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Gresgying Digital Technology Co., Ltd. Maintenance Manual

Thank you for choosing Gresgying EV charging stations. This maintenance manual outlines covers two parts:

1. The routine check and maintenance of Gresgying DC fast charging stations.
2. failure & alarm code of Gresgying DC fast charging stations.

PART 1 Fault & Alarm Code

When there is a fault code on the display and a alarm code on the backend, please contact Gresgying technicians for assistance to solve the problem.

Please note that the disappearance of the alarm does not mean that the problem has been resolved. Please contact us promptly and we will provide a solution to the problem

Fault code	Alarm type	Alarm code	Alarm disappearing conditions
49	Main output contactor failure	35	The alarm disappears after powering off
52	Fuse failure	59	The alarm disappears after powering off
53	Lightning protection failure	78	The alarm disappears after powering off
60	Vehicle port voltage negative	61	The alarm can be cleared after pulling out the charging cable.

61	AC input overvoltage	82	<p>For 180kW and 120kW systems, the following conditions must be met at the same time for 10 seconds, the alarm disappears:</p> <ol style="list-style-type: none"> 1. In the host state, there are modules online, the AC contactor is closed, and the system emergency stop button is not triggered; 2. The AC side of the module is powered on and the module is online; 3. The minimum value of the 3-phase voltage of the module $<180V$ & and the maximum value of the 3-phase voltage of the module is $>243V$. The number of modules that meet this condition > 0. <p>for 60kW systems, the alarm disappears when the system is powered off;</p>
62	AC input undervoltage	81	<p>For 180kW and 120kW systems, the following conditions must be met at the same time for 10 seconds, the alarm disappears:</p> <ol style="list-style-type: none"> 1. In the host state, there are modules online, the AC contactor is closed, and the system emergency stop button is not triggered; 2. The AC side of the module is powered on and the module is online; 3. The minimum value of the 3-phase voltage of the module $<180V$ & and the maximum value of the 3-phase voltage of the module is $>243V$. The number of modules that meet this condition > 0. <p>for 60kW systems, the alarm disappears when the system is powered off;</p>
66	AC input phase A is missing.	83	<p>For 180kW and 120kW systems, the following conditions must be met at the same time for 10 seconds, the alarm disappears:</p> <ol style="list-style-type: none"> 1. In the host state, there are modules online, the AC contactor is closed, and the system emergency stop button is not triggered; 2. The AC side of the module is powered on and the module is online; 3. The minimum value of the 3-phase voltage of the module $<180V$ & and the maximum value of the 3-phase voltage of the module is $>243V$. The number of modules that meet this condition > 0. <p>for 60kW systems, the alarm disappears when the system is powered off;</p>
67	AC input phase B is missing.	83	<p>For 180kW and 120kW systems, the following conditions must be met at the same time for 10 seconds, the alarm disappears:</p> <ol style="list-style-type: none"> 1. In the host state, there are modules online, the AC contactor is closed, and the system emergency stop button is not triggered; 2. The AC side of the module is powered on and the module is online; 3. The minimum value of the 3-phase voltage of the module $<180V$ & and the maximum value of the 3-phase voltage of the module is $>243V$. The number of modules that meet this condition > 0. <p>for 60kW systems, the alarm disappears when the system is powered off;</p>

68	AC input phase C is missing.	83	For 180kW and 120kW systems, the following conditions must be met at the same time for 10 seconds, the alarm disappears: 1. In the host state, there are modules online, the AC contactor is closed, and the system emergency stop button is not triggered; 2. The AC side of the module is powered on and the module is online; 3. The minimum value of the 3-phase voltage of the module <180V & and the maximum value of the 3-phase voltage of the module is >243V. The number of modules that meet this condition > 0. for 60kW systems, the alarm disappears when the system is powered off;
76	The system has no available modules	84	
80	Meter offline	36	When the meter communication is normal, the alarm disappears.
83	insulation failure	39	The alarm can be cleared after disconnecting the charging cable from the charger.
84	System module mixed insertion	87	The alarm disappears after powering off the charger.
85	System emergency stop failure	73	After reset the emergency stop button, the alarm disappears.
86	Master-slave communication abnormality	76	When Master-slave communication is restored, the alarm disappears
87	Meter calibration error	42	1. For the 120KW system, pull out the charging cable and the alarm disappears; 2. For the 180KW system and 60KW system, power off the charger and the alarm disappears.
88	System door sensor failure	77	When the door is closed, the alarm disappears.
89	System fan failure	79	The alarm disappears after powering off the charger.
95	Duplicate TMU ID	40	The alarm disappears after powering off the charger.
135	Charging system does not match	65	The alarm disappears after powering off the charger.
136	Module startup failed	69	The alarm disappears after the charging cable is disconnected from the vehicle.
177	Gun tip over temperature warning	1078	1. In standard mode, if the temperature of the charging cable connector<60°C (when the charging session is finished or when the charger is at idle state) and lasts for 10 seconds, the alarm disappears; 2. In standard mode, the alarm disappears after disconnecting the charging cable from vehicle for 10 seconds.
186	Duplicate CMU ID	88	The alarm disappears after powering off the charger.
257	IO board offline	257	the alarm disappears after the communication between PCU and CMU is normal.

258	IO board failure	258	1. For IO board fault alarms triggered by IOB address anomalies and IOB command overruns, the alarms disappear after powering off; 2. For IO board fault alarms triggered by IO board offline and IO board interlocking, refer to the respective alarm disappearance conditions.
259	TMU interlock abnormality	1065	The alarm disappears after the charging cable is disconnected from the vehicle.
260	Abnormal voltage in front of output contactor	1066	The alarm disappears after the charging cable is disconnected from the vehicle.
261	The module address is out of range or the address is repeated	1341	The alarm disappears after powering off the charger.
262	Module slot mismatch	1342	The alarm disappears after powering off the charger.
263	TMU emergency stop failure	1069	The alarm disappears after emergency stop button of the terminal is reset.
265	TMU door sensor failure	1070	The alarm disappears when the terminal cabinet door is closed.
266	IO interlock fault	259	There is no such failure for single charging station.
267	CMU interlock failure	1344	For the 120kw system, the alarm disappears as long as one of the following conditions is met, 1. All charging cables of online terminals have been disconnected from vehicles; 2. The terminals are all in not charging state && the number of terminals with their charging cables disconnected from vehicle are not 0. 3. There is only one terminal at charging state at most; 4. All parallel contactors are open.
268	CMU has no available module failure	1345	If the charger system has available modules, the fault disappears.
269	AC input contactor refuses to operate/ malfunctions	1346	The alarm disappears after powering off the charger.
270	AC input adhesion failure	1347	The alarm disappears after powering off the charger.
272	Bleed circuit failure	1071	When the output voltage drops below 60V, the fault disappears.
273	TMU no module available fault	1068	For 180KW, if the terminal system has available modules, the fault disappears;
275	TCU offline fault	1099	1. The communication between the monitor and the TCU is normal, and the alarm disappears; 2. Under the non-TCU mode, the communication between the monitor and the master central control is normal, and the alarm disappears;
276	Meter shunt counterattack	1100	The alarm disappears after powering off the charger.

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PART 2 Routine Check and Maintenance

1. Routine check: periodic checks are mainly carried out to ensure the normal operation of equipment. The check content mainly involves on-site charging stations, fire protection, environment, safety, etc. If non-equipment problems occur, please report to the owner for corresponding actions.

Please fill in the “Equipment Maintenance Record” to track the operation of the charging station.

2. Maintenance: Maintain the discovered problems and hidden dangers.

Equipment Maintenance Record

Equipment Maintenance Record								
Site Name				S/N				
Maintenance Personnel				Maintenance Time				
No.	Type	No.	Content	Check Method	Recommended Frequency	Requirements	Results	
1	Solve problem of Fault/Alarm	1		Firmware upgrade/ replace spare parts/ confirmation	when there is a fault/alarm	1. Please confirm spare parts specification before and after replacement; 2. please confirm firmware version before and after replacement.	Solved	Pending
		2			when there is a fault/alarm		Solved	Pending
		3			when there is a fault/alarm		Solved	Pending

2	charging cable check	4	1. Check whether the charging cable is in tact and whether replacement is required. 2. If the charging cable is damaged, please replace the charging cable. 3. After replacement is completed, please check the phase sequence of DC±, A±, S±, CC1 and PE, and please check whether the wiring of the charging cable is tight.	visual check wiring check	every 3 months	1. after replacement is completed, please calibrate the charging cable.	Solved	Pending
3	dust filter check	5	Check the air inlet and outlet dust filters of the cabinet for blockage and clean them if necessary. The dust filter is a wearing part and needs to be replaced if it is damaged.	visual check	every month	1. Clean and dry the dust filter before reinstalling it.	Solved	Pending
4	Site safety check	6	Are there any cracks in the exposed construction wiring?	visual check	every 3 months		Pass	Fail
		7	Is the on-site firefighting equipment fully equipped?	visual check	every 3 months		Pass	Fail
		8	Are the vehicle barriers and anti-collision pillars in front of the charging station secure?	visual check	every 3 months		Pass	Fail
		9	Is there serious water accumulation around the equipment?	visual check	every 3 months		Pass	Fail
		10	If the charging station reports over temperature and the filter has serious dust accumulation, the dust filter needs to be cleaned/ replaced immediately.	visual check	every month		Pass	Fail
5	Function check	11	check whether the display screen is normal, the touch control is normal, and there is no screen blur or screen flickering.	visual check	every 3 months		Pass	Fail
		12	the mechanical lock on the charging cable connector is locked and released normally.	visual check/test	every 3 months		Pass	Fail
		13	The power module works in normal state, the output is normal, there are no abnormal alarms, and the module fan makes no abnormal noise.	visual check/backend check	every 3 months		Pass	Fail
		14	The charging stations are online, network communication is normal, QR code scan is normal.	display check/visual check	every 3 months		Pass	Fail

		15	The lightning protector is normal, there is no breakdown, and the system has no alarms.	visual check	every 3 months		Pass	Fail
		16	Anti-tipping, anti-water immersion device, and access control without error triggering	backend check	every 3 months		Pass	Fail
6	Cabinet check	17	there is no dust or painting on the charging station. there is no damage to the antenna.	visual check	every 3 months		Pass	Fail
		18	the charging station is installed vertically on the ground, not loose or tilted	visual check	every 3 months		Pass	Fail
		19	the charging station cabinet, housing and door have no deformation, impact, damaged, paint peeling, rusts, scratches.	visual check	every 3 months		Pass	Fail
		20	The QR codes or related logos, nameplates, etc. affixed to the charging stations are not faded or peeled off.	visual check	every 3 months		Pass	Fail
		21	The charging cable is placed at its normal position, with no damage or serious weariness; the cable connectors are not loose or deformed.	visual check	every 3 months		Pass	Fail
7	Inside Cabinet check	22	The internal and external ground connections of the charging stations are reliable, without breakage, blackening, corrosion or damage.	visual check	every 3 months		Pass	Fail
		23	There are no abnormal sounds (such as buzzing) from the relays in the charging stations, and there is no peculiar smell or burning smell.	visual check/smell	every 3 months		Pass	Fail
		24	There is no leakage, water stains, water accumulation, or rusty screws inside the charging station.	visual check	every 3 months		Pass	Fail
		25	The cable inlet at the bottom of the charging station is tightly sealed with fireproof mud and has no cracks.	visual check	every 3 months		Pass	Fail
		26	The terminals and wiring of the main control board of the charging station are not loose and inserted in place; the components are not damaged.	visual check	every 3 months		Pass	Fail