

DTC	C2861/81	Motor Inverter Start Malfunction
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CIRCUIT DESCRIPTION

The motor inverter is equipped with self diagnosis function to protect the motor inverter itself from damage. Protection from damage caused by low voltage of the motor inverter control power (C2861/81): The motor inverter detects the voltage of the motor inverter control power. If the voltage is lower than the minimum, the motor inverter cuts off the current for the traction motor and sends the signal (NRDY) to the EV control ECU. Over heat protection (C2862/82): The motor inverter temperature sensor senses the motor inverter temperature. The motor inverter sends the motor inverter temperature data to the EV control ECU. The EV control ECU executes the power down to prevent the increase of the motor inverter temperature. If the motor inverter temperature increases further, the motor inverter cuts off the current for the traction motor and sends the motor inverter temperature warning signal (OVTIN) to the EV control ECU.

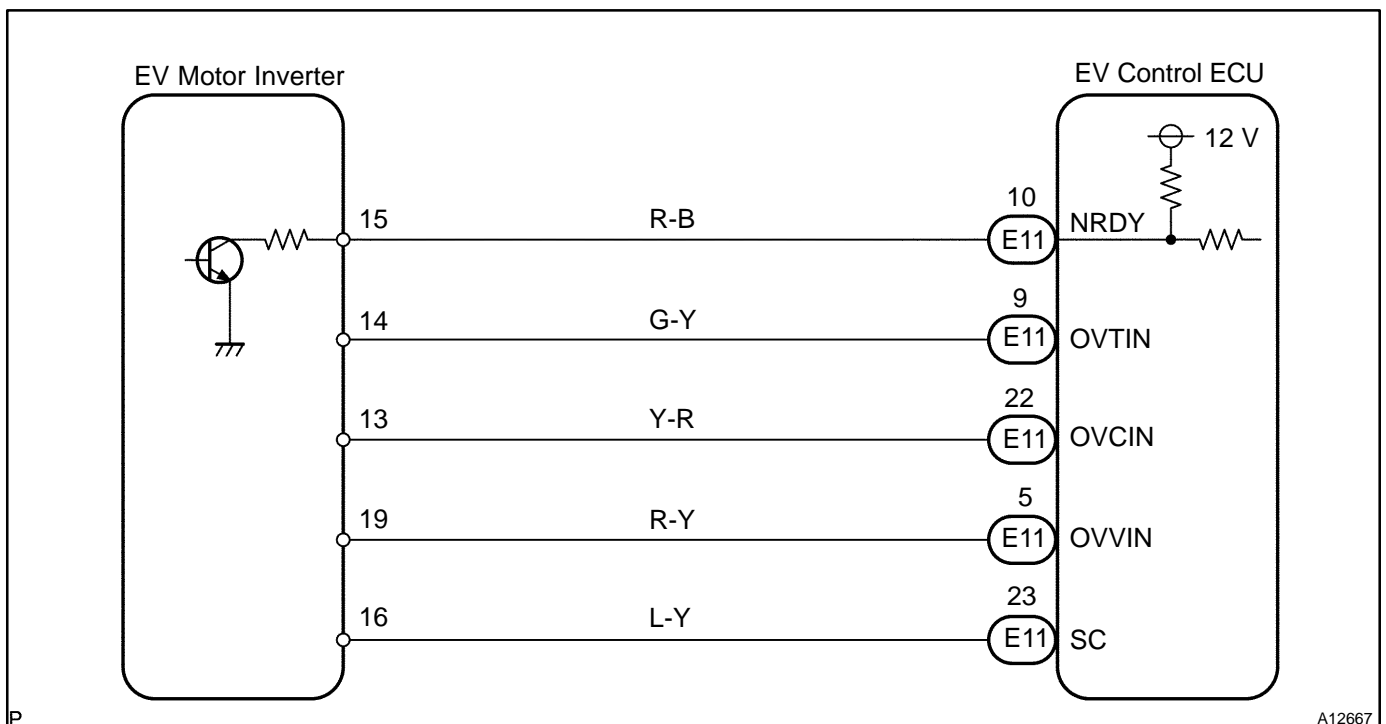
Over current protection (C2863/83): If the output current for the traction motor exceeds, the motor inverter cuts off the current for the traction motor and sends the over current signal (OVCIN) to the EV control ECU.

Protection from damage caused by short circuit (C2864/84): If the motor inverter detects the short circuit in the motor inverter itself or the output circuit for the traction motor, the motor inverter cuts off the current for the traction motor and sends the short circuit signal (SC) to the EV control ECU.

Over voltage (in high voltage circuit) protection: The motor inverter detects the input voltage from the traction battery and sends the voltage information of the traction battery (OVVIN) to the EV control ECU. If the input voltage from the traction battery exceeds, the EV control ECU sends the gate close signal (SDOWN) to the motor inverter. The motor inverter cuts off the current for the traction motor.

DTC No.	DTC Detection Condition	Trouble Area
C2861/81	NRDY signals HIGH for 0.1 sec. or more	<ul style="list-style-type: none"> • Open in NRDY signal circuit • Motor inverter • EV control ECU

WIRING DIAGRAM



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INSPECTION PROCEDURE

CAUTION:

To avoid receiving an electrical shock, do the operation written in PRECAUTION on page DI-3 .

HINT:

In case of outputting C2864/84 together, troubleshoot these first.

1 Check motor inverter start warning signal.

When using TOYOTA hand-held tester:

PREPARATION:

- (a) Connect the TOYOTA hand-held tester to the DLC3.
- (b) Turn the motor switch ON and push the TOYOTA hand-held tester main switch ON.

CHECK:

Read the motor inverter start warning signal from the CURRENT DATA after turning the motor switch to the ST position.

OK:

INV START: OFF

When not using TOYOTA hand-held tester:

PREPARATION:

- (a) Remove the PCU cover
- (b) Turn the motor switch ON.

CHECK:

Measure the voltage between terminal NRDY of the EV control ECU connector and the body ground after turning the motor switch to the ST position for the READY ON.

HINT:

When measuring the voltage, close the PCU cover.

OK:

Voltage: Below 1.0 V

OK

Check DTC. If DTC C2861/81 is indicated, replace EV control ECU.

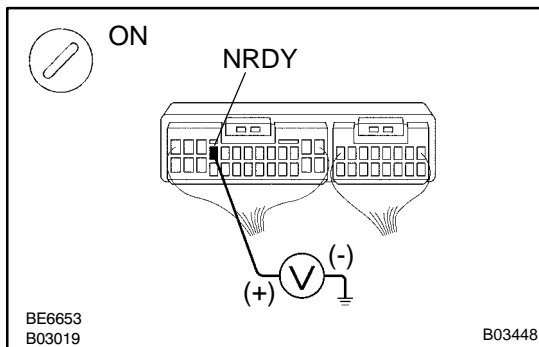
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2 Check for open in harness and connector in NRDY circuit between EV control ECU and motor inverter.

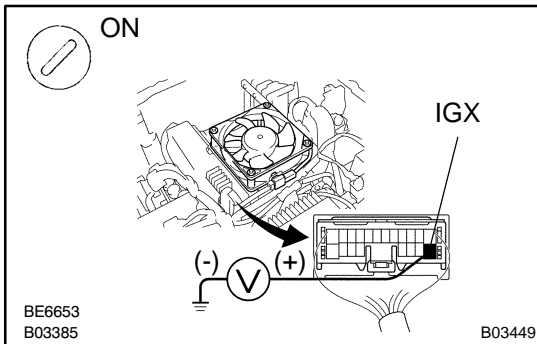
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Repair or replace harness or connector.

OK



3 Check voltage between terminal IGX of motor inverter connector and body ground.



PREPARATION:

- (a) Remove the PCU cover.
- (b) Turn the motor switch ON.

CHECK:

Measure the voltage between terminal IGX of the motor inverter connector.

HINT:

When measuring the voltage, close the PCU cover.

OK:

Voltage: 10 - 15 V

OK

Replace motor inverter.

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Check for open and short in harness and connector in IGX circuit.