CRT42 G1 Trouble Shooting And FAQ List

Contents

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	◉ 0：Normal ○ 1：Avg Curr L1 ○ 2：Avg Curr L2 ○ 3：Spare
PMUNeg. MOSOvertemp	◉ 0：Normal ○ 1：OvertempL1 ○ 2：OvertempL2 ○ 3：NTCError
Peak Curr Overcurr	◉ 0：Normal ○ 1：Error
Feedback Curr Overcurr	◉ 0：Normal ○ 1：Error
PreCharge Function	○ 0：Normal ◉ 1：Error
PMUSoftware Auth	◉ 0：Normal ○ 1：Error
PMU Undervoltage Error	◉ 0：Normal ○ 1：Error
PMU Overvoltage Error	◉ 0：Normal ○ 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±0.2V, you should replace a new battery box.

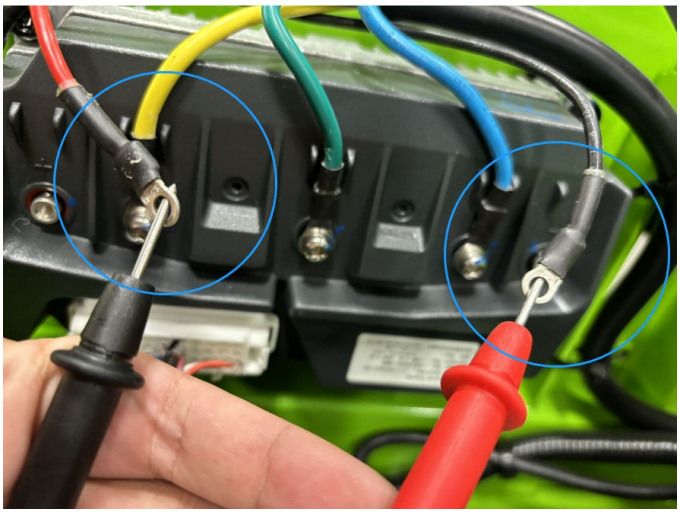
b. Otherwise follow the steps.

Correct value should be approximately equal to 0.7±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 lean to black wire, black lead to red wire).

a. If the value is approximately equal to 0.7±0.2V, you should replace left blade controller.

b. Otherwise follow the steps.

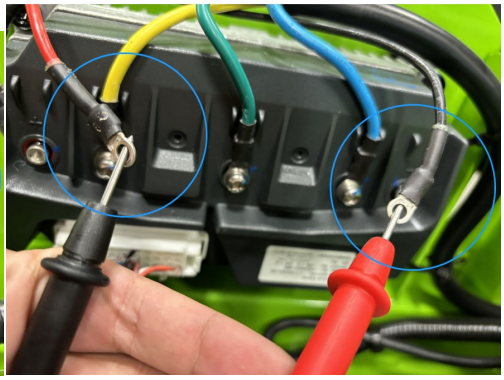


Correct value should be approximately equal to 0.7±0.2V

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±0.2V, you should replace right blade controller.

b. Otherwise follow the steps.



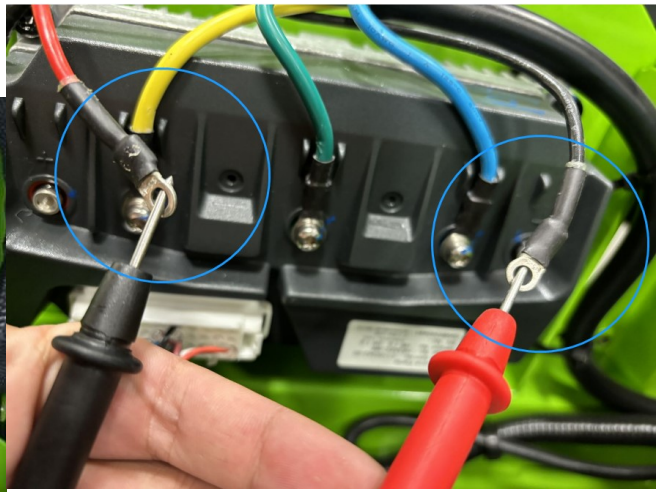
Correct value should be approximately equal to 0.7±0.2V

④ Disconnect the traction controller's power connector(B+,B-) 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±0.2V, you should replace left traction controller.

b. Otherwise follow the steps.



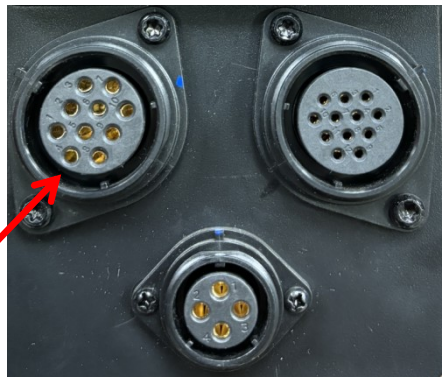
Correct value should be approximately equal to 0.7±0.2V

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	

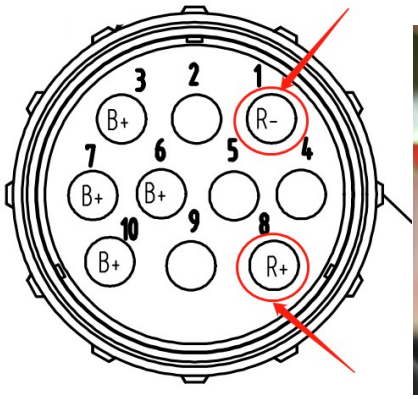
① Disconnect the power harness of the battery box, and adjust the dial position of multimeter to ohms as shown in the picture below.



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.

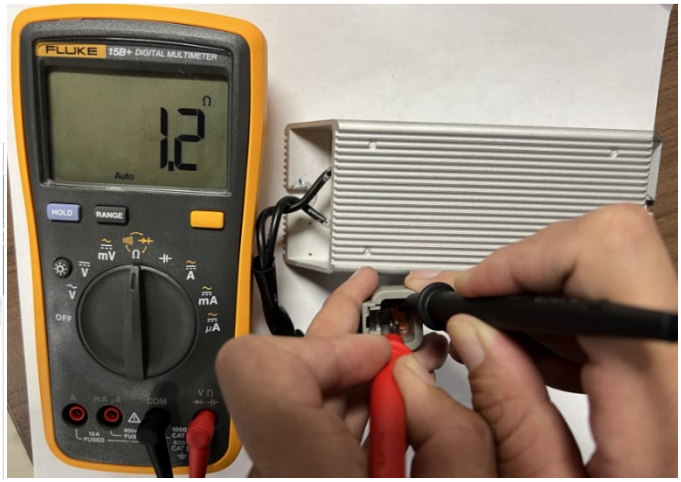
b. Otherwise follow the steps.



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

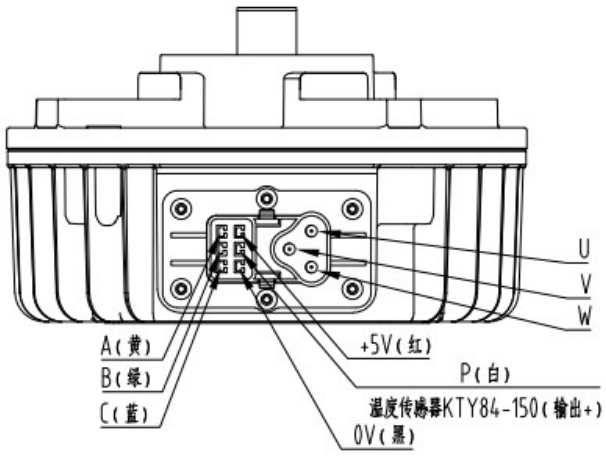
   Replace the battery compartment.

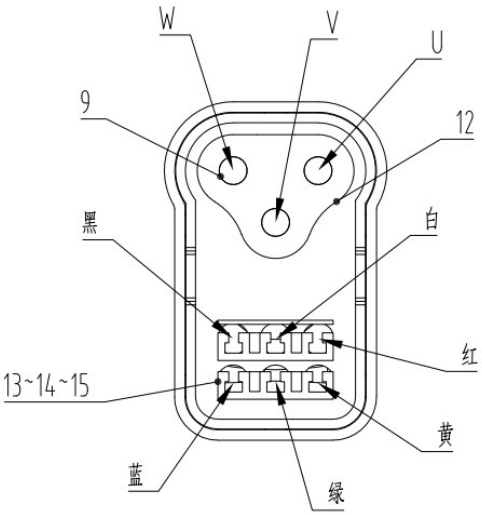
PMU13 - PMU no available battery

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

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:

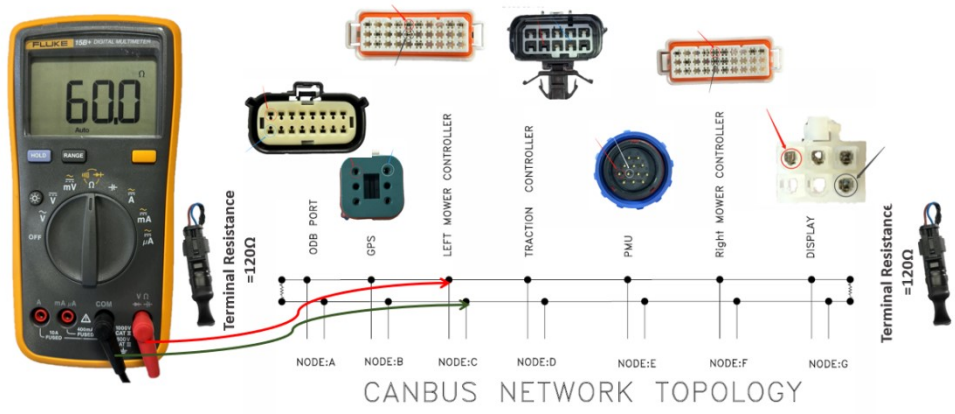
a. Check if the pins of connector of controller side are bent or retracted, if can be fixed, try to fix them.

b. Replace the left blade controller.

② Otherwise:

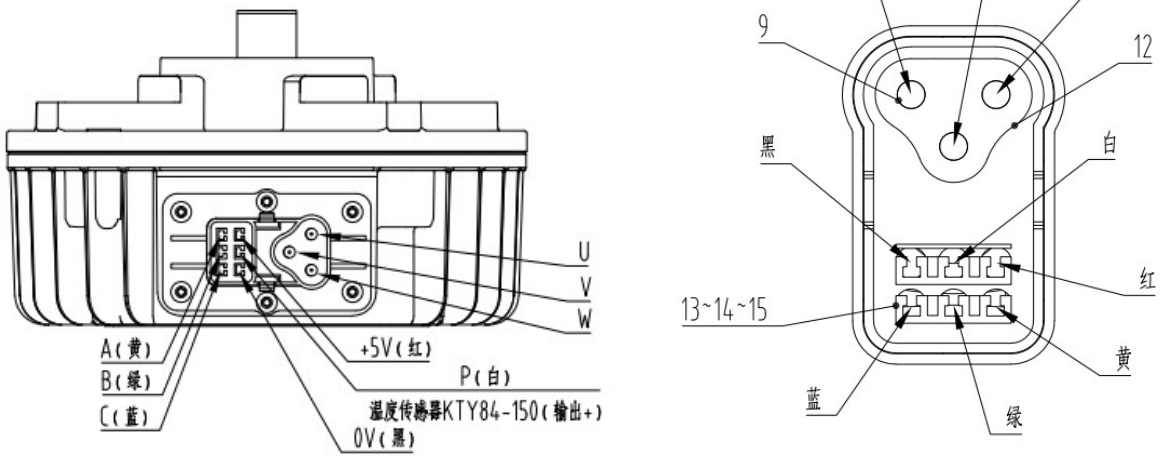
a. Check if the pins of the connector are bent or retracted, if can be fixed, try to fix them.

b. Replace the control harness.



V13 - Abnormal CAN communication at right blade controller

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



a. If the error code has disappeared, replace the right blade motor.

b. Otherwise: Use multimeter to measure the resistance from right blade controller's connector.

① If the resistance is around 60 Ohms:

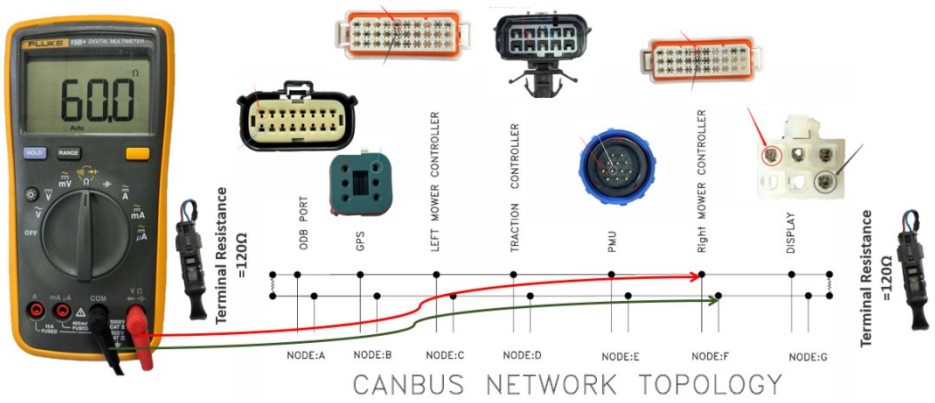
c. Check if the pins of connector of controller side are bent or retracted, if can be fixed, try to fix them.

d. Replace the right blade controller.

② Otherwise:

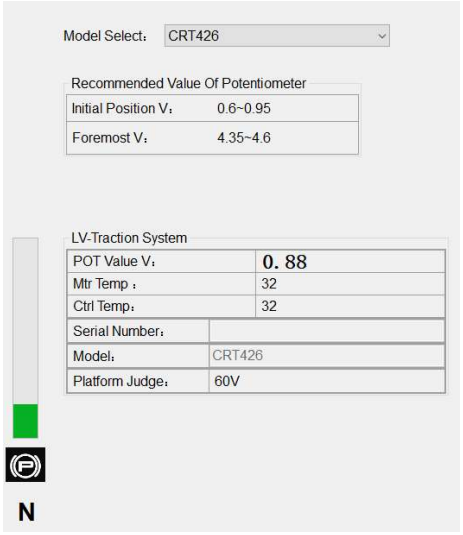
c. Check if the pins of the connector are bent or retracted, if can be fixed, try to fix them.

d. Replace the control harness.



V15 - Vehicle power-on self-test error

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



The status should meet the table below.

Switch & Controllers		State
Parking Switch		ON
PTO Switch		OFF
Cruise Switch		OFF
Drive Potentionmeter	0. 88	0.6-0.95
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
Parking Switch		ON
PTO Switch		OFF
Cruise Switch		OFF
Drive Potentionmeter	0. 88	0.6-0.95
Traction Controller		No Fault
PMU		No Fault

V18 - Potentiometer fault

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

① If the value is larger than 4.6 or smaller than 0.2, replace the potentiometer.

② Replace the traction controller.

③ Replace the control harness.

V17 - PMU CAN communication abnormal

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

① If the resistance is around 60 Ohms:

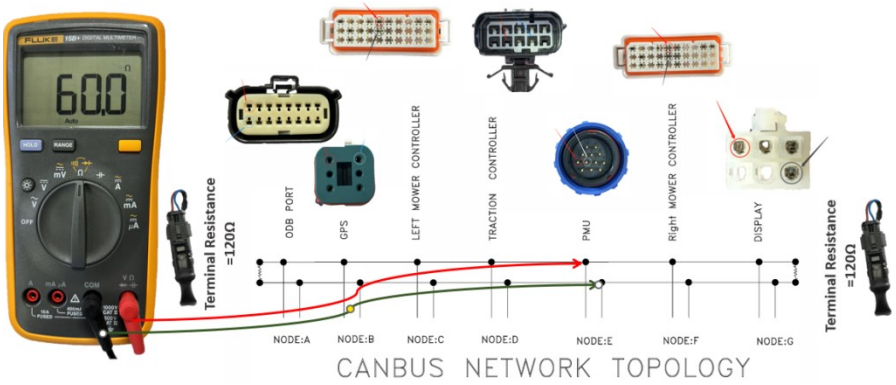
a. Check if the pins of connector of controller side are bent or retracted, if can be fixed, try to fix them.

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 traction controller.

T11 - Over-voltage fault

① Make sure the controller on the correct platform is used.

② Replace the right/left traction controller.

T12 - Under-voltage fault

① Charge the batteries.

② Make sure the controller on the correct platform is used.

③ Replace the traction controller.

T13 - MOS over-current fault

Replace the traction controller after restarting.

T14 - Motor stalled fault

1. Release the brake on a flat road, turn off the power, and check if there is any noise and sticking of the vehicle.
2. Check the pin status of the corresponding motor encoder connector and whether the connector is connected properly.
3. Check whether the phase wire of the corresponding motor is damaged and whether the phase wire installation is misaligned.
4. Replace the motor and gearbox assembly.
5. Replace the traction controller.

T15 - Hall sensor fault

1. Check the pin status of the corresponding motor encoder connector and whether the connector is connected properly.
2. Check whether the phase wire of the corresponding motor is damaged and whether the phase wire installation is misaligned.
3. Replace the motor and gearbox assembly.
4. Replace the traction controller.

T17 - 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 traction controller.

T18 - 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, repalce the traction motor.

T17 - Motor temperature sensor abnormal fault

1. Replace traction motor.
2. Replace 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 controller.

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 controller.

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 rotating 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 controller.

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 rotating the left side blade.

a. If the blade can't be rotated, replace the left blade controller.

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 traction controller.

MR17/ML17 - 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 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/left blade 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.