
CRZ42 G1 Trouble Shooting And FAQ List

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Tools: Computer、CAN DEBUG TOOL (ERP: R0203845-00) 、16-Pin adapter (ERP: R0203075-00) 、
Blade Controller Flash tool (ERP:R0203362-00) 、Jack、Multimeter.



CAN DEBUG TOOL (ERP: R0203845-00) | 16-Pin adapter (ERP: R0203075-00) | Blade Controller Flash tool (ERP:R0203362-00)



Jack

Multimeter

PMU10 - PMU loop fault

At least one channel in the battery compartment is unable to discharge, but the performance will not decrease, vehicle still can be worked.

If you feel a decrease in mowing performance with this fault code, the battery compartment should be replaced.

PMU11 - PMU minor fault

There have occurred a over-current(Level 1) or over-temperature(Level 1) fault. The vehicle's performance will be limited with this code, but this fault can be restored, no need to pay attention.

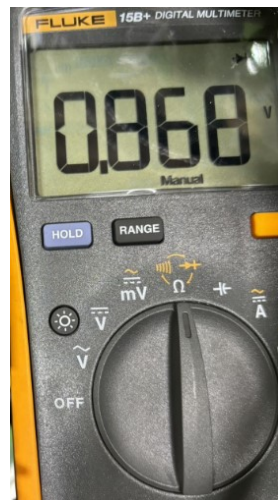
PMU12 - PMU major fault

Check: Use "ToolsForCAN" to identify the detail fault -

1. "PreCharge Function Error" of PMU12

PMU FAULT LIST PART1			
Function	Status		
Avg Curr Overcurr	<input checked="" type="radio"/> 0: Normal	<input type="radio"/> 1: Avg Curr L1	
	<input type="radio"/> 2: Avg Curr L2	<input type="radio"/> 3: Spare	
PMUNeg. MOSOvertemp	<input checked="" type="radio"/> 0: Normal	<input type="radio"/> 1: OvertempL1	
	<input type="radio"/> 2: OvertempL2	<input type="radio"/> 3: NTCErr	
Peak Curr Overcurr	<input checked="" type="radio"/> 0: Normal	<input type="radio"/> 1: Error	
Feedback Curr Overcurr	<input checked="" type="radio"/> 0: Normal	<input type="radio"/> 1: Error	
PreCharge Function	<input type="radio"/> 0: Normal	<input checked="" type="radio"/> 1: Error	
PMUSoftware Auth	<input checked="" type="radio"/> 0: Normal	<input type="radio"/> 1: Error	
PMU Undervoltage Error	<input checked="" type="radio"/> 0: Normal	<input type="radio"/> 1: Error	
PMU Overvoltage Error	<input checked="" type="radio"/> 0: Normal	<input type="radio"/> 1: Error	

- ① Adjust the dial position of a multimeter to the diode position to measure the diode value of the left blade controller's B+ and B- as shown in the picture below(Red lead to black wire, black lead to red wire).
 - a. If the value is approximately equal to $0.7 \pm 0.2V$, you should replace a new battery box.
 - b. Otherwise follow the steps.



Correct value should be approximately equal to $0.7 \pm 0.2V$

- ② Disconnect the left blade controller's B+ and B- wires and use a multimeter to measure the diode value as shown in the picture below (Red lead to black wire, black lead to red wire).
- If the value is approximately equal to $0.7 \pm 0.2V$, you should replace left blade controller.
 - Otherwise follow the steps.

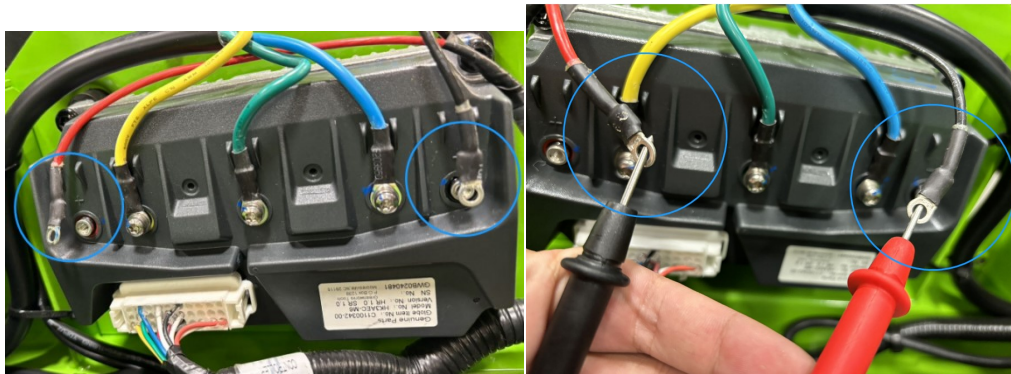




Correct value should be approximately equal to $0.7 \pm 0.2V$

③ Disconnect the right blade controller's B+ and B- wires and use a multimeter to measure the diode value of the left blade controller's power wires as the picture showed below (Red lead to black wire, black lead to red wire).

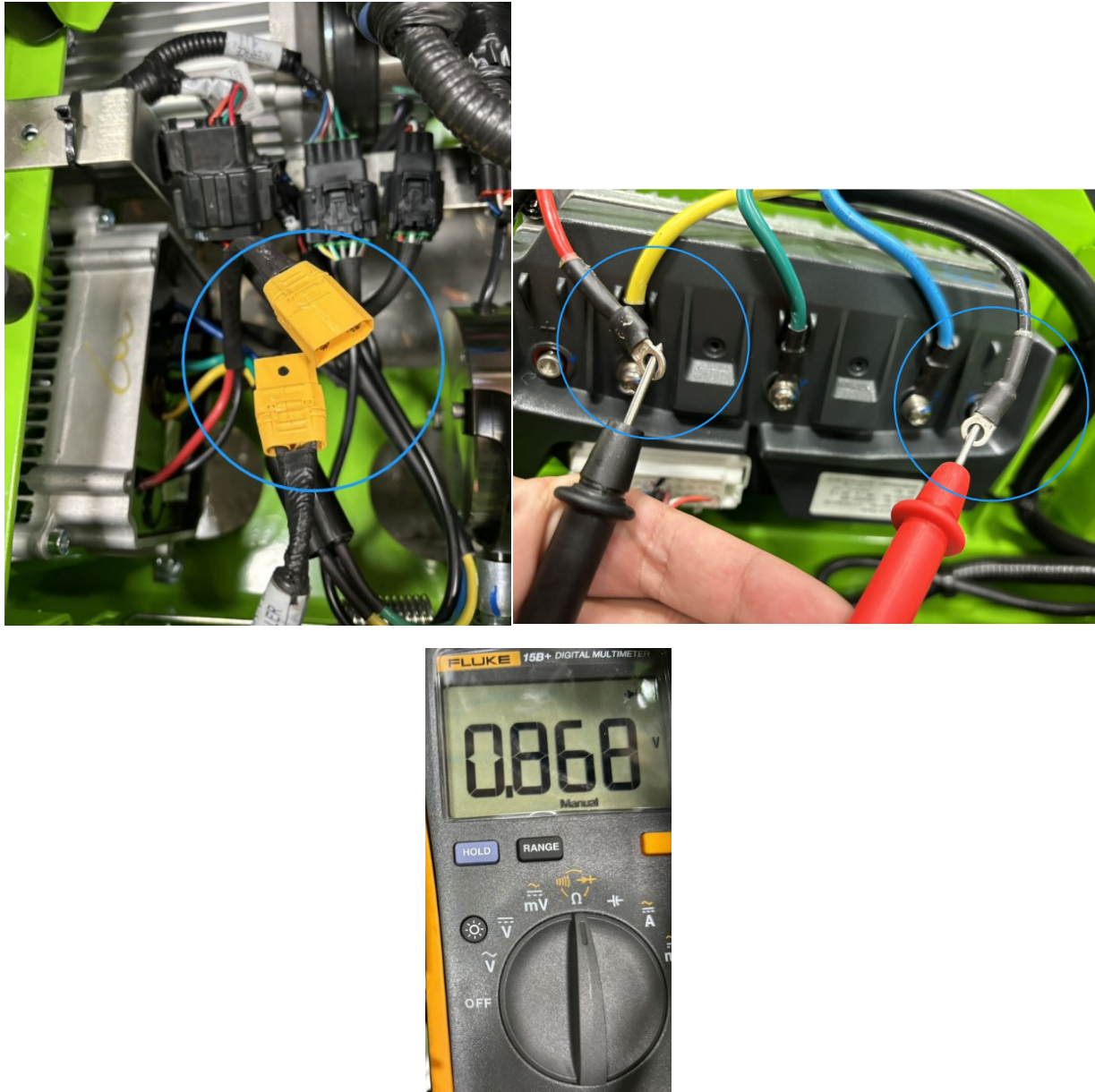
- a. If the value is approximately equal to $0.7 \pm 0.2V$, you should replace right blade controller.
- b. Otherwise follow the steps.



Correct value should be approximately equal to $0.7 \pm 0.2V$

④ Disconnect the left traction controller's power connector and use a multimeter to measure the diode value of the left blade controller's power wires as the pictured below (Red lead to black wire, black lead to red wire).

- a. If the value is approximately equal to $0.7 \pm 0.2V$, you should replace left traction controller.
- b. Otherwise follow the steps.



Correct value should be approximately equal to $0.7 \pm 0.2V$

- ⑤ Replace the right traction controller.
- 2. “Feedback Curr Res MOS Error” of PMU12

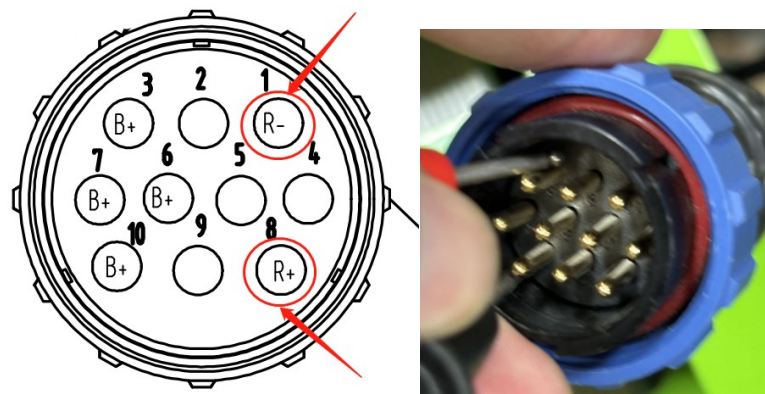
PMU FAULT LIST PART2			
Function	Status		
DisCharge Loop 1Relay Status	● 0: Normal	○ 1: Error	
DisCharge Loop 2Relay Status	● 0: Normal	○ 1: Error	
DisCharge Loop 3Relay Status	● 0: Normal	○ 1: Error	
DisCharge Loop 4Relay Status	● 0: Normal	○ 1: Error	
DisCharge Loop 5Relay Status	● 0: Normal	○ 1: Error	
DisCharge Loop 6Relay Status	● 0: Normal	○ 1: Error	
Pos. MOSError	● 0: Normal	○ 1: Error	
Feedback Curr Res MOSError	○ 0: Normal	● 1: Error	
Feedback Curr Res Status	● 0: Normal	○ 1: Overtemp	
Battery Temp Error	● 0: Normal	○ 1: Error	
Battery OpenCircuit Error	● 0: Normal	○ 1: Error	

① Disconnect the power harness of the battery box, and adjust the dial position of multimeter to ohms as shown in the picture below.



② Use multimeter to measure the resistance value of PIN1 and PIN8, the correct value should be around 1 Ohm.

- a. If the value is around 1 Ohm, replace the battery compartment.
- b. Otherwise follow the steps.



③ Use a multimeter to measure the resistance value of the resistor, the correct value should be around 1 Ohm.

- a. If the value is correct, replace a new power harness.
- b. Otherwise replace a new resistor.



3. Other errors of PMU12
Replace the battery compartment.

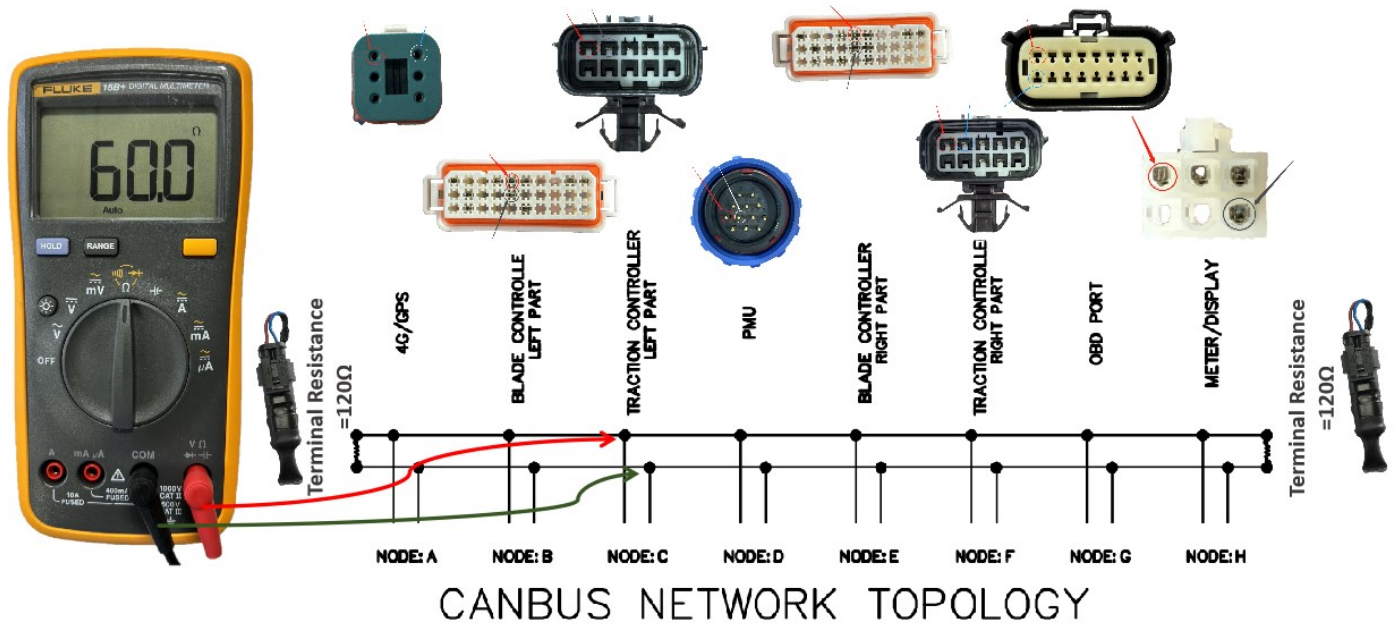
PMU13 - PMU no available battery

1. Make sure that the inserted batteries are correct, not mixed with different voltage platform.
2. Replace the battery compartment.

V11 - Abnormal CAN communication at left traction controller

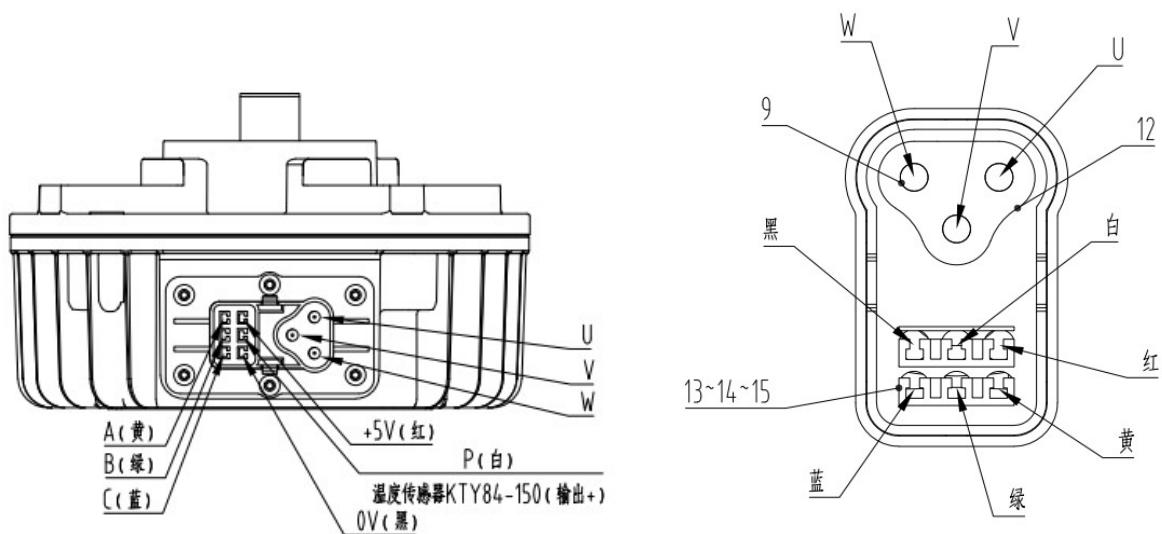
Use multimeter to measure the resistance from left traction controller's connector.

- ① If the resistance is around 60 Ohms:
 - a. Check if the pins of connector of controller side are bent or retracted, if can be fixed, try to fix them.
 - b. Replace the left traction controller.
- ② Otherwise:
 - a. Check if the pins of the connector are bent or retracted, if can be fixed, try to fix them.
 - b. Replace the control harness.



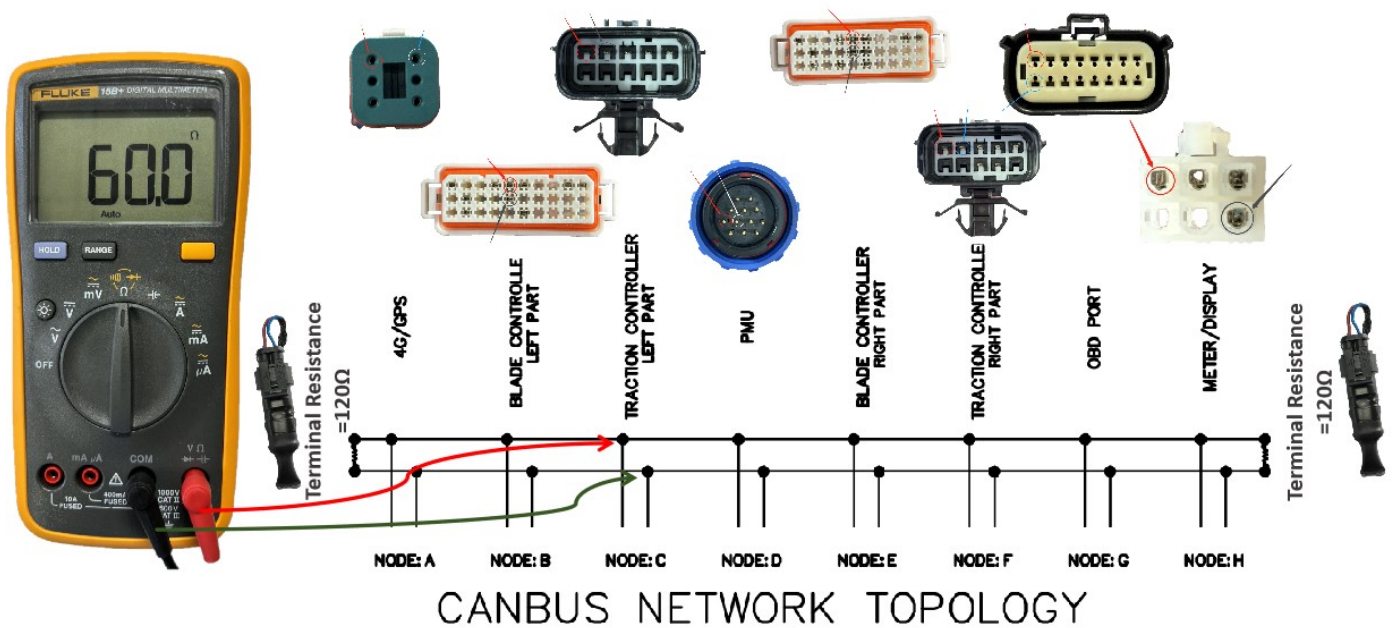
V12 - Abnormal CAN communication at left blade controller

Disconnect the connector from left blade motor side, check if this error code has disappeared.



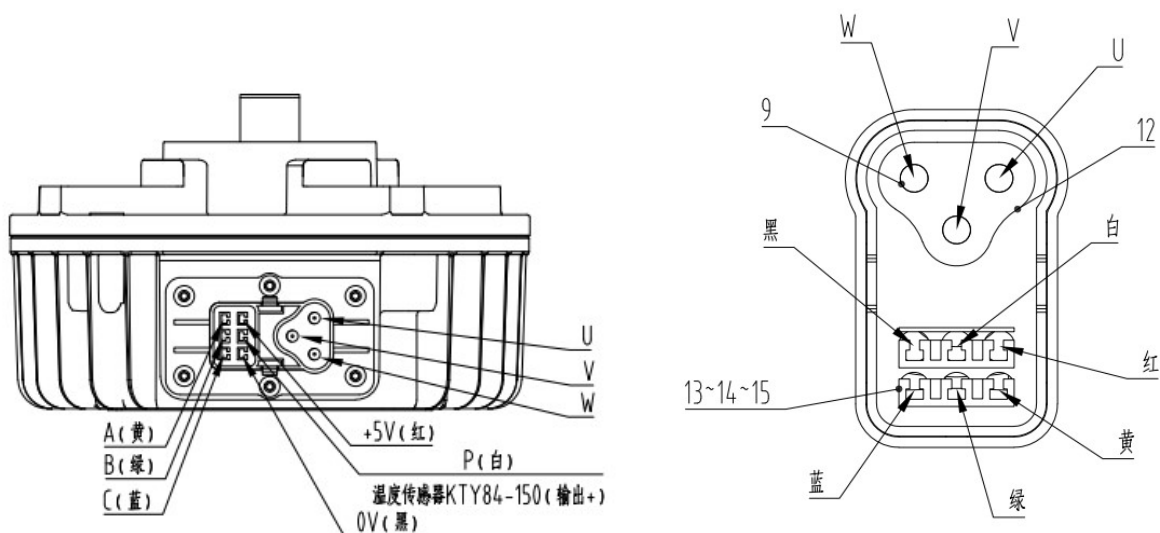
- a. If the error code has disappeared, replace the left blade motor.
- b. Otherwise: Use multimeter to measure the resistance from left blade controller's connector.
 - ① If the resistance is around 60 Ohms:
 - a. Check if the pins of connector of controller side are bent or retracted, if can be fixed, try to fix them.
 - b. Replace the left blade controller.
 - ② Otherwise:

- Check if the pins of the connector are bent or retracted, if can be fixed, try to fix them.
- Replace the control harness.



V13 - Abnormal CAN communication at right blade controller

Disconnect the connector from right blade motor side, check if this error code has disappeared.



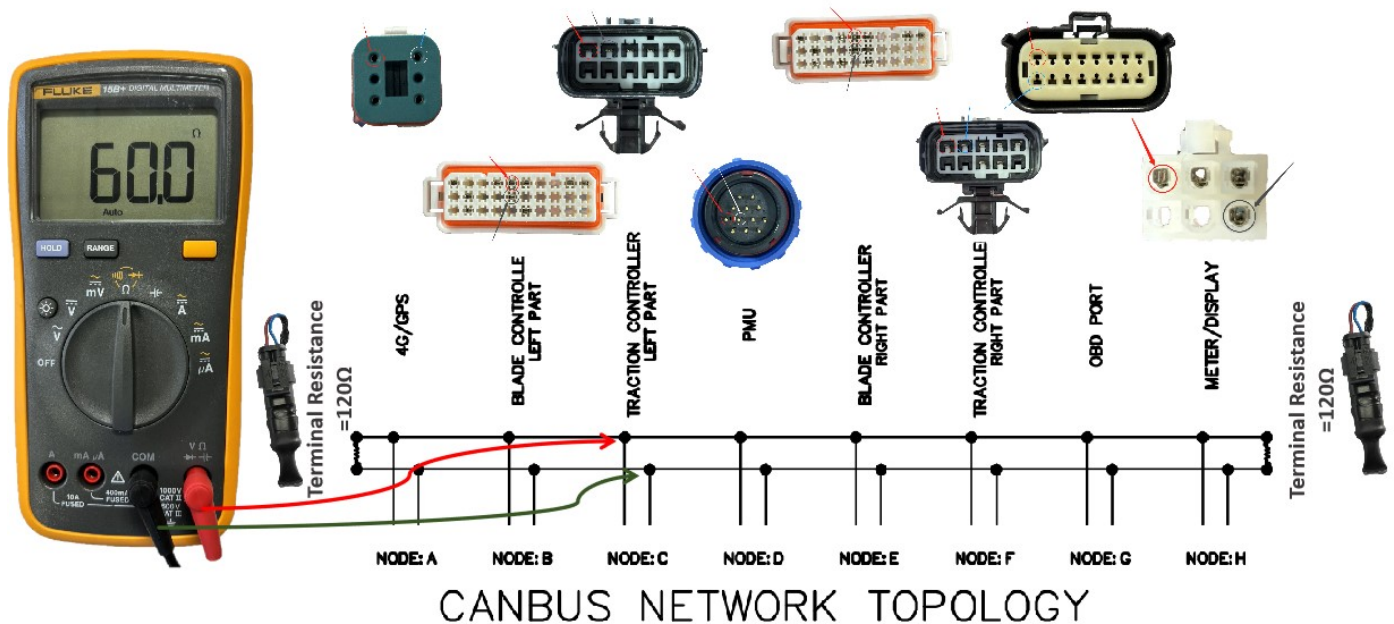
- If the error code has disappeared, replace the right blade motor.
- Otherwise: Use multimeter to measure the resistance from right blade controller's connector.
 - If the resistance is around 60 Ohms:
- Check if the pins of connector of controller side are bent or retracted, if can be fixed, try to fix them.

d. Replace the right blade controller.

② Otherwise:

c. Check if the pins of the connector are bent or retracted, if can be fixed, try to fix them.

d. Replace the control harness.



V14 - Abnormal CAN communication at right traction controller

Use multimeter to measure the resistance from right traction controller's connector.

① If the resistance is around 60 Ohms:

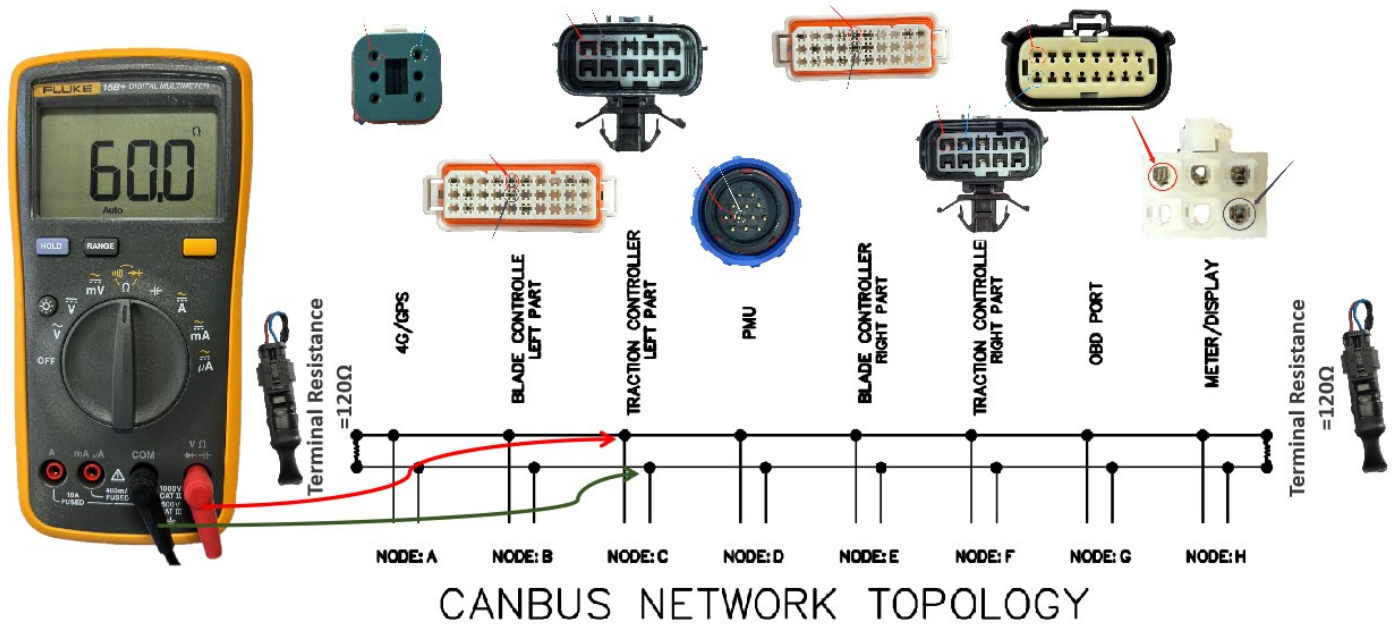
a. Check if the pins of connector of controller side are bent or retracted, if can be fixed, try to fix them.

b. Replace the right traction controller.

② Otherwise:

a. Check if the pins of the connector are bent or retracted, if can be fixed, try to fix them.

b. Replace the control harness.



V15 - Vehicle power-on self-test error

Check: Use "ToolsForCAN" to identify the status of switches and potentiometer -





Model Select: CRZ426

Recommended Value Of Throttles	
Left Side	Right Side
Foremost V: 0.3~0.4	Foremost V: 4.4~4.5
Neutral V: 2.35~2.45	Neutral V: 2.35~2.45
Rearmost V: 3.15~3.25	Rearmost V: 1.55~1.65

RZ-Traction System

Throt Value V: 2.40	Throt Value V: 2.38
Mtr Temp: 55.4	Mtr Temp: 60.8
L Ctrl Temp: 64.4	R Ctrl Temp: 64.4
HW Ver: H1.3	HW Ver: H1.3
SW Ver: S2.1	SW Ver: S2.1
Serial Number: GWB0200517	
Model: CRZ426	
Platform Judge: 60V	





The status should meet the table below.

Switch & Controllers		State
Seat Switch		ON
Left Parking Switch		ON
Right Parking Switch		ON
PTO Switch		OFF
Left Potentionmeter	2. 40	2.3~2.5V
Right Potentionmeter	2. 40	2.3~2.5V
Left Traction Controller		No Fault
Right Traction Controller		No Fault
PMU		No Fault

V16 - Abnormal operation sequence

Check: Use “ToolsForCAN” to identify the status of switches and potentiometer -

Make sure there have no operations before sitting on the seat. The status should meet the table below before operating.

Switch & Controllers		State
Seat Switch		ON
Left Parking Switch		ON
Right Parking Switch		ON
PTO Switch		OFF
Left Potentionmeter	2. 40	2.3~2.5V
Right Potentionmeter	2. 40	2.3~2.5V
Left Traction Controller		No Fault
Right Traction Controller		No Fault
PMU		No Fault

V17 - Left potentiometer fault

Check: Use “ToolsForCAN” to read the value of left potentiometer -

- ① If the value is larger than 4.6 or smaller than 0.2, replace the left potentiometer.
- ② Replace the left traction controller.
- ③ Replace the control harness.

V18 - Right potentiometer fault

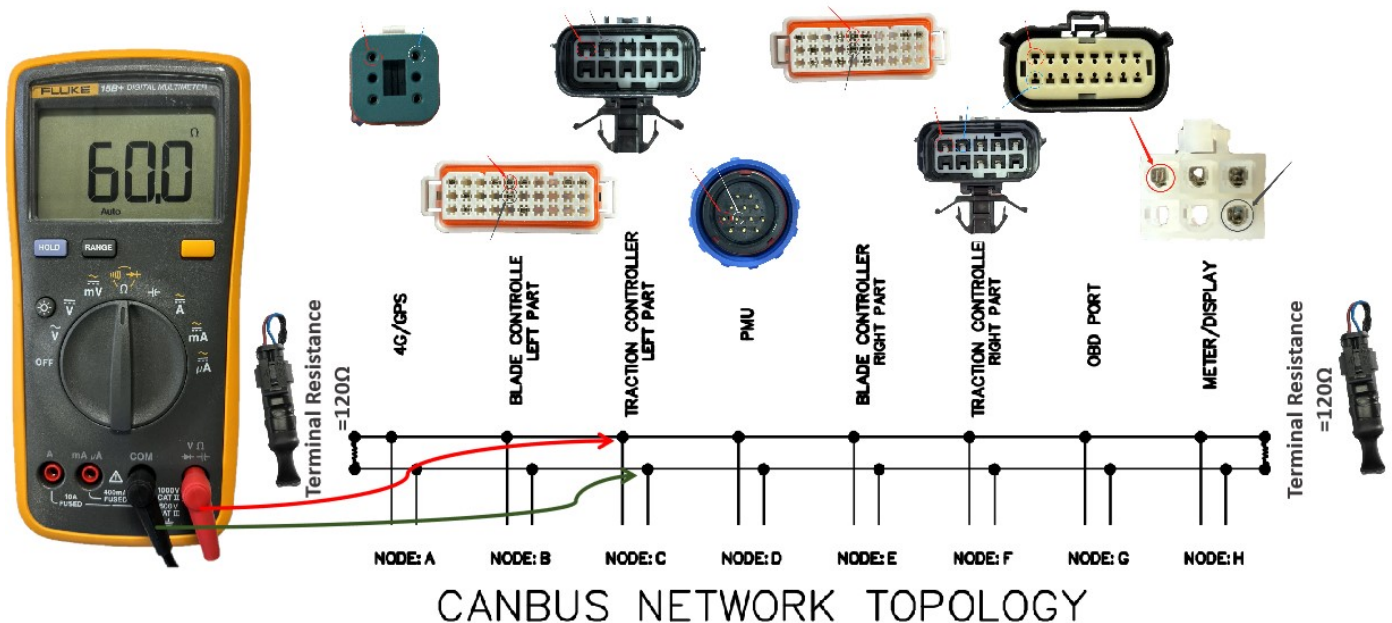
Check: Use “ToolsForCAN” to read the value of right potentiometer -

- ① If the value is larger than 4.6 or smaller than 0.2, replace the right potentiometer.
- ② Replace the right traction controller.
- ③ Replace the control harness.

V21 - PMU CAN communication abnormal

Use multimeter to measure the resistance from PMU's connector.

- ① If the resistance is around 60 Ohms:
 - a. Check if the pins of connector of controller side are bent or retracted, if can be fixed, try to fix them.
 - b. Replace the battery compartment.
- ② Otherwise:
 - a. Check if the pins of the connector are bent or retracted, if can be fixed, try to fix them.
 - b. Replace the control harness.



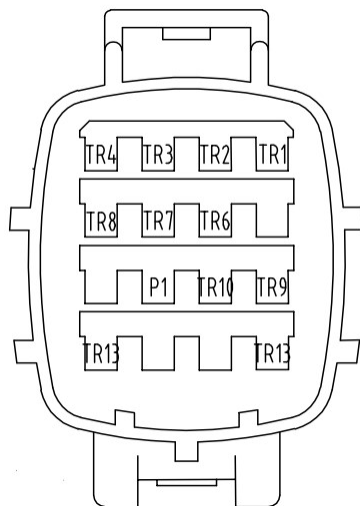
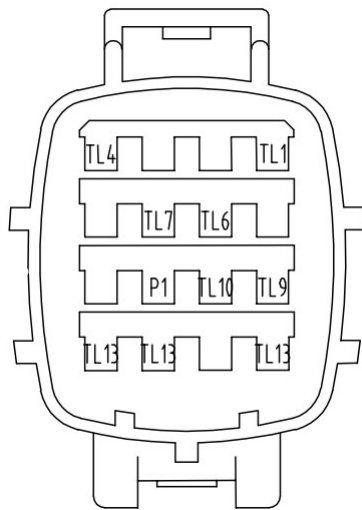
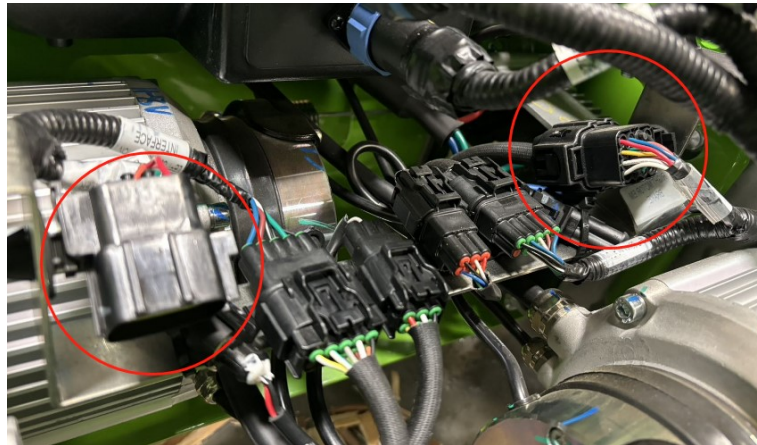
V27 - Seat switch abnormal

Check: Check the connector and wires of the seat switch.

- ① If connector or the wires of connector were broken or bend, replace the control harness.
- ② Replace the seat switch.
- ③ Replace the right traction controller.

V31 - Master-slave distinguishing fault

Check: Check the connectors' wires and pins of left and right traction controller.



Signal connector of left traction controller

Check all the pins inside the connector are good

Signal connector of right traction controller

- ① If connector or harness of control harness were broken or bend, replace the control harness.
- ② If connector or harness of controller were broken or bend, replace the controller.
- ③ Otherwise:
 - a. Replace the left traction controller.
 - b. Replace the right traction controller.

TR11/TL11 - Over-voltage fault

- ① Make sure the controller on the correct platform is used.
- ② Replace the right/left traction controller.

TR12/TL12 - Under-voltage fault

- ① Charge the batteries.
- ② Make sure the controller on the correct platform is used.
- ③ Replace the right/left traction controller.

TR13/TL13 - MOS over-current fault

Swap the left and right traction controllers.

1. TR13

- a. If still have TR13 fault code, replace the right traction motor.
- b. If fault code change to TL13, you should replace the traction controller that the fault followed.

2. TL13

- a. If still have TL13 fault code, replace the left traction motor.
- b. If fault code change to TR13, you should replace the traction controller that the fault followed.

TR14/TL14 - Motor stalled fault

1. TR14

① Turn off the power, use a jack to lift the vehicle's rear wheels, disengage the manual parking brake, try rotating the rear wheel of right side.

- a. If the wheel can't be rotated, replace the right traction motor.
- b. Otherwise follow the steps below.



② Swap the left and right traction controllers.

- a. If still have TR14 fault code, replace the right traction motor.
- b. If fault code change to TL14, you should replace the traction controller that the fault followed.

2. TL14

① Turn off the power, use a jack to lift the vehicle's rear wheels, disengage the manual parking brake, try rotating the rear wheel of left side.

- a. If the wheel can't be rotated, replace the left traction motor.
- b. Otherwise follow the steps below.



② Swap the left and right traction controllers.

- a. If still have TL14 fault code, replace the left traction motor.
- b. If fault code change to TR14, you should replace the traction controller that the fault followed.

TR15/TL15 - Hall sensor fault

Swap the left and right traction controllers.

1. TR15

- a. If still have TR15 fault code, replace the right traction motor.
- b. If fault code change to TL15, you should replace the traction controller that the fault followed.

2. TL15

- a. If still have TL15 fault code, replace the left traction motor.
- b. If fault code change to TR15, you should replace the traction controller that the fault followed.

TR16/TL16 - Electromagnetic brake drive fault

1. CRZ428

Measure the resistance of the right/left electromagnetic brake.

① The value is within the range(40~200Ω).

Swap the left and right traction controllers.

a. If still have TR16/TL16 fault code, replace the controller harness.

b. If TR16/TL16 disappeared and get a TL16/TR16 fault code, replace the traction controller that the fault followed.

② The value is not within the range(40~200Ω).

Replace the right/left traction motor.

2. CRZ426

(1) Weather temperature above 41°F , measure the resistance of right/left electromagnetic brake.

① The value is within the range(40~200Ω).

Swap the left and right traction controllers.

a. If still have TR16/TL16 fault code, replace the control harness.

b. If TR16/TL16 disappeared and get a TL16/TR16 fault code, replace the traction controller that the fault followed.

② The value is not within the range(40~200Ω).

Replace the right/left traction motor.

(2) Weather temperature below 41°F , check if there is a resistor between the motor and control harness.

① If NOT, add a resistor between the motor and control harness on the right/left side.

② If HAVE, follow the step of "Weather temperature above 41°F ".

TR17/TL17 - Controller over-temperature fault

Stop the vehicle for a period of time to allow it to cool down, if the fault still have after restarting, replace the right/left traction controller.

TR18/TL18 - Motor over-temperature fault

1. Stop the vehicle for a period of time to allow it to cool down, if the fault still have after restarting, follow the steps below.

2. Swap the left and right traction controllers.

① TR18

a. If still have TR18 fault code, replace the right traction motor.

b. If fault code change to TL18, you should replace the traction controller that the fault followed.

② TL18

- a. If still have TL18 fault code, replace the left traction motor.
- b. If fault code change to TR18, you should replace the traction controller that the fault followed.

TR21/TL21 - Motor temperature sensor abnormal fault

Swap the left and right traction controllers.

1. TR21

- a. If still have TR21 fault code, replace the right traction motor.
- b. If fault code change to TL21, you should replace the traction controller that the fault followed.

2. TL21

- a. If still have TL21 fault code, replace the left traction motor.
- b. If fault code change to TR21, you should replace the traction controller that the fault followed.

TR22/TL22 - Controller power-on self-test abnormal

Swap the left and right traction controllers.

1. TR22

- a. If still have TR22 fault code, replace the right traction motor.
- b. If fault code change to TL22, you should replace the traction controller that the fault followed.

2. TL22

- a. If still have TL22 fault code, replace the left traction motor.
- b. If fault code change to TR22, you should replace the traction controller that the fault followed.

TR23/TL23 - Voltage platform selection fault

Replace the right/left traction controller.

TR24/TL24 - Controller 5V fault

Replace the right/left traction controller.

TR25/TL25 - Controller 15V fault

Replace the right/left traction controller.

TR32/TL32 - Controller temperature sensor abnormal fault

Replace the right/left traction controller.

MR11/ML11 - Over-voltage fault

- ① Make sure the controller on the correct platform is used.
- ② Flash the right firmware to the blade controller. 60V and 80V platform have different firmware.
- ③ Replace the right/left blade controller.

MR12/ML12 - Under-voltage fault

- ① Charge the batteries.
- ② Make sure the controller on the correct platform is used.
- ③ Flash the right firmware to the blade controller. 60V and 80V platform have different firmware.
- ④ Replace the right/left blade controller.

MR13/ML13 - Over-current fault

Swap the left and right blade controllers.

1. MR13
 - a. If still have MR13 fault code, replace the right blade motor.
 - b. If fault code change to ML13, you should replace the blade controller that the fault followed.
2. ML13
 - a. If still have ML13 fault code, replace the left blade motor.
 - b. If fault code change to MR13, you should replace the blade controller that the fault followed.

MR14/ML14 - Motor stalled fault

1. MR14
 - ① Turn off the power, try to rotate the right side blade.
 - a. If the blade can't be rotated, replace the right blade motor.
 - b. Otherwise follow the steps below.

② Swap the left and right blade controllers.

- a. If still have MR14 fault code, replace the right blade motor.
- b. If fault code change to ML14, you should replace the blade controller that the fault followed.

2. ML14

① Turn off the power, try to rotate the left side blade.

- a. If the blade can't be rotated, replace the left blade motor.
- b. Otherwise follow the steps below.

② Swap the left and right blade controllers.

- a. If still have ML14 fault code, replace the left blade motor.
- b. If fault code change to MR14, you should replace the blade controller that the fault followed.

MR15/ML15 – Hall sensor fault

Swap the left and right blade controllers.

1. MR15

- a. If still have MR15 fault code, replace the right blade motor.
- b. If still have MR15 fault code, replace the right blade motor's extend harness.
- c. If fault code change to ML15, you should replace the blade controller that the fault followed.

2. ML15

- a. If still have ML15 fault code, replace the left blade motor.
- b. If still have ML15 fault code, replace the left blade motor's extend harness.
- c. If fault code change to MR15, you should replace the blade controller that the fault followed.

MR16/ML16 – MOSFET fault

Replace the right/left blade controller.

MR17/ML17 – Motor open-phase fault

Swap the left and right blade controllers.

1. MR17

- a. If still have MR17 fault code, replace the right blade motor.
- b. If still have MR17 fault code, replace the right blade motor's extend harness.

c. If fault code change to ML17, you should replace the blade controller that the fault followed.

2. ML17

a. If still have ML17 fault code, replace the left blade motor.

b. If still have ML17 fault code, replace the left blade motor's extend harness.

c. If fault code change to MR17, you should replace the blade controller that the fault followed.

MR18/ML18 – Self-test error fault

Replace the right/left blade controller.

MR21/ML21 – Controller over-temperature fault

Stop the vehicle for a period of time to allow it to cool down, if the fault still have after restarting, replace the right/left blade controller.

MR22/ML22 – Motor temperature sensor abnormal fault

According to the flashing operation guide to flash the firmware of right/left blade controller to version 5.

MR23/ML23 – Motor over-temperature fault

According to the flashing operation guide to flash the firmware of right/left blade controller to version 5.

MR25/ML25 – CAN communication abnormal

Use multimeter to measure the resistance from right/left traction controller's connector.

① If the resistance is around 60 Ohms:

a. Check if the pins of connector socket of controller side are bent or retracted, if can be fixed, try to fix them.

b. Replace the right/left traction controller.

② Otherwise:

a. Check if the pins of the connector are bent or retracted, if can be fixed, try to fix them.

b. Replace the control harness.

