CAPACITORS.

DANGER

THERE IS A DANGER OF ELECTRIC SHOCK, INJURY, AND/OR BURNING.

- PERSONS SKILLED IN ELECTRIC SERVICES AND/OR RELATED REGULATIONS (PROFESSIONAL ELECTRICIANS) SHALL PERFORM MAINTENANCE CHECKS.
- DO NOT TOUCH THE INSIDE OF THE DEVICE WHILE IT IS RUNNING.
- MAKE SURE NO VOLTAGE IS APPLIED WHEN YOU CHECK INSIDE THE DEVICE.
- DO NOT FORGET TO RETURN THE PROTECTIVE COVER TO ITS ORIGINAL STATE AFTER THE INSPECTION.
- THIS DEVICE INCLUDES CAPACITIVE COMPONENTS SUCH AS ELECTROLYTIC CAPACITORS. SO, SOME PARTS STILL REMAIN CHARGED INSIDE THE UNIT EVEN AFTER THE INPUT POWER SUPPLY IS DISCONNECTED. PROFESSIONAL ELECTRICIANS SHALL PERFORM SUCH MAINTENANCE CHECKS.

CAUTION

- PERFORM PERIODIC INSPECTIONS AT RECOMMENDED INTERVALS.

IF NOT INSPECTED, THE DEVICE MAY FAIL DUE TO COMPONENT DETERIORATION.

- PERIODICALLY REPLACE THE COMPONENTS WHICH ARE IDENTIFIED AS NEEDING PERIODIC REPLACEMENT. IF NOT REPLACED, THE DEVICE MAY FAIL DUE TO COMPONENT DETERIORATION.

CAUTION

THERE IS A DANGER OF ELECTRIC SHOCK, INJURY, BURNING, HEAT GENERATION, AND/OR FIRE.

- DO NOT EXPOSE THE INTERIOR OF THIS DEVICE TO WATER OR MOISTURE. DO NOT USE THE DEVICE IF INTERIOR COMPONENTS ARE WET.
- DO NOT PUT ARTICLES INSIDE THE DEVICE THROUGH ANY OPENINGS

DANGER

THERE IS A DANGER OF ELECTRIC SHOCK, HEAT GENERATION, AND/OR FIRE.

- DO NOT USE THE DEVICE WHEN SOMETHING IS WRONG WITH IT.
- TURN THE BREAKER OFF WHEN SOMETHING IS WRONG WITH THE DEVICE.
THEN PLEASE CONTACT A PERSON RESPONSIBLE FOR THE MAINTENANCE OF THE DEVICE OR YOUR VENDOR.

DANGER

DANGER OF ELECTRIC SHOCK.

- DO NOT FORGET TO WEAR INSULATING RUBBER GLOVES AND ELECTRICALLY RESISTIVE SHOES DURING MAINTENANCE OF THIS DEVICE. THERE IS A DANGER OF ELECTRIC SHOCK WITHOUT THEM.

DANGER

DANGER OF ELECTRIC SHOCK

DO NOT FORGET TO SHUT DOWN AND LOCK-OUT THE DEVICE WHEN YOU ATTACH OR DETACH INSIDE AND/OR OUTSIDE COVERS PROTECTING ACTIVE PARTS.

DANGER OF ELECTRIC SHOCK

ATTACHING OR DETACHING THE COVERS PROTECTING ACTIVE PARTS WHILE THE DEVICE IS RUNNING MAY CAUSE AN ELECTRIC SHOCK ACCIDENT.

DO NOT ALLOW THE COVERS PROTECTING ACTIVE PARTS TO COME IN CONTACT WITH CONDUCTIVE PARTS BECAUSE THERE REMAINS A CIRCUIT WITH VOLTAGE EVEN AFTER THE DEVICE IS SHUT DOWN.

DANGER OF ELECTRIC SHOCK

EVEN AFTER SHUTTING DOWN THE DEVICE, THE INTERNAL CIRCUITRY CONTINUES TO HOLD VOLTAGE UNTIL THE CAPACITORS ARE DISCHARGED. DIRECTLY TOUCHING THE CONDUCTIVE PARTS MAY CAUSE ELECTRIC SHOCK.

PROHIBITED

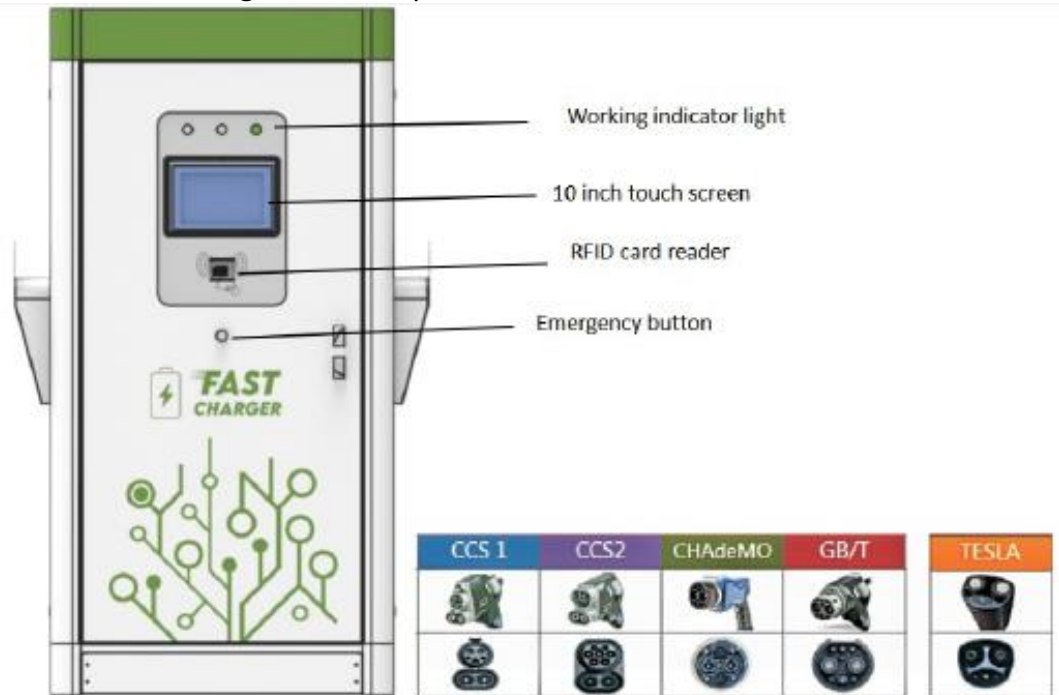
- DO NOT DISCONNECT THE POWER FEED CONNECTOR DURING CHARGING.
- DO NOT TOUCH THE LEADING END PART OF THE POWER FEED CONNECTOR.
- DO NOT PUT FOREIGN ARTICLES IN THE LEADING END PART OF THE POWER FEED CONNECTOR.

This document provides instructions to properly maintain and service the GERSAN G-Charge Charger.

Once installing the DC Fast Chargers, you should review this manual carefully and consult with a licensed contractor, licensed electrician, and trained installation expert to insure compliance with local building codes, climate conditions, safety standards and wiring regulations.

Only a licensed contractor, and a licensed electrician in accordance with all local and national codes and standards should perform the maintenance of the Station.

Under no circumstances will compliance with the information in this maintenance manual relieve the user of his/her responsibility to comply with all applicable codes, safety standards or wiring regulation. Intent of this service manual is to lend a hand to maintenance personnel in diagnosing and repairing filed units; and also, to assist in establishing when a suspicious behavior is not a failure.



Item	Description
Charging plug place	Plug storage box (DC Connector) CCS / CHAdeMO / AC type 2 / type1 (optional)
Charging cable place	Cable can be on the holder
Wire hole	Charging cable from this wire hole
Air hole	Forced air cooling through fans and air hole
Work indicator light Light bar option	AC power ON-GREEN DC OUTPUT ON-GREEN Fault- Red
10" touch screen	LCD Touch screen: Operating states such as remaining charging time and failure information, if a failure occurred, can be displayed. Setting parameter, view charging status, etc.
RFID card reader	Tap RFID card here to start and stop charging
Emergency stop button	Emergency Stop Button: Use this emergency circuit-breaker in order to stop the quick charger in case of emergency

General Operations & Safety Requirements

Before Inspection or any maintenance work is done, be sure that all electrical power is disconnected. Make sure that the main breaker of the DC Charger is locked out, as well as the upstream breaker in the distribution panel.

General Maintenance Requirements

Periodic maintenance must be established in order to obtain the best service from the EVSE charger. An annual check of the switchgear devices and all connections should be the minimum requirement. Equipment subject to highly repetitive operation may require more frequent maintenance. A permanent record of all maintenance work should be kept. The record should include a list of periodic checks and tests made, the date they were made, the condition of the equipment, and any repairs or adjustments that were performed. Maintenance employees must follow all recognized safety practices, such as those contained in the National Electric Safety Code and in company or other safety regulations. For specific information regarding the maintenance of devices, such as circuit breakers, RCD, relays, meters, etc.. refer to the separate instruction book provided for each device.

Enclosure Maintenance Requirements

The enclosure station requires no maintenance other than occasional cleaning.
Warning: To reduce the risk of electrical shock or equipment damage, do not allow opening the unit while cleaning it. Enclosure maintenance is performed only externally.
Clean the enclosure using a soft cloth lightly moistened with mild detergent solution.
Never use any type of abrasive pad, scouring powder, or flammable solvents such as alcohol or benzene.



Power Circuit Maintenance Requirements

Inspection of the power circuit is recommended at least once 3 month. More frequent inspections are recommended, if several load conditions, dust, moisture, or other unfavourable conditions exist.

MCB, RCD,

If the breaker remains open or closed for a long period of time, it is recommended that arrangements be made to open and close it several times in succession, preferably under load. At all times, it is important not to permit paint, oil or other foreign materials to remain on the insulating surfaces or the breaker as they may cause low resistance between points of different potential and result in eventual electrical breakdown. Always inspect the devices after a short circuit current has been interrupted. Normally, the over current protective device on the circuit will prevent any electrical damage except at the actual point of the short circuit. A thorough inspection of the entire system must be made after any large fault current to insure that there has been no mechanical damage to conductors, insulation, or equipment. Do not open sealed devices such as breaker trip units. If there is any possibility that sealed units may have been damaged, they should be replaced. At the time of inspection, the following checks should be made after the device has been de-energized.

- Manually operate the device several times checking for obstructions or excessive friction.
- Electrically operate the device several times (if breaker has electrical control) to ascertain whether the electrical attachments are functioning properly.

- Break-age of parts or extensive burning will indicate need for replacement.
- Check operation of tripping devices, including over current trip devices, making sure all have positive tripping action. (Discernible movement in tripping direction beyond point of tripping).
- Push test-button in the RCD device: positive tripping action (ensure RCD device is powered, therefore the contactor should be closed manually).

Contactor

Ensure a trouble free operation of the contactor until the next service is required.

As in the previous devices, always inspect the device after main breaker tripping.

At the same time, observations can be made to judge if the contactor operates well in the application.

If there is any possibility the unit has been damaged, it should be replaced.

Cable Maintenance Requirements

Inspect and check the cables as follows:

Inspect all power cable connections for signs of overheating and tighten all connections.

If severe discoloration or if damage is apparent, remove the damaged cable and replace any device with damaged terminal.

CAUTION: Be sure the condition which caused the overheating has been corrected before reenergizing.

Check the neutral bus and earth bus connection and mounting bolts for tightness.

Check that all wiring connections are tight and all control cabling is intact.

Gaskets Maintenance Requirements

Gaskets require regular maintenance to prevent mold and mildew and to maintain the elasticity of the seal.

Visually check the different gaskets or lid for tears or punctures. Leaks are indicated by a streak of frost that forms at the point of gasket failure.

Gasket and retainer groove cleaning can be accomplished with the use of warm soapy water and a soft bristle brush.

CAUTION: Avoid full strength cleaning products on gaskets as this can cause them to become brittle and prevent proper sealing. Never use sharp tools or knives to scrape or clean the gasket. This could tear the gaskets.

List Of Spare Parts and Instructions,

Controller Board,

Charging module,

LCD Screen,

CHAdEMO / CCS / AC Charging Cables

For instructions, please check the user manual to do replacement or contact us to assist to replace the parts.

Replacement of Fixed-Life Components

To prevent the device from failure due to worn out components, it is necessary to replace the components before they reach the end of their lifespan. Use the following replacement intervals as a guideline for the estimate of the total running time. Please contact a GERSAN G-Charge representative for further assistance when you replace the parts.

- Power feed cable: Approximately three (3) years.
- Intake and exhaust filters: Approximately three (3) years.
- Please keep in mind that the replacement interval of each part can vary depending on, for example, the usage environment of the device.

Troubleshooting

When a problem occurs in the charger, confirm the failure details based on the type of error screen displayed and perform the recommended recovery operation.

After completing the recommended recovery operation, run the charger according to Charger Operation Procedure.

IF YOU CANNOT RECOVER OR RUN YOUR CHARGER, PLEASE CONTACT US.

The following are possible error screens which may appear if the charger is experiencing an issue. Failure History Item List

Error Code	Description	Reason/Operation	Type
0x01	Connector plug out	Plug in	CCS
0x02	Emergency stop switch press down	Realease Emergency stop switch/Emergency stop switch broken	ALL
0x03	DC reverse	Confirm charger output DC+ and DC- connection & Start again	CHAdEMO
0x04	Connectot lock error	Check connector lock device	CHAdEMO
0x05	Isolation error	Check cable&connector, measure the resistance of the output positive and negative wires to ground	ALL
0x06	Isolation error	Check cable&connector, measure the resistance of the output positive and negative wires to ground	ALL
0x07	Isolation error	Check cable&connector, measure the resistance of the output positive and negative wires to ground	ALL
0x08	Output voltage error(>10V) before isolation test	Wait a moment and start charging again	CHAdEMO
0x10	No communication data	Replug connector and try again/Control board broken/Adjust 12V voltage to 13.7V	CCS
0x12	SLAC Session time out	Replug connector and try again/Reboot vehicle/Send SD card data to manufacturers	CCS
0x13	SDP timeout	Replug connector and try again/Reboot vehicle/Reboot charger/Send SD card data to manufacturers	CCS
0x14	EXCHANGE_IP timeout	Replug connector and try again/Reboot vehicle/Reboot charger/Send SD card data to manufacturers	CCS
0x15	SupportedAppProtocol timeout	Replug connector and try again/Reboot vehicle/Reboot charger/Send SD card data to manufacturers	CCS
0x16	Session Setup time out	Replug connector and try again/Reboot vehicle/Reboot charger/Send SD card data to manufacturers	CCS
0x17	Service Discovey time out	Replug connector and try again/Reboot vehicle/Reboot charger/Send SD card data to manufacturers	CCS
0x18	Service Payment Select time out	Replug connector and try again/Reboot vehicle/Reboot charger/Send SD card data to manufacturers	CCS
0x19	Contract Authentication time out	Replug connector and try again/Reboot vehicle/Reboot charger/Send SD card data to manufacturers	CCS
0x1a	Charger Parameter Discovery time out	Replug connector and try again/Reboot vehicle/Reboot charger/Send SD card data to manufacturers	CCS
0x1b	Cable Check time out	Replug connector and try again/Reboot vehicle/Reboot charger/Send SD card data to manufacturers	CCS
0x1c	PreCharge time out	Modules not turn on & try again/Modules circuit breaker is not closed/module is damaged/Output contactor broken/control board is damaged/wrong FW version /Calibrate voltage is need	CCS
0x20	Vehicle close TCP abnormal	Isolation error or some other emergency error , check vehicle screen if there have any information	CCS
0x21	Charger stop charging request time out	there is no current demand for charging, and no current during charging may cause an error; check the voltage and current module settings./Send SD card data to manufacturers	CCS
0x22	No BMS data at beginning	1 : Replug connector and restart 2 : Check CAN+ CAN- connection	CHAdEMO
0x23	Battery error at handshake session	Check vehicle screen/Replug connector and restart	CHAdEMO
0x24	Vehicle system error	Check vehicle screen/Confirm vehicle gear is correct /Replug connector and restart	CHAdEMO
0x25	Charge permission signa& bit lost at handshake session	1: Charging permission signal wiring problem 2: The control board IO port is damaged 3: The car charging procedure does not meet the specifications	CHAdEMO
0x26	Charge permission bit lost at handshake session	Check the information of vehicle dashboard	CHAdEMO

0x27	Charge permission signal lost at handshake session	1: Charging permission signal wiring problem 2: The control board IO port is damaged 3: The car charging procedure does not meet the specifications	CHAdEMO
0x28	CAN time out at handshake session	Check CAN connections	CHAdEMO
0x32	Charge permission signal lost after handshake session	1: Charging permission signal wiring problem 2: The control board IO port is damaged 3: The car charging procedure does not meet the specifications	CHAdEMO
0x33	CAN time out at handshake session 1	Check CAN connections	CHAdEMO
0x43	CAN time out at start charging session	Check CAN connections	CHAdEMO
0x52	Charge permission bit lost at start charging session	1: Charging permission signal wiring problem 2: The control board IO port is damaged 3: The car charging procedure does not meet the specifications	CHAdEMO
0x53	CAN time out at charging session	Check CAN connections	CHAdEMO/GBT
0x54	Vehicle battery error at start/charging session	Check whether there is an error display on the car dashboard; turn off/on the car and charge again	CHAdEMO
0x55	Vehicle system error at start/charging session	Check whether the car dashboard has an error display, check whether the vehicle gear is correct, recharge, and do no operation at vehicle during charging	CHAdEMO
0x57	Emergency stop during charging	Restart charging, do not press emergency stop during charging	CHAdEMO
0x58	Charge permission lost during charging	1: Charging permission signal wiring problem 2: The control board IO port is damaged 3: The car charging procedure does not meet the specifications	CHAdEMO
0x60	No current demand during charging	Restart vehicle, if problem continue ask vehicle manufacturer	CCS
0x63	CAN send failed	Check CAN connections, and restart charging	CHAdEMO/GBT
0x64	Isolation error during charging	Check the wiring of DC+ DC- and ground, check whether connector and point is too hot during charging or not, recharge	CHAdEMO
b111xxxx	abnormal at handshake session		CHAdEMO
bit0	Vehicle charging enable , 0 : disable 1 : enabled		CHAdEMO
bit1	Vehicle shift position , 0 : "Parking" position 1 : others		CHAdEMO
bit2	Charging system error , 0 : normal 1 : error		CHAdEMO
bit3	Vehicle contactor status , 0 : closed 1 : open		CHAdEMO
bit4	Normal stop request before charging 0:No request 1: Stop request		CHAdEMO
b101xxxx	Error during charging		CHAdEMO
bit0	Battery over voltage , 0 : normal 1 : fault		CHAdEMO
bit1	Battery under voltage , 0 : normal 1 : fault		CHAdEMO
bit2	Current deviation error , 0 : normal 1 : fault	Check the module settings, current settings, check whether the module does not turn on	CHAdEMO
bit3	High battery temperature , 0 : normal 1 : fault		CHAdEMO
bit4	Battery voltage deviation error , 0 : normal 1 : fault	Check the voltage settings on charger	CHAdEMO
0x91	Vehicle temperature abnormal(high or low)	Wait normal temperature and recharge	CCS
0x92	Vehicle shift position not on "Parking"	Put the vehicle gear into the "Parking" position	CCS
0x93	Lock connector failed	Check whether the connector is plugged in tightly, whether the lock hole is blocked by objects, and whether the charging port of the vehicle is abnormal	CCS
0x94	vehicle error	Check vehicle	CCS
0x95	Current deviation	Check the module settings, current settings, check whether the module does not turn on	CCS

0x96	Voltage deviation	Check the voltage sets on charger	CCS
0x9a	The charger is not compatible with the vehicle	Ask vehicle manufacture is followed DIN70121 or ISO15118	CCS

IF YOU NEED MAINTENANCE CHECK ASSISTANCE, PLEASE CONTACT US FOR FURTHER ASSISTANCE.
Email: info@gersan.com.tr