CRT306/CRT308 Trouble Shooting And FAQ List

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T2 Wheel Motor Stall Detected

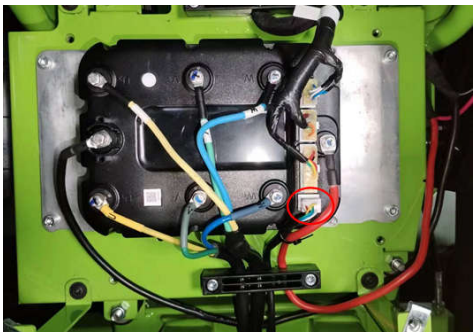
Tool： Computer、PCAN、Debugging wire

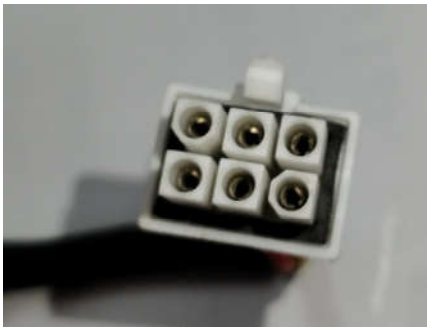
Check：

1.Display show T2 fault code.

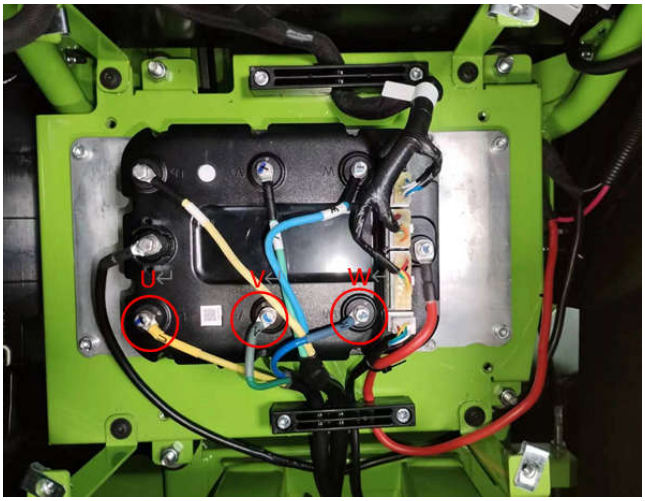
2. Release the brake on a flat road, turn off the power, and check if there is any noise and sticking of the vehicle.

3. Check the pin status of the corresponding motor encoder connector and whether the connector is connected properly.

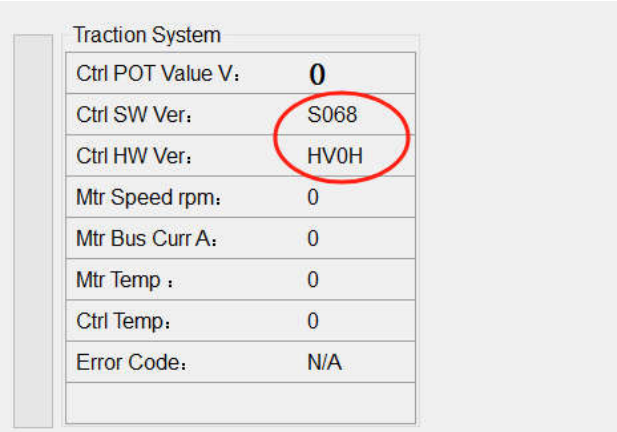




4. Check whether the phase wire of the corresponding motor is damaged and whether the phase wire installation is misaligned.



5.Use the Greenworks controller application Check whether the controller software version and parameter version is correct， If the version is incorrect, flash the correct version.



6.Restart the vehicle. If this fault code persists, please replace the motor or controller.

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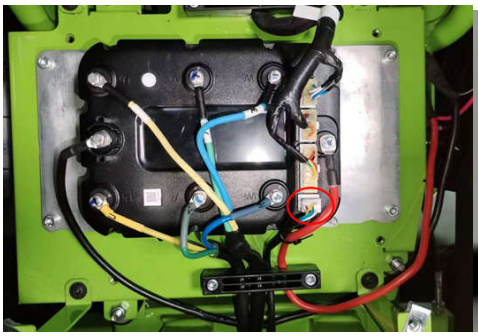
T5 Wheel Motor Encoder Abnormal

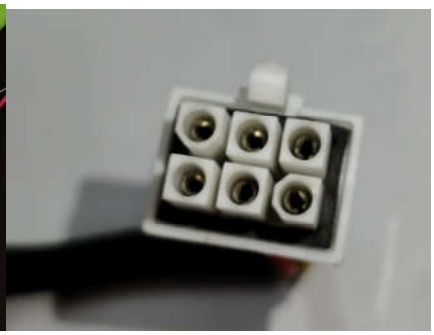
Tool： Multimeter、Computer、PCAN、Debugging wire

Check：

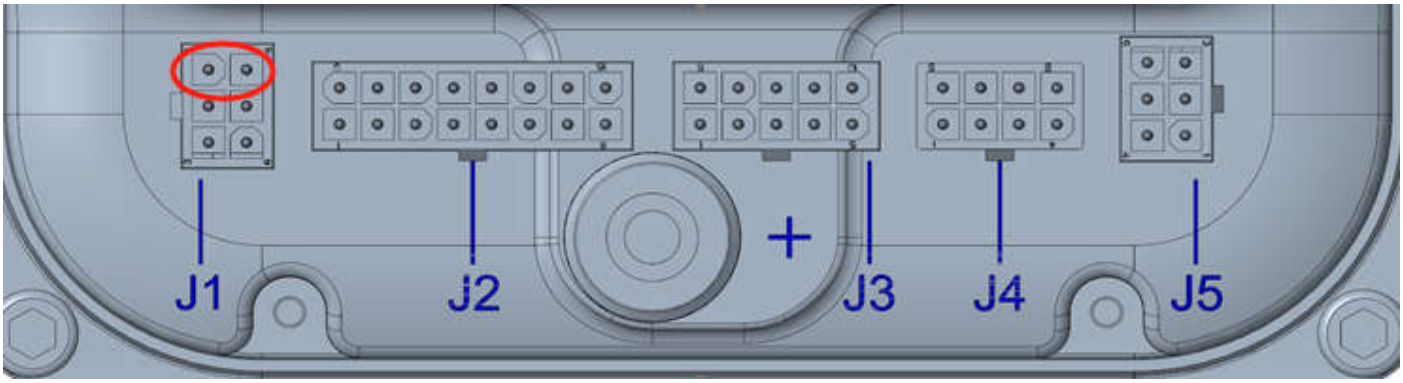
1. Display show T5 fault code

2. Check the pin status of the encoder connector corresponding to the motor and whether the connector is connected properly;





3.Use a multimeter voltage range to measure the voltage between the red and black wires below the picture which is marked red. If the voltage is below 5V or above 5V, it is determined that the 5V power supply of the controller is faulty and the controller needs to be replaced.



4.If the encoder 5V power supply is normal, but the fault still exists, it is considered that the encoder is faulty. Please replace the motor encoder.

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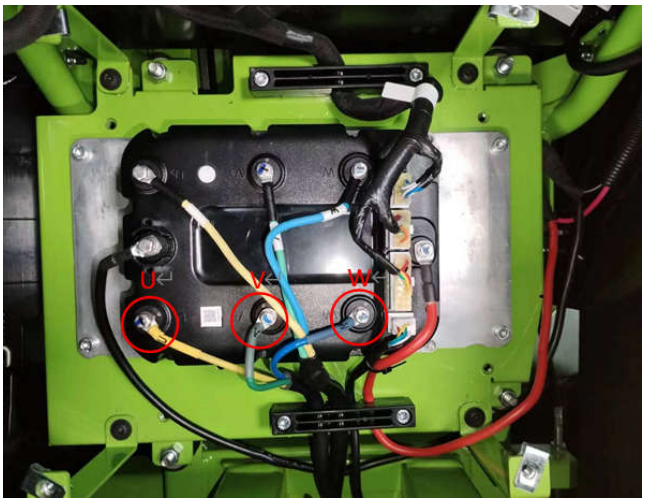
T6 Wheel Motor Phase Open

Tool： Multimeter、Computer、PCAN、Debugging wire

Check：

1.Display show T6 fault code

2. Check whether the phase wire of the corresponding motor is damaged and whether the mounting screws are tight.



3.Restart the vehicle. If the fault continues to occur measure the resistance value between the motor U \ V \ W phases. If the value displayed on the multimeter is 0 or infinity it means that the motor has been damaged inside and a new motor needs to be replaced.

T7 Wheel Motor Controller Mosfet error

Tool： Multimeter、Computer、PCAN、Debugging wire

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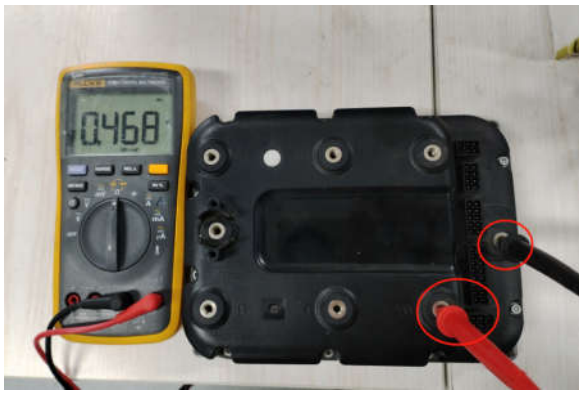
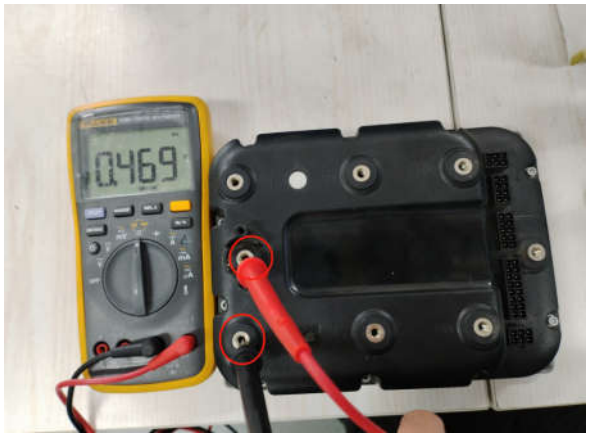
Check：

1. Display show T7 fault code.
2. Set the Multimeter to the diode position and measure the voltage between the U \ V \ W phase and the positive electrode.



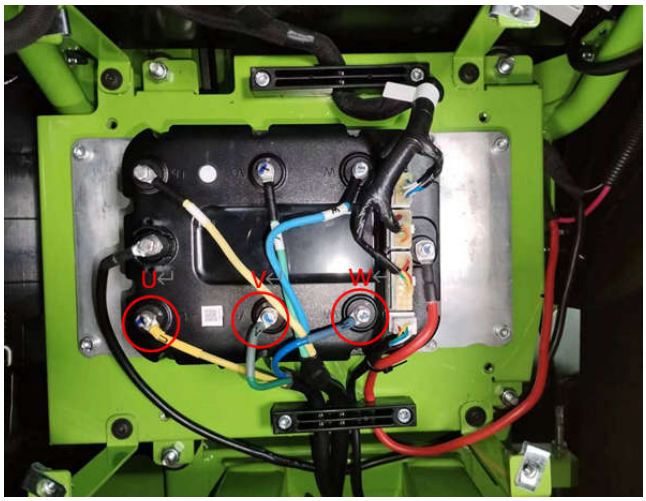
3. Set the Multimeter to the diode position and measure the voltage between the U \ V \ W phase and the negative electrode.



4. If the range is 0.47-0.55V, the MOS is normal. Otherwise, it is judged that the MOS is damaged and the controller needs to be replaced. Refer to the maintenance manual for the specific disassembly and assembly steps.
5. Check whether the insulation skin of motor U \ V \ W phase wire is broken and copper wire is together at

the damage, If the wiring harness is damaged, dispose of the damaged area.

6. Remove the U/V/W phase line of the motor controller, Measure the resistance value between U \ V \ W phases and the motor housing using a multimeter resistance range.



7. If the resistance measured by the motor phase line and the housing is infinite, observe whether there is any damage to the outer packaging of the motor encoder's wiring harness. If the wiring harness is damaged, replace the motor.

T8 Wheel Motor Controller Undervoltage

Tool： Multimeter、Computer、PCAN、Debugging wire

Check：

1.Display show T8 fault code

2.Restart Vehicle.

3.If this fault code persists, please use a multimeter to measure the bus DC voltage of the controller.

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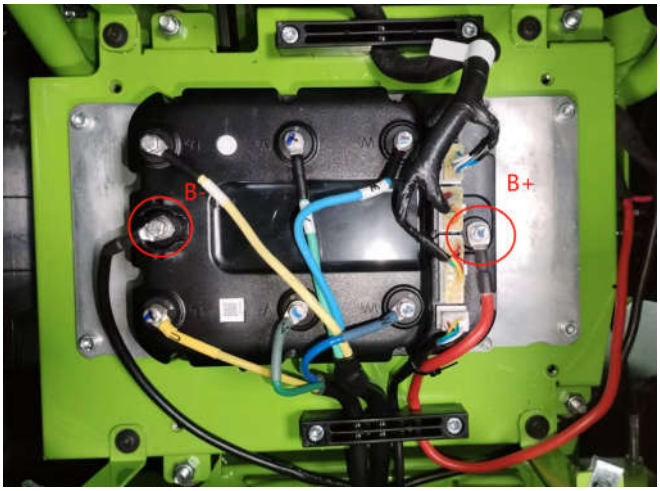

4.If the value displayed on the multimeter is greater than 42V (60V platform) or 56V (80V/82V platform), it indicates that the internal voltage sensor of the motor controller is faulty and the controller needs to be replaced.

5.If the value displayed on the multimeter is less than42V (60V platform) or 56V (80V/82V platform), replace the fully charged battery pack before use.

T9 Wheel Motor Controller Overvoltage

Tool： Multimeter、Computer、PCAN、Debugging wire

Check：

1.Display show T9 fault code

2.Restart Vehicle.

3.If this fault code persists, Vehicle power on Please use a multimeter to measure the bus DC voltage of the controller.

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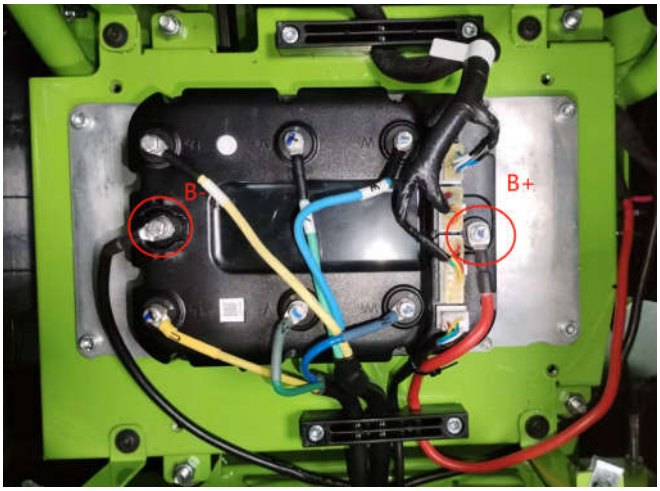

4.If the value displayed on the multimeter is less than 73V (60V platform) or 93V (80V/82V platform),it indicates that the internal voltage sensor of the motor controller is faulty and the controller needs to be replaced.

5.If the value displayed on the multimeter is greater than 73V (60V platform) or 93V(80V/82V platform),it indicates a battery failure.

T12 Wheel Motor Overtemp

Tool： Infrared Thermometers、Multimeter、Computer、PCAN、Debugging wire

Check：

1.Display show T12 fault code

2. Release the brake on a flat road, turn off the power, and check if there is any noise and sticking of the vehicle.

3. Restart the vehicle. Read the feedback temperature of the controller through the host computer ToolsForCAN-PlatformChecker, If the temperature value of the motor is high, it means that the vehicle has been in overload condition for a long time and the duration of the climb needs to be reduced.

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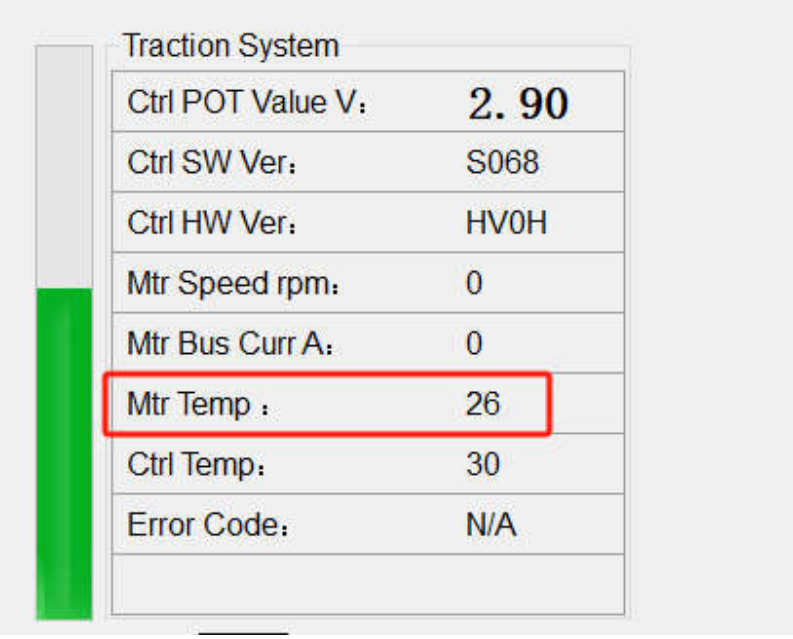
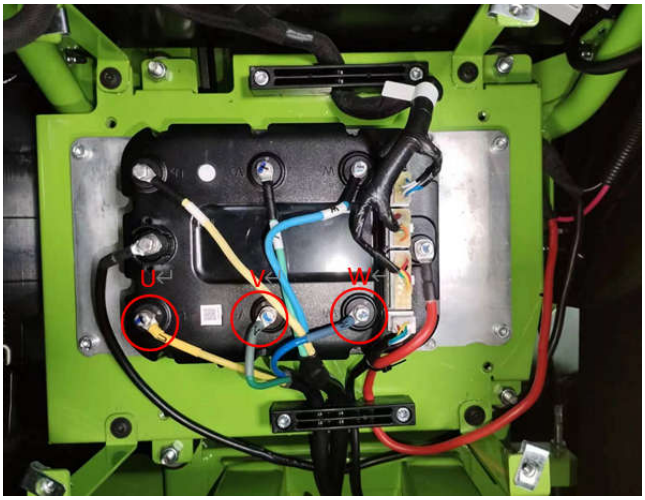
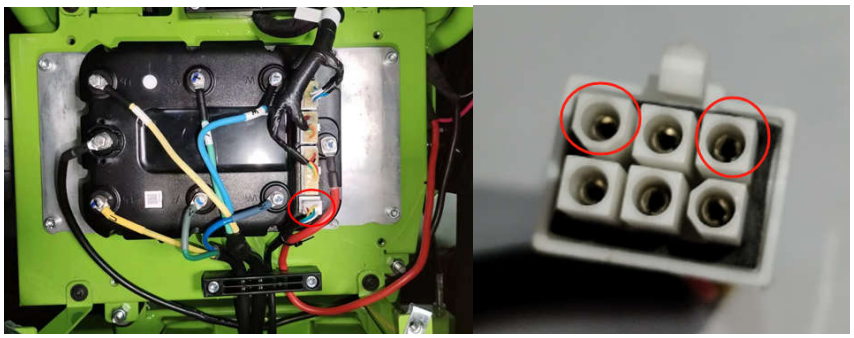


4. Restart the vehicle. If the fault is not eliminated, check the connection of the motor U/V/W phase line on the controller and tighten the loose bolts.



5. Restart the vehicle. If the fault is not eliminated, check the current ambient temperature. Measure the resistance value of the motor temperature sensor below the picture which is marked red.



6. Check the table against the actual temperature to see if the resistance value is correct(If at room temperature 25℃ environment, it returns to about 570Ω, it means that the temperature sensor is normal. If

.

the resistance value is above 629Ω, it indicates that the temperature sensor has been damaged, so the motor must be replaced.)

Table 7. Ambient temperature, corresponding resistance, temperature coefficient and maximum expected temperature error for KTY84/130 and KTY84/150

$I_{sen(cont)}$ = 2 mA.

Ambient temperature		Temperature coefficient (%/K)	KTY84/130				KTY84/150			
(°C)	(°F)		Resistance (Ω)			Temperature error (K)	Resistance (Ω)			Temperature error (K)
			Min	Typ	Max		Min	Typ	Max	
−40	−40	0.84	340	359	379	±6.48	332	359	386	±8.85
−30	−22	0.83	370	391	411	±6.36	362	391	419	±8.76
−20	−4	0.82	403	424	446	±6.26	394	424	455	±8.7
−10	14	0.80	437	460	483	±6.16	428	460	492	±8.65
0	32	0.79	474	498	522	±6.07	464	498	532	±8.61
10	50	0.77	514	538	563	±5.98	503	538	574	±8.58
20	68	0.75	555	581	607	±5.89	544	581	618	±8.55
25	77	0.74	577	603	629	±5.84	565	603	641	±8.54
30	86	0.73	599	626	652	±5.79	587	626	665	±8.53
40	104	0.71	645	672	700	±5.69	632	672	713	±8.5
50	122	0.70	694	722	750	±5.59	679	722	764	±8.46
60	140	0.68	744	773	801	±5.47	729	773	817	±8.42
70	158	0.66	797	826	855	±5.34	781	826	872	±8.37
80	176	0.64	852	882	912	±5.21	835	882	929	±8.31
90	194	0.63	910	940	970	±5.06	891	940	989	±8.25
100	212	0.61	970	1000	1030	±4.9	950	1000	1050	±8.17
110	230	0.60	1029	1062	1096	±5.31	1007	1062	1117	±8.66
120	248	0.58	1089	1127	1164	±5.73	1067	1127	1187	±9.17
130	266	0.57	1152	1194	1235	±6.17	1128	1194	1259	±9.69
140	284	0.55	1216	1262	1309	±6.63	1191	1262	1334	±10.24
150	302	0.54	1282	1334	1385	±7.1	1256	1334	1412	±10.8
160	320	0.53	1350	1407	1463	±7.59	1322	1407	1492	±11.37
170	338	0.52	1420	1482	1544	±8.1	1391	1482	1574	±11.96
180	356	0.51	1492	1560	1628	±8.62	1461	1560	1659	±12.58
190	374	0.49	1566	1640	1714	±9.15	1533	1640	1747	±13.2
200	392	0.48	1641	1722	1803	±9.71	1607	1722	1837	±13.85
210	410	0.47	1719	1807	1894	±10.28	1683	1807	1931	±14.51
220	428	0.46	1798	1893	1988	±10.87	1760	1893	2026	±15.19
230	446	0.45	1879	1982	2085	±11.47	1839	1982	2125	±15.88
240	464	0.44	1962	2073	2184	±12.09	1920	2073	2226	±16.59
250	482	0.44	2046	2166	2286	±12.73	2003	2166	2329	±17.32
260	500	0.42	2132	2261	2390	±13.44	2087	2261	2436	±18.15
270	518	0.41	2219	2357	2496	±14.44	2172	2357	2543	±19.36
280	536	0.38	2304	2452	2600	±15.94	2255	2452	2650	±21.21
290	554	0.34	2384	2542	2700	±18.26	2333	2542	2751	±24.14
300	572	0.29	2456	2624	2791	±22.12	2404	2624	2844	±29.05

T13 Wheel Motor Controller Overtemp

Tool： Infrared Thermometers、Multimeter、Computer、PCAN、Debugging wire

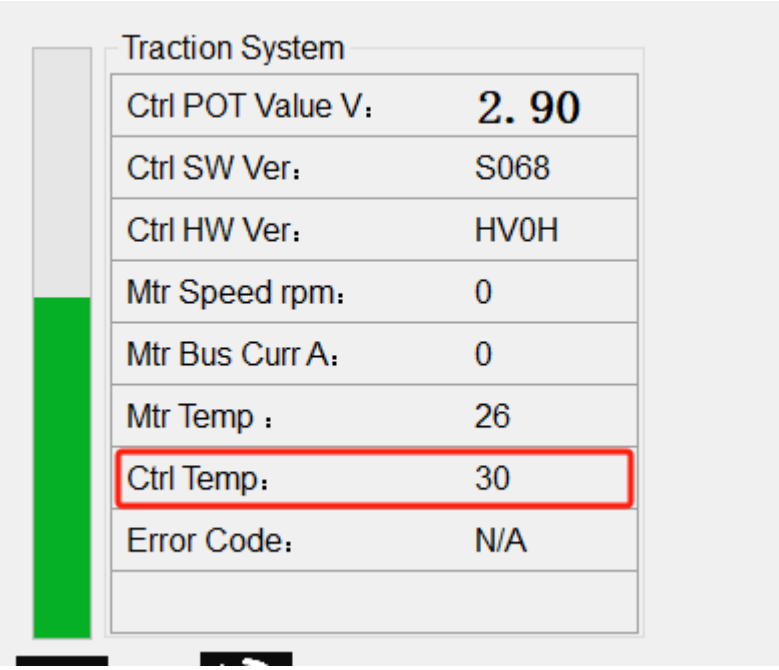


Check：

1.Display show T13 fault code

2. Release the brake on a flat road, turn off the power, and check if there is any noise and sticking of the vehicle.

3. Restart the vehicle. Read the feedback temperature of the controller through the host computer ToolsForCAN-PlatformChecker , If the temperature value of the controller is high, it means that the vehicle has been in overload condition for a long time and the duration of the climb needs to be reduced.



4. Restart the vehicle. If the fault is not eliminated, check the connection of the motor U/V/W phase line on the controller and tighten the loose bolts.

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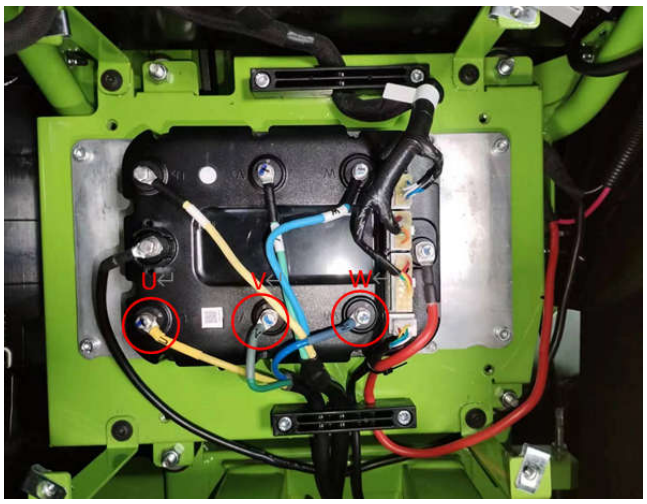
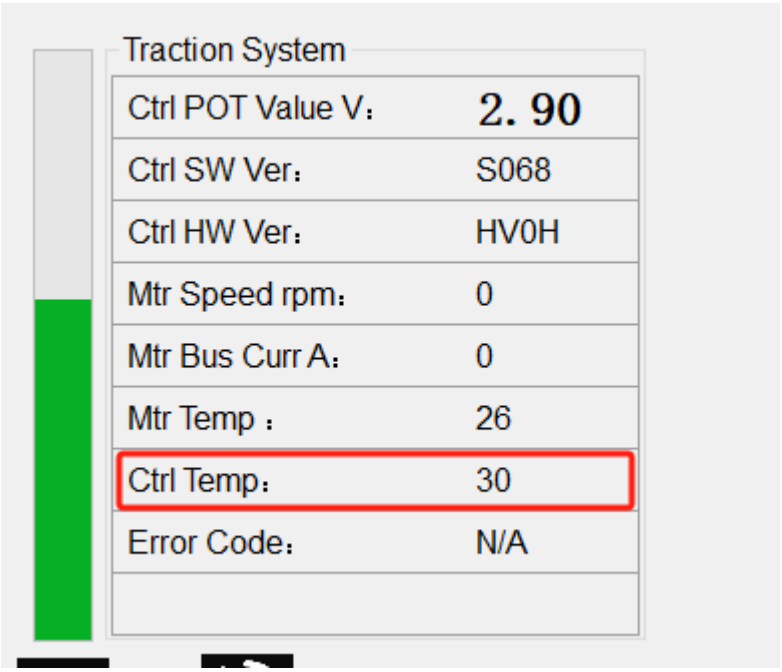


5. Restart the vehicle. If the fault is not eliminated. Read the temperature value of the controller through the host computer ToolsForCAN-PlatformChecker after the controller cools to room temperature. If the difference is significant it indicates that the internal temperature sensor of the controller is faulty and needs to be replaced with a new controller.



T15 Wheel Motor Controller Hardware Overcurrent

Tool: Multimeter、Computer、PCAN、Debugging wire

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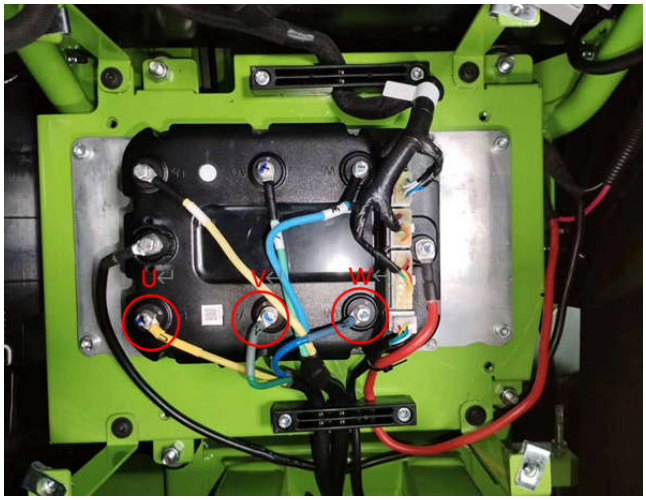
Check：

1.Display show T15 fault code

2. Check whether the insulation skin of motor U \ V \ W phase wire is broken and copper wire is together at the damage, If the wiring harness is damaged, dispose of the damaged area.

3. Remove the U/V/W phase line of the motor controller, Measure the resistance value between U \ V \ W phases and the motor housing using a multimeter resistance range.



4. If the resistance measured by the motor phase line and the housing is infinite, observe whether there is any damage to the outer packaging of the motor encoder's wiring harness. If the wiring harness is damaged, replace the motor.

5. Set the Multimeter to the diode position and measure the voltage between the U \ V \ W phase and the positive electrode.

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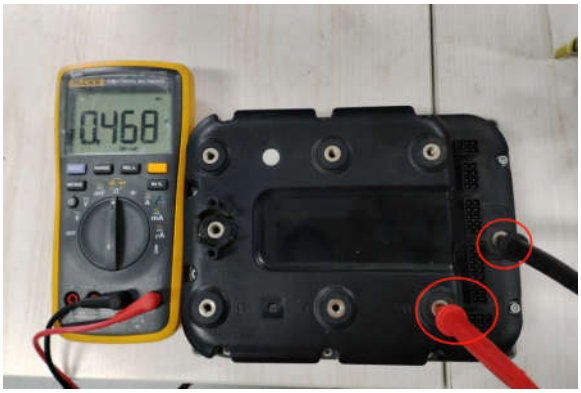
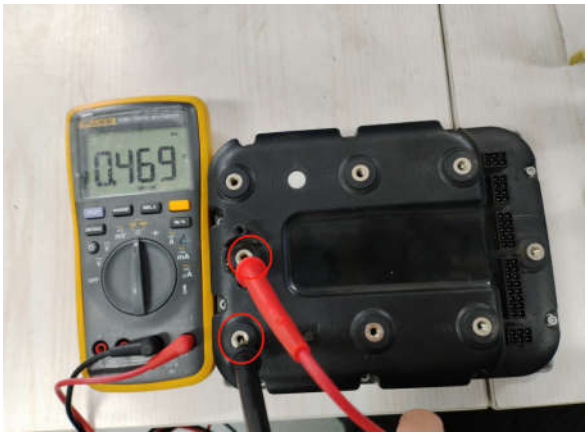


6. Set the Multimeter to the diode position and measure the voltage between the U \ V \ W phase and the negative electrode.



7. If the range is 0.47-0.55V, the MOS is normal. Otherwise, it is judged that the MOS is damaged and the controller needs to be replaced. Refer to the maintenance manual for the specific disassembly and assembly steps.

T16 Potentiometer error

Tool： Multimeter、Computer、PCAN、Debugging wire

Check：

1.Display show T16 fault code

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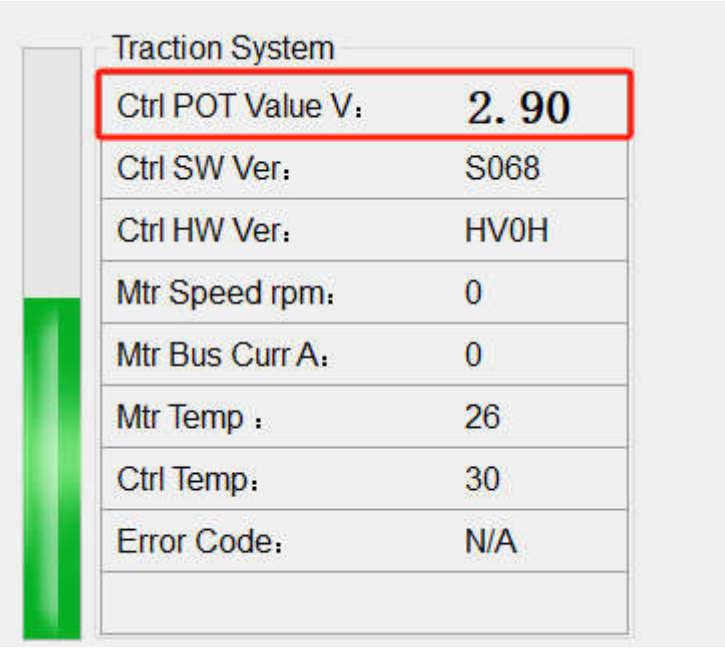
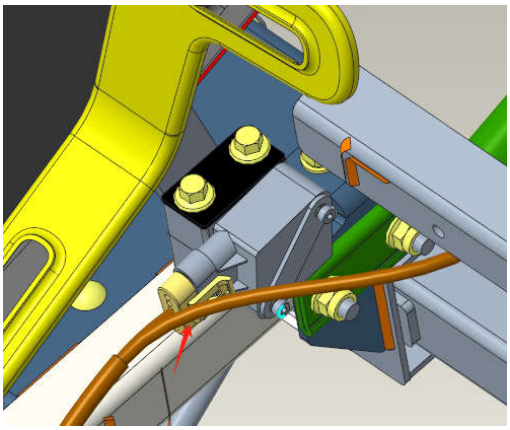
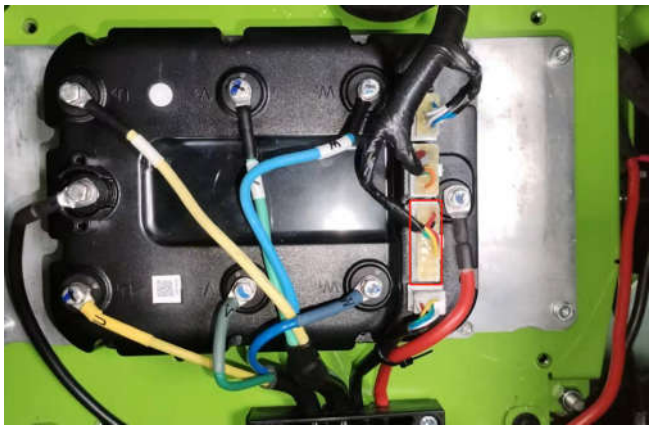
2. Read the voltage value of the potentiometer through the host computer ToolsForCAN-PlatformChecker; If the potentiometer voltage value changes abnormally, the potentiometer needs to be replaced.



3. If the actual voltage value is greater than 4.7V or less than 0.15V, check the harness of the potentiometer and the pin connector and connector status of the Potentiometer.





T19 Vehicle Initial State Detection Abnormal

Check:

1.Display show T19 fault code.

2.Check if the accelerator pedal is pressed when turning on the vehicle power.

3.Check if the person is not on the seat when the vehicle is moving or the accelerator pedal is pressed.

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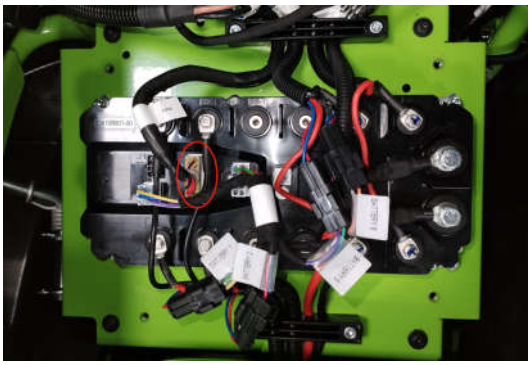
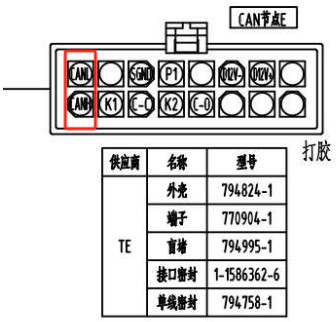
T23 PMU CAN Communication Abnormal

Tool： Multimeter、Computer、PCAN、Debugging wire

Check：

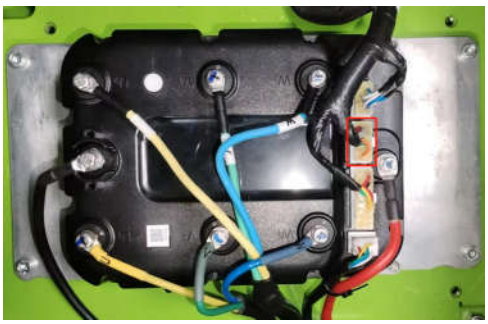
1.Check if the PMU plugin is loose, check if the PMU plugin CAN-H and CAN-L have reacted needles, and if there is any debris on the surface of the PMU plugin, causing poor contact of the plugin

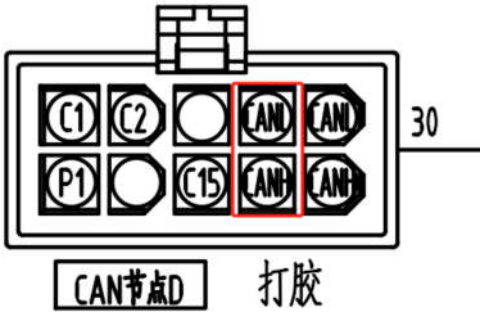




供应商	名称	型号
TE	外壳	794824-1
	端子	770904-1
	盲堵	794995-1
	接口密封	1-1586362-6
	单线密封	794758-1

2.If there is no problem with the PMU plugin, use a multi-meter to check if the CAN-H and CAN-L connections between the controller plugin and the PMU plugin are conductive. If there is no continuity, replace the main harness of the vehicle.





T31 Seat switch verification error

.

Tool： Multimeter

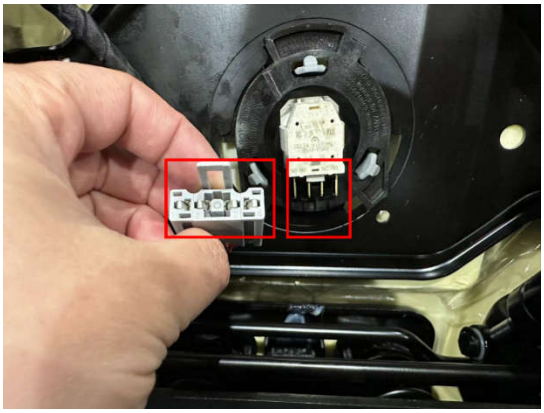
Check：

1.Display show T31 fault code.

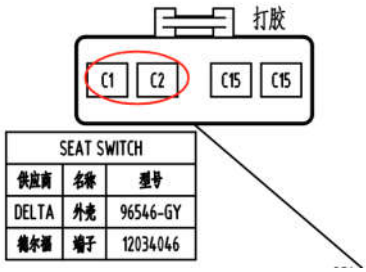
2.Adjust the sitting posture and observe the fault.

3.Check if the seat switch is assembly correctly.

4.Check the pin status of the seat switch connector whether the connector is connected properly.



5.Disconnect the seat switch connector, use a multi-meter to measure the resistance between C1 of Pin 1 and C2 of Pin2.Check if it's short-circuit.



6. Using a multi-meter to Check whether there is open circuit between seat switch signal and controller.

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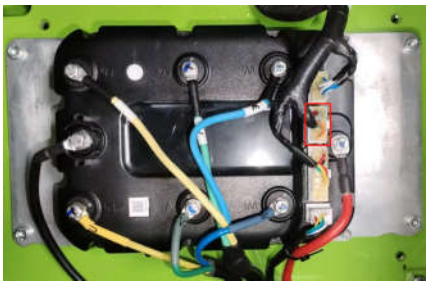
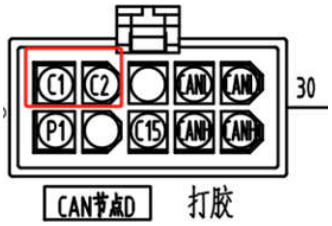
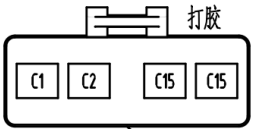






7. Replace the seat switch.

8. Replace the controller.

T32 Software certification error

Check：

1.Display show T32 fault code

2.Change the controller after restart the power several times.

T 63 Wheel Motor Temperature Sensor Abnormal

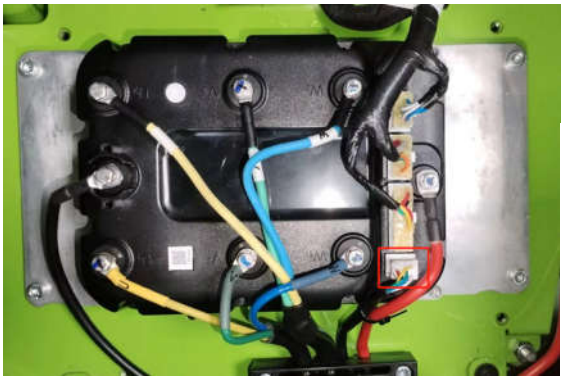
Tool： Infrared Thermometers、Multimeter、Computer、PCAN、Debugging wire

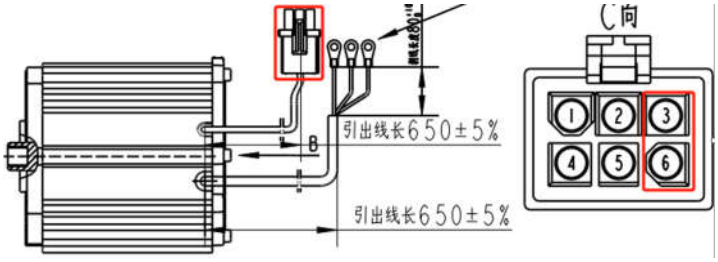
Check：

1.Display show T63 fault code.

2. Restart the vehicle. If the fault is not eliminated, check the current ambient temperature. Measure the resistance value of the motor temperature sensor. Measure the pin3 and pin6 of the 6pins connector, which are temperature.

.





4.Check the table against the actual temperature to see if the resistance value is correct(If at room temperature 25℃ environment, it returns to about 570Ω, it means that the temperature sensor is normal. If the resistance value is above 629Ω, it indicates that the temperature sensor has been damaged, so the motor must be replaced.)

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Table 7. Ambient temperature, corresponding resistance, temperature coefficient and maximum expected temperature error for KTY84/130 and KTY84/150

$I_{sen(cont)}$ = 2 mA.

Ambient temperature		Temperature coefficient (%/K)	KTY84/130				KTY84/150			
(°C)	(°F)		Resistance (Ω)			Temperature error (K)	Resistance (Ω)			Temperature error (K)
			Min	Typ	Max		Min	Typ	Max	
−40	−40	0.84	340	359	379	±6.48	332	359	386	±8.85
−30	−22	0.83	370	391	411	±6.36	362	391	419	±8.76
−20	−4	0.82	403	424	446	±6.26	394	424	455	±8.7
−10	14	0.80	437	460	483	±6.16	428	460	492	±8.65
0	32	0.79	474	498	522	±6.07	464	498	532	±8.61
10	50	0.77	514	538	563	±5.98	503	538	574	±8.58
20	68	0.75	555	581	607	±5.89	544	581	618	±8.55
25	77	0.74	577	603	629	±5.84	565	603	641	±8.54
30	86	0.73	599	626	652	±5.79	587	626	665	±8.53
40	104	0.71	645	672	700	±5.69	632	672	713	±8.5
50	122	0.70	694	722	750	±5.59	679	722	764	±8.46
60	140	0.68	744	773	801	±5.47	729	773	817	±8.42
70	158	0.66	797	826	855	±5.34	781	826	872	±8.37
80	176	0.64	852	882	912	±5.21	835	882	929	±8.31
90	194	0.63	910	940	970	±5.06	891	940	989	±8.25
100	212	0.61	970	1000	1030	±4.9	950	1000	1050	±8.17
110	230	0.60	1029	1062	1096	±5.31	1007	1062	1117	±8.66
120	248	0.58	1089	1127	1164	±5.73	1067	1127	1187	±9.17
130	266	0.57	1152	1194	1235	±6.17	1128	1194	1259	±9.69
140	284	0.55	1216	1262	1309	±6.63	1191	1262	1334	±10.24
150	302	0.54	1282	1334	1385	±7.1	1256	1334	1412	±10.8
160	320	0.53	1350	1407	1463	±7.59	1322	1407	1492	±11.37
170	338	0.52	1420	1482	1544	±8.1	1391	1482	1574	±11.96
180	356	0.51	1492	1560	1628	±8.62	1461	1560	1659	±12.58
190	374	0.49	1566	1640	1714	±9.15	1533	1640	1747	±13.2
200	392	0.48	1641	1722	1803	±9.71	1607	1722	1837	±13.85
210	410	0.47	1719	1807	1894	±10.28	1683	1807	1931	±14.51
220	428	0.46	1798	1893	1988	±10.87	1760	1893	2026	±15.19
230	446	0.45	1879	1982	2085	±11.47	1839	1982	2125	±15.88
240	464	0.44	1962	2073	2184	±12.09	1920	2073	2226	±16.59
250	482	0.44	2046	2166	2286	±12.73	2003	2166	2329	±17.32
260	500	0.42	2132	2261	2390	±13.44	2087	2261	2436	±18.15
270	518	0.41	2219	2357	2496	±14.44	2172	2357	2543	±19.36
280	536	0.38	2304	2452	2600	±15.94	2255	2452	2650	±21.21
290	554	0.34	2384	2542	2700	±18.26	2333	2542	2751	±24.14
300	572	0.29	2456	2624	2791	±22.12	2404	2624	2844	±29.05

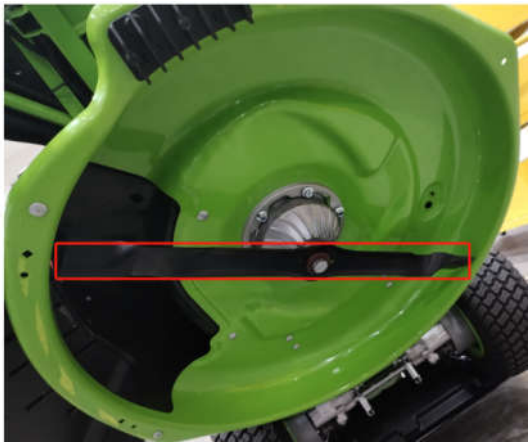
M2 Blade motor stalled

Tool： Multimeter、Computer、PCAN、Debugging wire

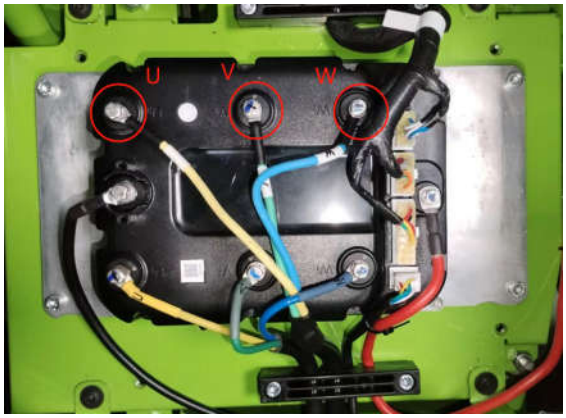
Check：

1.Display show M2 fault code.

2.Check whether the blade is stuck, If it is stuck, it is necessary to clean the debris or replace the blade to make it work normally.



3.Check whether the phase wire of the blade motor is damaged and whether the phase wire installation is misaligned.



4.Check parameter version.

Blade System

M Ctrl SW Ver：	S025
M Ctrl HW Ver：	H00H
M Mtr Speed rpm：	0
M Mtr Bus Curr A：	0
M Ctrl Temp：	0
Error Code：	N/A

5.Reset the PTO switch.

M6 Controller phase loss

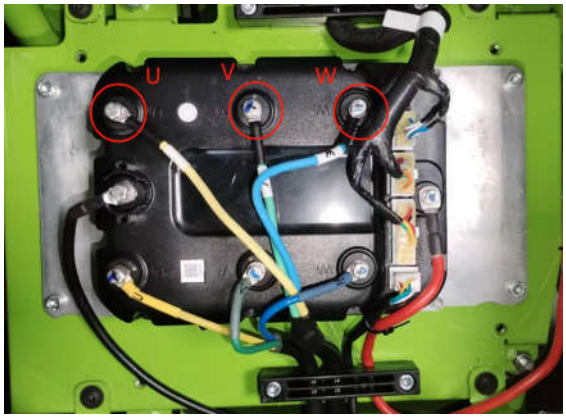
Tool： Multimeter、Computer、PCAN、Debugging wire



Check：

1.Display show M6 fault code.

2.Check whether the motor phase line is reliably connected to the controller. Check the positions of the three screws. If they are loose. tighten the loose bolts and Check if screws are found to be damaged. Replace the new screws. If the controller screw hole is damaged and the controller needs to be replaced.



3.Restart the vehicle. If the fault continues to occur measure the resistance value between the motor U \ V \ W phases. If the value displayed on the multimeter is zero or infinity it means that the motor has been damaged inside and a new blade motor needs to be replaced.

M7 MOSFET error

Tool： Multimeter、Computer、PCAN、Debugging wire

Check：

1.Display show M7 fault code.

2.keep the vehicle power off state.

3.Set the Multimeter to the diode position and measure the voltage between the U \ V \ W phase and the positive electrode.

4.Set the Multimeter to the diode position and measure the voltage between the U \ V \ W phase and the

negative electrode.

5.If the range is 4.5-5.0V, the MOS is normal. Otherwise, it is judged that the MOS is damaged and the controller needs to be replaced. Refer to the maintenance manual for the specific disassembly and assembly steps.

M8 Controller undervoltage

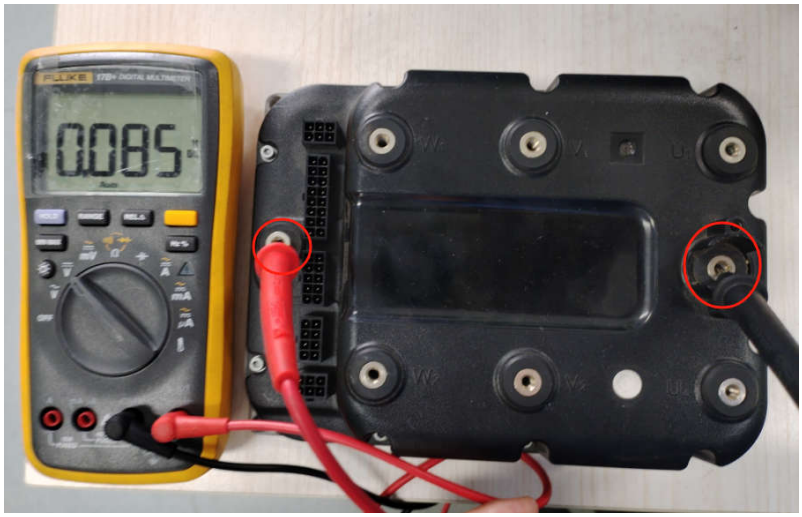
Tool： Multimeter、Computer、PCAN、Debugging wire

Check：

1.Display show M8 fault code.

2.Restart Vehicle.

3.If this fault code persists, please use a multimeter to measure the bus DC voltage of the controller.



4.If the value displayed on the multimeter is greater than 42V/56V, it indicates that the internal voltage sensor of the motor controller is faulty and the controller needs to be replaced. Refer to the maintenance manual for the specific disassembly and assembly steps.

5.If the value displayed on the multimeter is less than 42V/56V, The battery pack undervoltage.

M9 Controller overvoltage

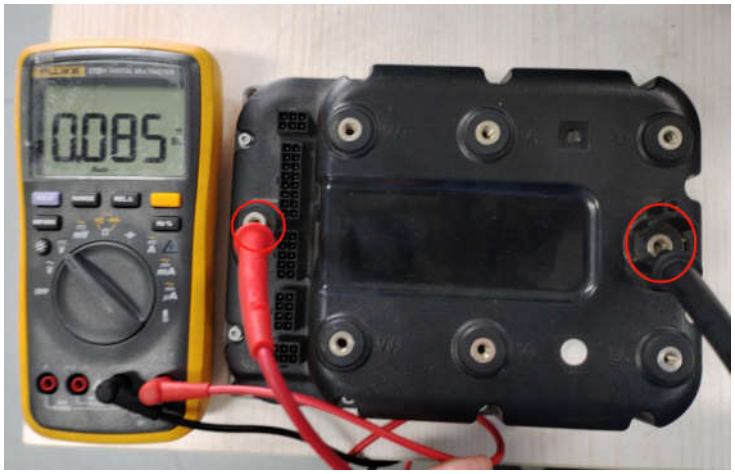
Tool： Multimeter、Computer、PCAN、Debugging wire

Check：

1.Display show M9 fault code.

2.Restart Vehicle.

3.If this fault code persists, Please use a multimeter to measure the bus DC voltage of the controller.



4.If the value displayed on the multimeter is greater than 73V/90V, it indicates that the internal voltage sensor of the motor controller is faulty and the controller needs to be replaced. Refer to the maintenance manual for the specific disassembly and assembly steps.

5.If the value displayed on the multimeter is less than 73V/90V, The battery pack voltage is abnormal.

M13 Controller overtemperature

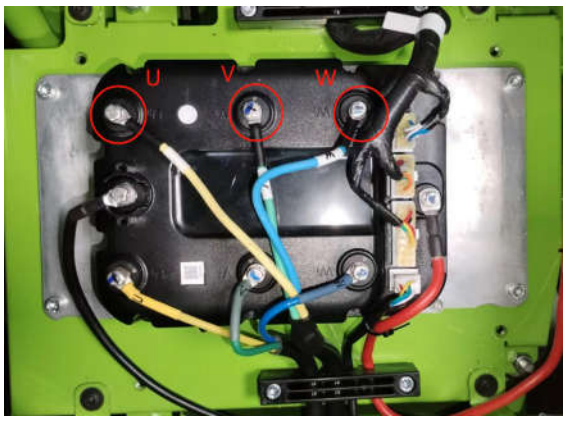
Tool： Multimeter、Computer、PCAN、Debugging wire

Check：

1.Display show M13 fault code.

2.Move the vehicle to an open area without grass, restart the cutter motor If the Fault disappears, the cause of the fault is the controller heating caused by the overload of the cutter motor, should be reduce mowing density.

3.Restart the vehicle. If the fault continues to occur Check the connection of the motor U/V/W phase line on the controller and tighten the loose bolts.



4.Restart the vehicle. If the fault continues to occur. needs to be replaced with a new cutting blade controller.

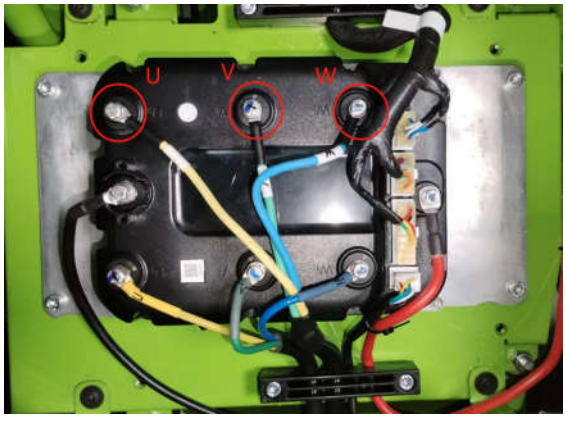
M15 Hardware overcurrent

Tool： Multimeter、Computer、PCAN、Debugging wire

Check：

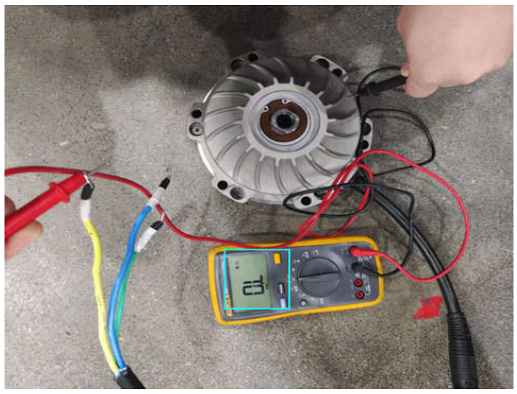
1.Display show M15 fault code.

2.Check whether the phase wire of the corresponding motor is damaged and whether the mounting screws are tight.



3.Check the status of the Mosfet of the controller.

4.Check the insulation resistance value of the motor phase wire and motor shell.



5.Restart the vehicle.

M19 Operating sequence error

Tool： Multimeter、Computer、PCAN、Debugging wire

Check：

1.Display show M19 fault code.

2.Check whether the cutter switch is pulled up.

3.Check whether the seat switch status changes normally.

4.Check if it's in the reverse mowing mode when doing reverse mowing.

5.Check the status of grass collection switch.

M26 CAN timeout error - drive

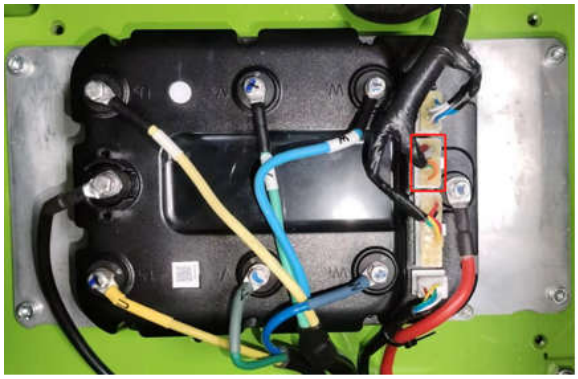
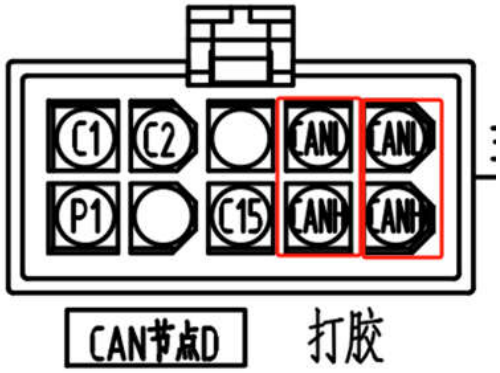
Tool： Multimeter、Computer、PCAN、Debugging wire



Check：

1.Display show M26 fault code.

2.Check the pin status of the CAN connector of the blade controller whether the connector is connected properly.

3.Check whether CANL and CANH of the blade controller are short circuited or open circuited.

4.Restart the vehicle.

5.If the fault is not eliminated, please replace the blade controller.

M31 Blade switch verification error

Tool： Multimeter

Check：

1.Display show M31 fault code.

2.Check the pin status of the PTO switch connector , whether the connector is connected properly.

3.Check whether there is a short circuit or open circuit in the PTO switch wiring.

4.Check whether water has entered the PTO switch and whether the status of the switch changes normally.

5.Replace the seat switch.

6.Replace the controller.

M32 Software certification error

Check：

1.Display show M32 fault code

2.Change the controller after restart the power several times.

M33 Grass collection switch verification error

Tool： Multimeter

Check：

1.Display show M33 fault code.

2.Check the connector pin status of grass collection switch, whether the connector is connected properly.

3.Check whether there is a short circuit or open circuit in the grass collection switch wiring.

4.Check whether water has entered the PTO switch and whether the status of the switch changes normally.

5.Replace the grass collection switch.

6.Replace the blade controller.

PMU2 Overtemperature-Level1

Check：

1.Display show PMU2 fault code.

2.At this time, the PMU is in a high heat state, please reduce the load.

PMU35 Overtemperature-Level2

Check：

1.Display show PMU35 fault code.

2.Power off.

3.Waiting 30 min.

4.Restart the vehicle.

PMU36 Undervoltage

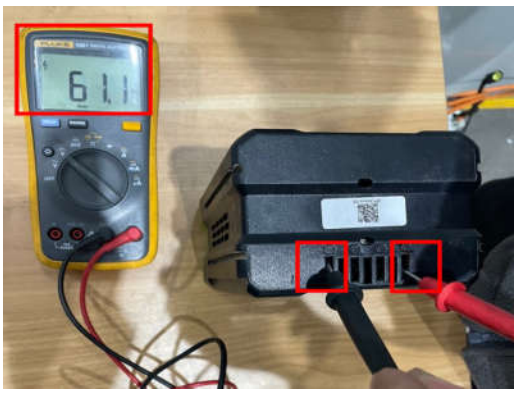
Tool： Multimeter、Computer、PCAN、Debugging wire



Check：

1.Display show PMU36 fault code.

2.If the battery pack voltage is 80V and the operating voltage ranges from 56V to 80V, use a multimeter to measure the battery pack voltage lower than 56V and report an undervoltage fault. If the operating voltage of the 60V platform is 42V to 60V, use a multimeter to measure if the battery pack voltage is lower than 42V.



3.Replace the fully charged battery pack.

4.Charge the vehicle.

PMU37 Overvoltage

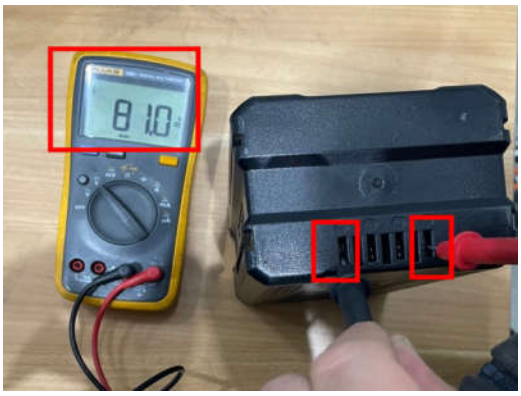
Tool： Multimeter、Computer、PCAN、Debugging wire



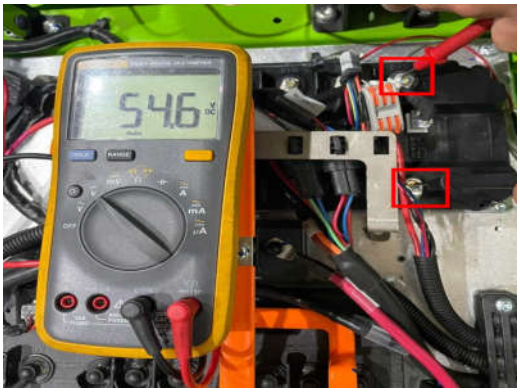
Check：

1.Display show PMU37 fault code.

2.Use a multimeter to measure the voltage of the battery pack and use the voltage pack of the accurate voltage platform.



3.Use a multimeter to check whether the input port voltage of the PMU is normal. If the voltage is too high, confirm that the battery pack voltage platform is used incorrectly. If the voltage is normal and the overvoltage fault is still reported, confirm that the detection circuit of the microcontroller inside the PMU is damaged and the PMU hardware needs to be replaced.



PMU38 Power supply output failure

Tool： Multimeter、Computer、PCAN、Debugging wire

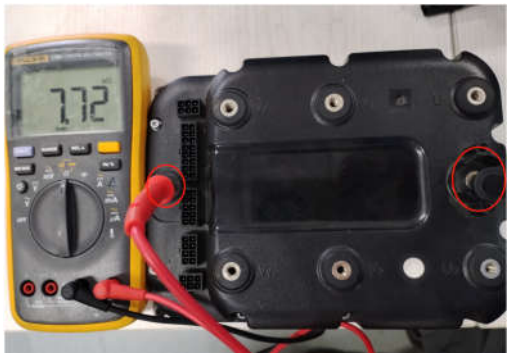


Check：

1.Display show PMU38 fault code.

2.Remove the load from the output end of the PMU and power it on again. If no fault is reported, it indicates that the back-end load is faulty. If a fault is reported, it indicates that the PMU hardware is faulty.

3.Remove the power of the controller, and then check whether there is a short circuit in the positive and negative poles of the controller. If there is a short circuit, it is necessary to replace the left walking controller.



4.Check whether there is short circuit in the positive and negative terminals of the charging port. If there is short circuit, replace the charging harness and charging base.

PMU41 No battery pack available

Tool： Multimeter、Computer、PCAN、Debugging wire

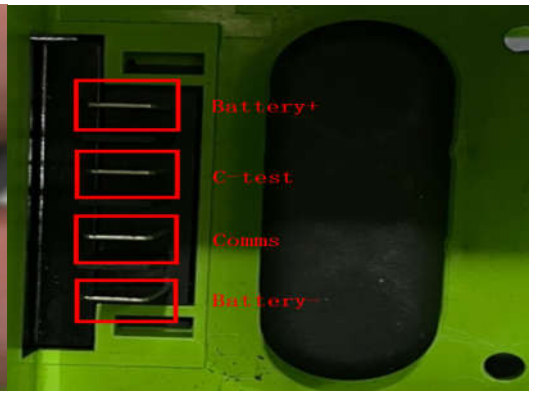
Check：

1.Display show PMU41 fault code.

2.Restart the device and check whether the fault can be eliminated.

3.Replace the battery pack with a new one. Check whether the battery pack can be powered on. If it can be powered on, the battery pack needs to be replaced and maintained.

4.Check whether the communication cable between the battery pack and the PMU is normal. If the communication cable is normal, the internal communication of the PMU is abnormal.



PMU46 Power circuit error

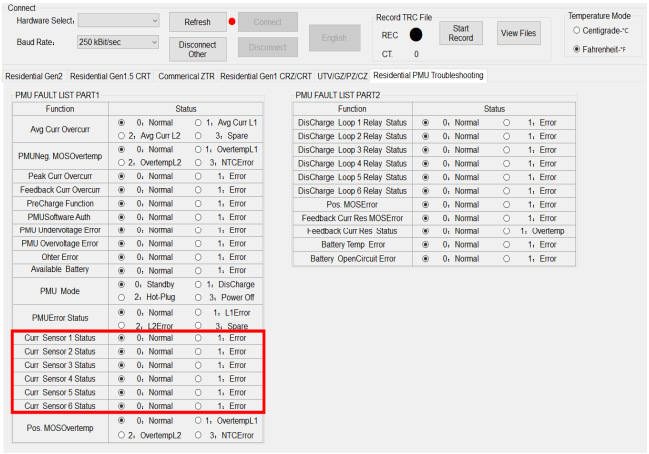
Tool： Multimeter、Computer、PCAN、Debugging wire



Check：

1.Display show PMU46 fault code.

2.Access the computer to use software to view the details and determine which way to report MOS failure.



3.Replace the cable in the faulty channel with that in the non-faulty channel, and then power on the cable to check whether the fault is rectified.

4.Replace the PMU.

PMU47 Pre-charge error

Tool： Multimeter、Computer、PCAN、Debugging wire

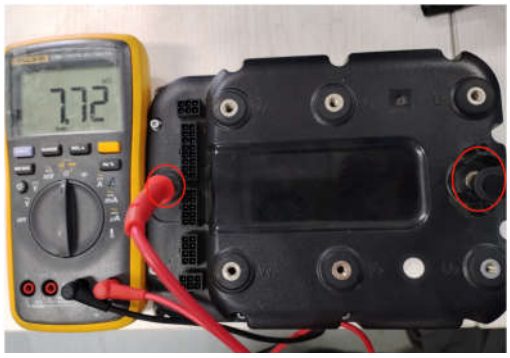


Check：

1.Display show PMU47 fault code.

2.First, remove the output load of the PMU and power it on again. If no fault is reported, it indicates that the fault point is the back-end load. If a fault is reported, it indicates that the hardware of the PMU is faulty.

3.Remove the power of the controller, and then check whether there is a short circuit in the positive and negative poles of the controller. If there is a short circuit, it is necessary to replace the left walking controller.



4.Check whether there is a short circuit in the positive and negative terminals of the charging port. If there is a short circuit, replace the charging harness and charging base.

5.The battery pack is faulty. The pre-charge failure is caused by the poor load capacity of the battery pack. Replace the battery pack.

8.If the PMU hardware fails to be precharged, replace the PMU hardware.

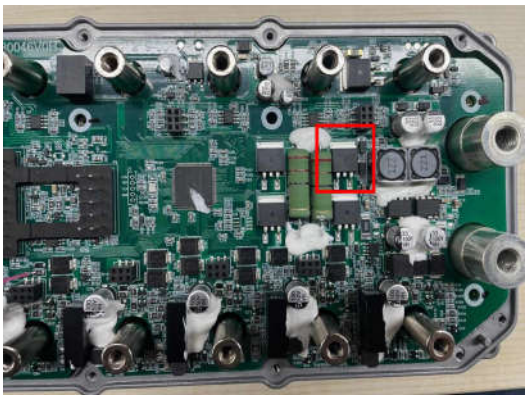
PMU48 Pre-charge hardware error

Tool： Multimeter、Computer、PCAN、Debugging wire

Check：

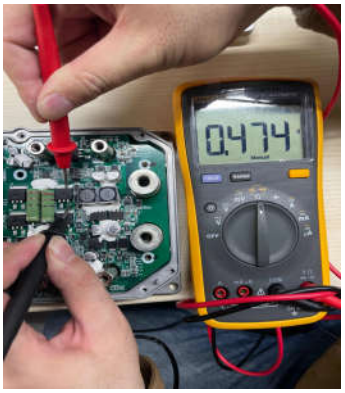
1.Display show PMU48 fault code.

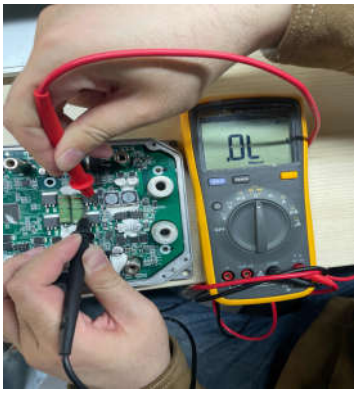
2.Open the PMU panel and find the pre-charged MOS from the top panel.

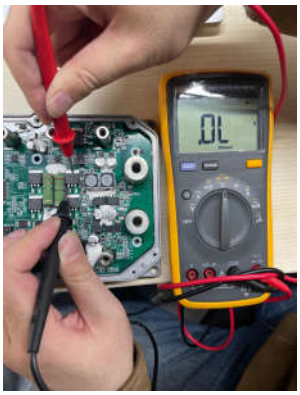


3.Use the diode gear of the multimeter. Use a stylus to measure the three pins of the iode to see the voltage

value.







4.Use the multimeter diode gear to measure the three pins. If any two pins have a pressure drop of 0, it is determined that the MOS is broken down and the hardware needs to be replaced.

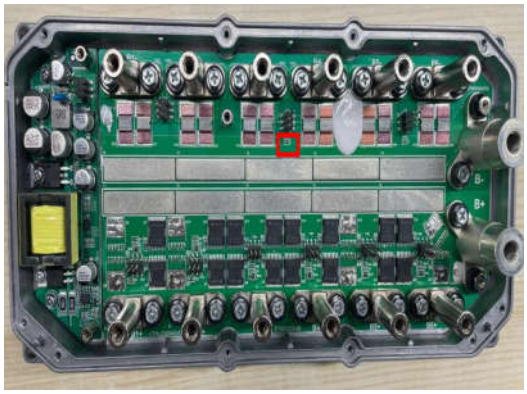
PMU49 Negative MOSFET temperature sensor error

Tool： Multimeter、Computer、PCAN、Debugging wire

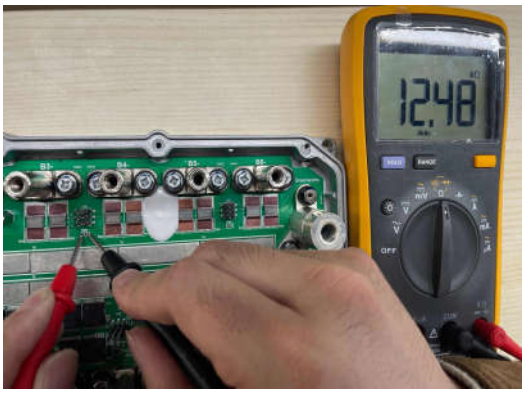
Check：

1.Display show PMU49 fault code.

2.Open the PMU panel and find the temperature sensing resistor from the lower panel.



3.Use the universal resistance gear, measure the resistance value of the resistance with the pen, and then compare it with the message value.



4.If the resistance value is inconsistent and the temperature sensing resistance is abnormal, replace the temperature sensing resistance.

℃	℉	Ω			Resistance Tolerance(%)		Temprature Tolerance	
		MIN(K)	TYP(K)	MAX(K)				
-40	-40	186.294	178.764	171.234	4.21%	-4.21%	0.8	-0.8
-30	-22	109.898	106.073	102.247	3.16%	-3.16%	0.7	-0.7
-20	-4	66.366	64.403	62.44	3.05%	-3.05%	0.63	-0.63
-10	14	41.466	40.442	39.418	2.53%	-2.53%	0.57	-0.57
0	32	26.795	26.256	25.716	2.05%	-2.05%	0.49	-0.49
10	50	17.826	17.544	17.261	1.61%	-1.61%	0.41	-0.41
20	68	12.145	12.002	11.858	1.20%	-1.20%	0.32	-0.32
25	77	10.1	10	9.9	1.00%	-1.00%	0.28	-0.28
30	86	8.467	8.367	8.268	1.19%	-1.19%	0.34	-0.34
40	104	6.016	5.924	5.832	1.55%	-1.55%	0.46	-0.46
50	122	4.33	4.249	4.169	1.89%	-1.89%	0.58	-0.58
60	140	3.152	3.084	3.016	2.21%	-2.21%	0.7	-0.7
70	158	2.319	2.262	2.206	2.51%	-2.51%	0.82	-0.82
80	176	1.725	1.678	1.631	2.79%	-2.79%	0.95	-0.95
90	194	1.297	1.258	1.22	3.06%	-3.06%	1.09	-1.09
100	212	0.987	0.955	0.923	3.32%	-3.32%	1.23	-1.23
110	230	0.76	0.734	0.707	3.56%	-3.56%	1.38	-1.38
120	248	0.607	0.585	0.563	3.76%	-3.76%	1.53	-1.53

PMU52 Current sensor error

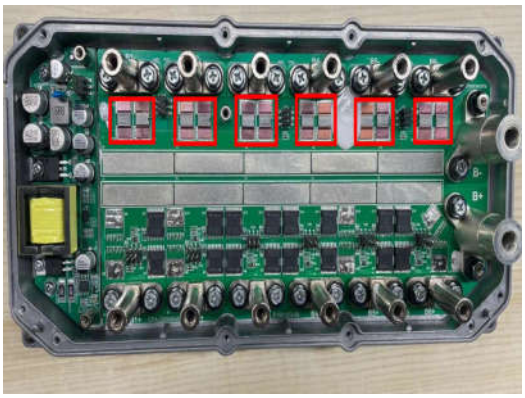
Tool： Multimeter、Computer、PCAN、Debugging wire



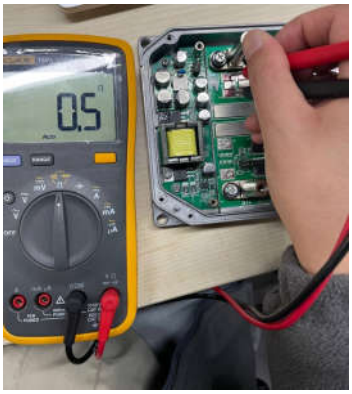
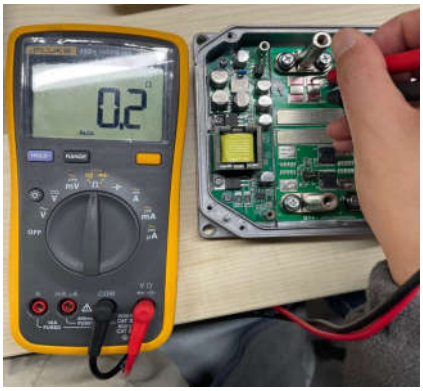
Check：

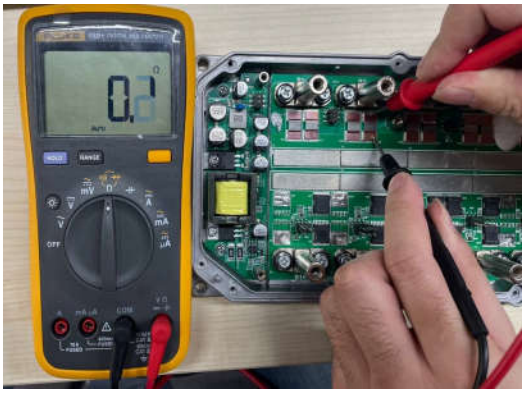
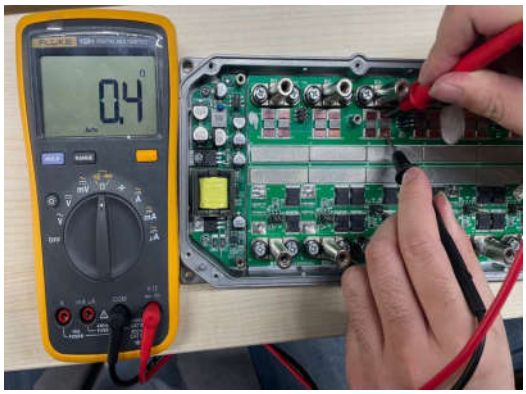
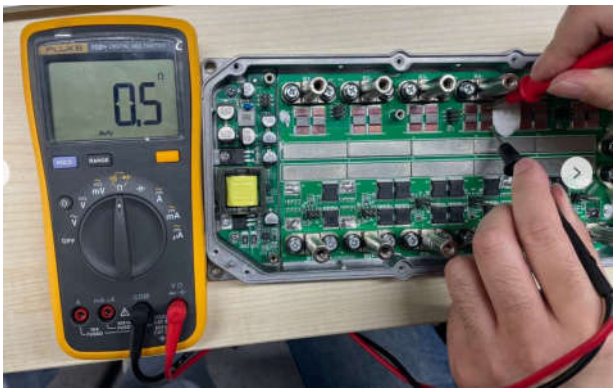
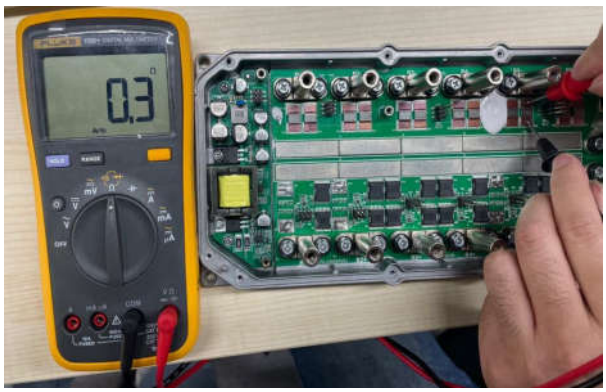
1.Display show PMU52 fault code.

2.Open the PMU panel and find the 0 Ohm resistor from the lower panel.



3.Use a multimeter resistance gear to test the resistance value with a multimeter.


4.If the resistance value of 6 resistors is measured, as long as the resistance value of 1 is infinite, then the resistance of this road needs to be replaced.

PMU57 KSI Pre-MOS error

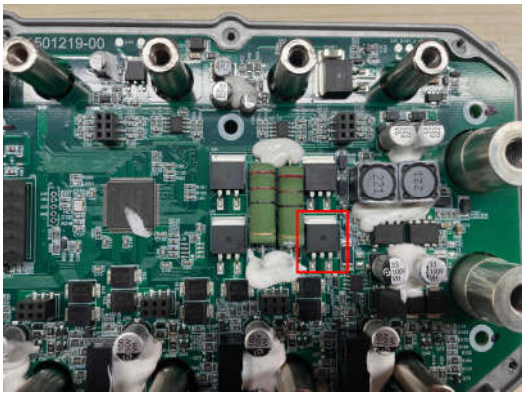
Tool: Multimeter、Computer、PCAN、Debugging wire



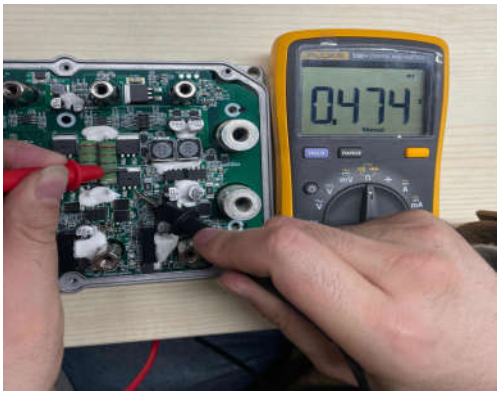
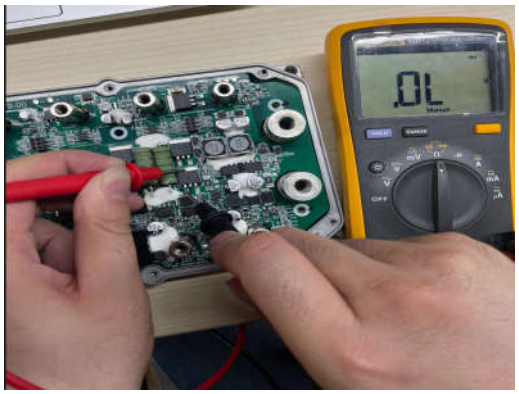
Check：

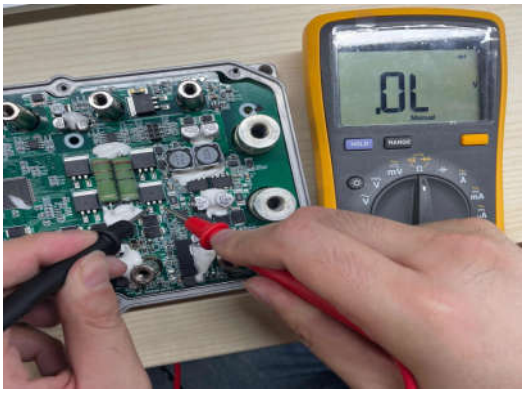
1.Display show PMU57 fault code.

2.Open the PMU panel and find the KSI front MOS from the top panel.



3.Use the diode gear of the multimeter. Use a stylus to measure the three pins of the iode to see the voltage value.



4.Use the multimeter diode gear to measure the three pins. If any two pins have a pressure drop of 0, it is determined that the MOS is broken down and the hardware needs to be replaced.

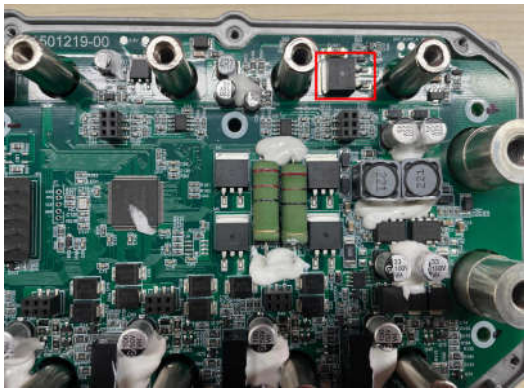
PMU59 KSI MOS error

Tool： Multimeter、Computer、PCAN、Debugging wire

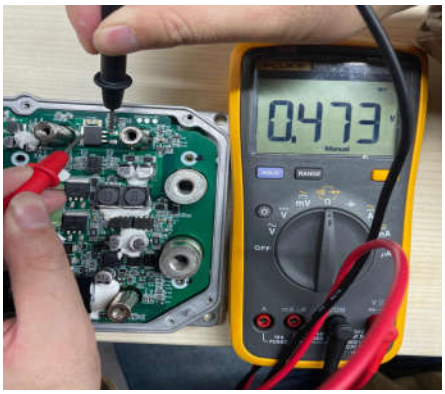

Check：

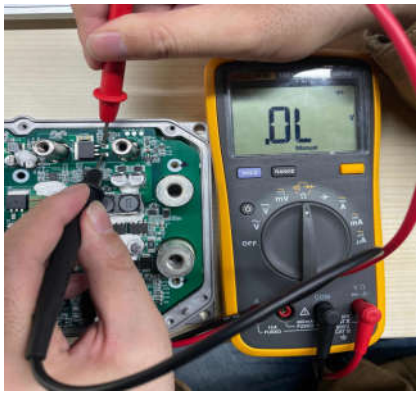
1.Display show PMU59 fault code.

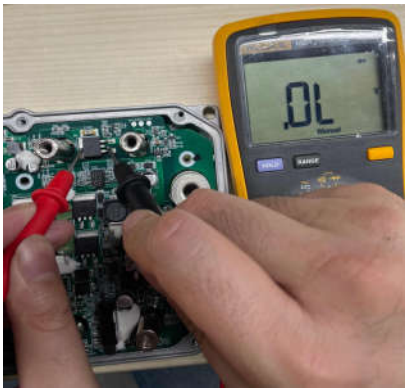
2.Open the PMU panel and find the KSI MOS from the top panel.



3.Use the diode gear of the multimeter. Use a stylus to measure the three pins of the iode to see the voltage value.







4.Use the multimeter diode gear to measure the three pins. If any two pins have a pressure drop of 0, it is determined that the MOS is broken down and the hardware needs to be replaced.

PMU61 Battery pack 1 does not match

Tool： Multimeter

Check：

1.Display show PMU61 fault code.

2.Check the battery pack voltage level.

3.Replace the battery pack.

PMU62 Battery pack 2 does not match

Tool： Multimeter

Check：

1.Display show PMU62 fault code.

2.Check the battery pack voltage level.

3.Replace the battery pack.

PMU63 Battery pack 3 does not match

Tool： Multimeter

Check：

1.Display show PMU63 fault code.

2.Check the battery pack voltage level.

3.Replace the battery pack.

PMU64 Battery pack 4 does not match

Tool： Multimeter

Check：

1.Display show PMU64 fault code.

2.Check the battery pack voltage level.

3.Replace the battery pack.

PMU65 Battery pack 5 does not match

Tool： Multimeter

Check：

1.Display show PMU65 fault code.

2.Check the battery pack voltage level.

3.Replace the battery pack.

PMU66 Battery pack 6 does not match

Tool： Multimeter

Check：

1.Display show PMU66 fault code.

2.Check the battery pack voltage level.

3.Replace the battery pack.

PMU67 Abnormal charging status

Tool： Multimeter、Computer、PCAN、Debugging wire

Check：

1.Display show PMU67 fault code.

2.Check whether the charger input plug is inserted properly.

3.Check whether the switch status in the charging socket is abnormal.

4.Check whether the wiring harness between the charging socket switch and the PMU is open or short.