

DTC	P3030	DISCONNECTION BETWEEN BATTERY AND ECU
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CIRCUIT DESCRIPTION

Refer to DTC P0A80 on page 05-902.

DTC No.	DTC Detection Condition	Trouble Area
P3030	Either of the following conditions occurs (1 trip detection logic) <ul style="list-style-type: none"> • Voltage at a battery blocks is below 2V • Voltage of all the battery block is between -24 V and 2 V 	<ul style="list-style-type: none"> • Junction block assembly (busbar module) • Frame wire No. 2 (busbar and wire harness) • Battery ECU

MONITOR DESCRIPTION

The battery ECU monitors a voltage of the battery blocks to detect an open malfunction in internal battery voltage sensor circuits of the battery ECU and the wire harness between each battery block and battery ECU. If a voltage at one of the battery blocks is below a standard level or of all the battery blocks is within a specified range, the battery ECU judges that there is an open in the internal sensor circuit(s) or wire harness. The battery ECU then illuminates the MIL and sets a DTC.

MONITOR STRATEGY

Related DTCs	P3030: Battery voltage sensor/Range check
Required sensor/components	The wire harness from each battery block to the battery ECU
Frequency of operation	Continuous
Duration	TOYOTA's intellectual property
MIL operation	Immediately
Sequence of operation	None

TYPICAL ENABLING CONDITIONS

The monitor will run whenever the following DTCs are not present	TOYOTA's intellectual property
Other conditions belong to TOYOTA's intellectual property	–

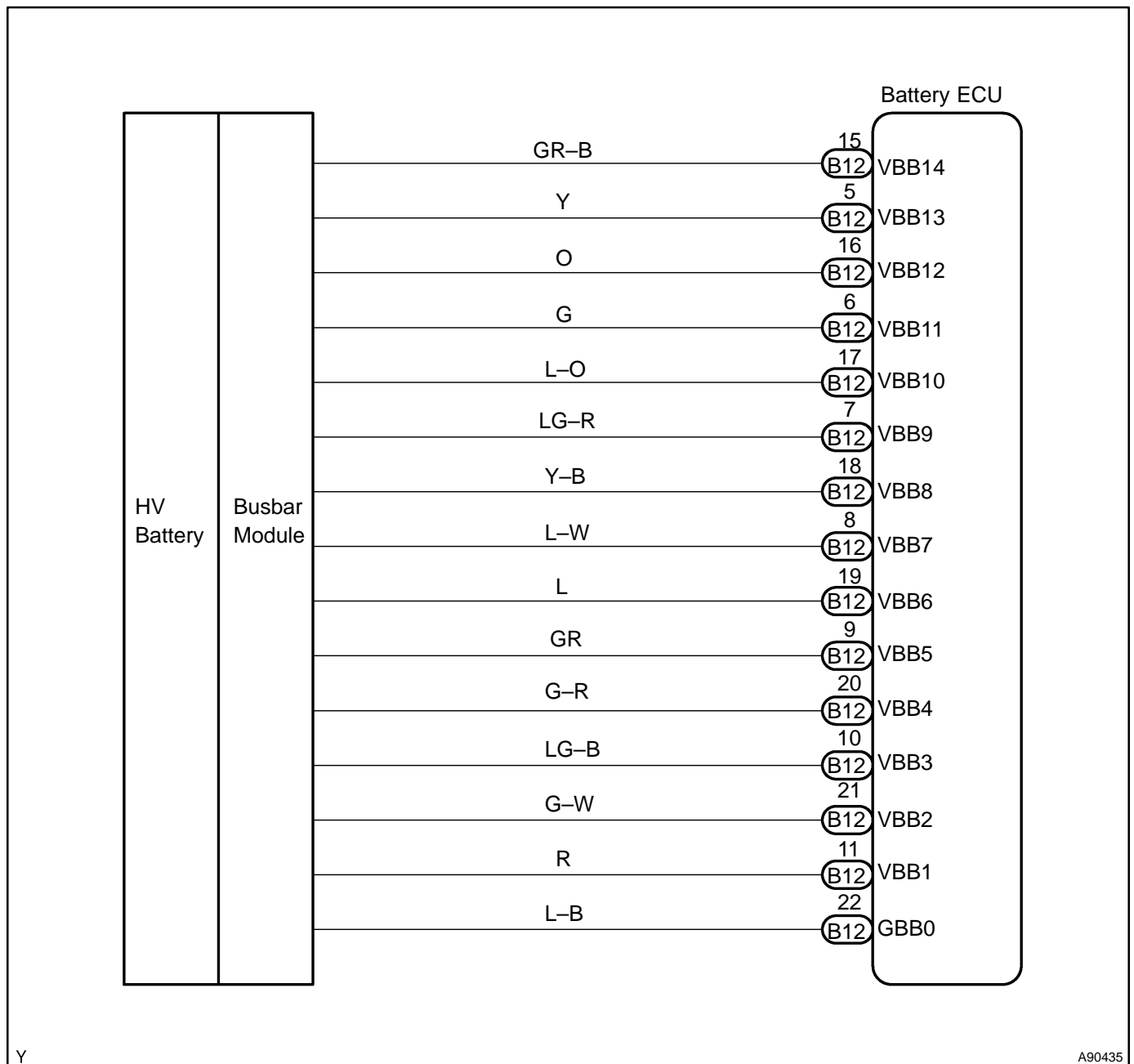
TYPICAL MALFUNCTION THRESHOLDS

Either of the following conditions is satisfied:	(a) or (b)
(c) Voltage at single battery block	Below 2 V
(d) Voltage of all battery blocks	Between -24 V and 2 V

COMPONENT OPERATING RANGE

Battery ECU	No open malfunction
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WIRING DIAGRAM



INSPECTION PROCEDURE

CAUTION:

- Before inspecting the high-voltage system, take safety precautions to prevent electrical shocks, such as wearing insulated gloves and removing the service plug grip. After removing the service plug grip, put it in your pocket to prevent other technicians from reconnecting it while you are servicing the high-voltage system.
- After disconnecting the service plug grip, wait at least for 5 minutes before touching any of the high-voltage connectors or terminals.

HINT:

At least 5 minutes is required to discharge the high-voltage condenser inside the inverter.

Hand-held tester:**1 READ OUTPUT DTC(DTC P0A1F IS OUTPUT)**

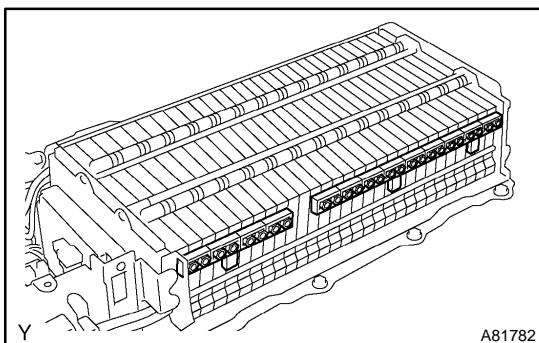
- (a) Connect the hand-held tester to the DLC3.
- (b) Turn the power switch ON (IG).
- (c) Turn the hand-held tester ON.
- (d) On the hand-held tester, enter the following menus: DIAGNOSIS / ENHANCED OBD II / HV BATTERY / DTC INFO / TROUBLE CODES.
- (e) Read DTCs.

Result: DTC P0A1F is output**YES****REPLACE BATTERY ECU ASSY
(See page 21-98)****NO****2 READ VALUE OF HAND-HELD TESTER(V1 TO V14 BATT BLOCK)**

- (a) Connect the hand-held tester to the DLC3.
- (b) Turn the power switch ON (IG).
- (c) Turn the hand-held tester ON.
- (d) On the hand-held tester, enter the following menus: DIAGNOSIS / ENHANCED OBD II / HV BATTERY / DATA LIST.
- (e) Read the V1 to V14 BATTERY BLOCK on the hand-held tester.

Standard: 2 V or more**OK****Go to step 5****NG****3 CHECK JUNCTION BLOCK ASSY(BUSBAR MODULE)****CAUTION:****Wear insulated gloves and goggles before performing the following operation.**

- (a) Remove the HV battery assembly (see page 21-54).
- (b) Remove the battery cover (see page 21-54).
- (c) Check that the nuts retaining the junction block assembly are tightened to the specified torque.

Torque: 5.4 N·m (55 kgf·cm, 48 in·lbf)**NG****TIGHTEN THEM TO SPECIFIED TORQUE****OK**

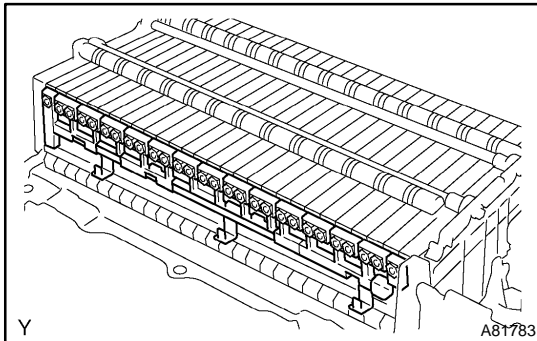
4 CHECK FRAME WIRE NO.2(BUSBAR MODULE)

CAUTION:

Wear insulated gloves and goggles before performing the following operation.

- (a) Check that the nuts retaining frame wire No. 2 are tightened to the specified torque.

Torque: 5.4 N·m (55 kgf·cm, 48 in·lbf)



NG

TIGHTEN THEM TO SPECIFIED TORQUE

OK

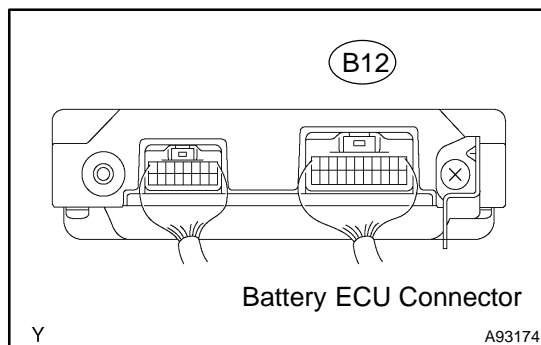
5 CHECK CONNECTION OF FRAME WIRE NO. 2 CONNECTOR

CAUTION:

Wear insulated gloves before performing the following operation.

- (a) Check the connection condition of the B12 battery ECU connector.

OK: Connector has been connected securely and there is no poor connection.



NG

CONNECT SECURELY

OK

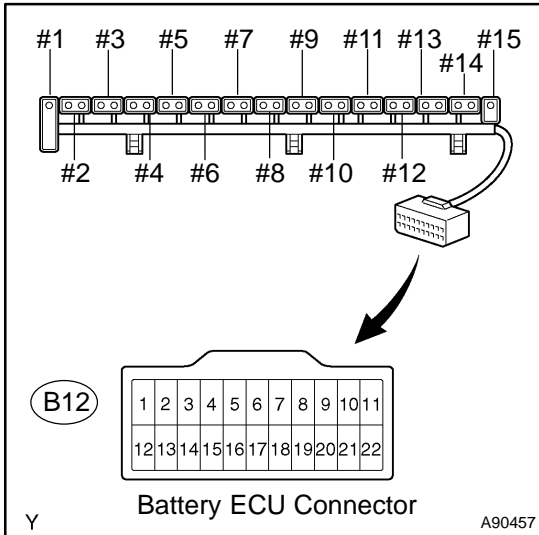
6 INSPECT FRAME WIRE NO.2(BUSBAR MODULE)

CAUTION:

Wear insulated gloves and goggles before performing the following operation.

- (a) Remove the frame wire No. 2 (see page 21-74).
- (b) Check the resistance between each connector of frame wire No. 2 and the metal portion.

Standard (Check for open):



Tester Connection	Specified Condition
GBB0 (B12-22) - #1	Below 1 Ω
VBB1 (B12-11) - #2	Below 1 Ω
VBB2 (B12-21) - #3	Below 1 Ω
VBB3 (B12-10) - #4	Below 1 Ω
VBB4 (B12-20) - #5	Below 1 Ω
VBB5 (B12-9) - #6	Below 1 Ω
VBB6 (B12-19) - #7	Below 1 Ω
VBB7 (B12-8) - #8	Below 1 Ω
VBB8 (B12-18) - #9	Below 1 Ω
VBB9 (B12-7) - #10	Below 1 Ω
VBB10 (B12-17) - #11	Below 1 Ω
VBB11 (B12-6) - #12	Below 1 Ω
VBB12 (B12-16) - #13	Below 1 Ω
VBB13 (B12-5) - #14	Below 1 Ω
VBB14 (B12-15) - #15	Below 1 Ω

- (c) Reinstall the frame wire No. 2.

NG **REPLACE FRAME WIRE NO.2**
(See page 21-74)

OK

REPLACE BATTERY ECU ASSY (See page 21-98)

OBD II scan tool (excluding hand-held tester):

1 READ OUTPUT DTC(DTC P0A1F IS OUTPUT)

- (a) Connect the OBD II scan tool to the DLC3.
- (b) Turn the power switch ON (IG).
- (c) Turn the OBD II scan tool ON.
- (d) Read DTCs using the OBD II scan tool.

Result: DTC P0A1F is output

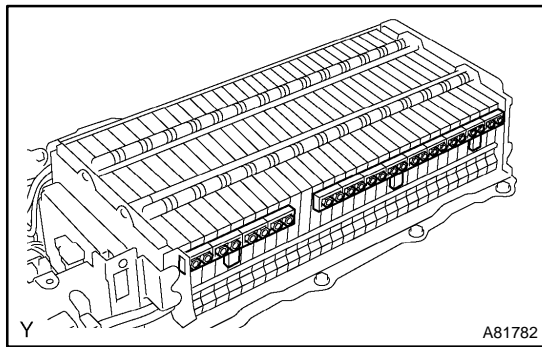
YES → **REPLACE BATTERY ECU ASSY**
(See page 21-98)

NO

2 CHECK JUNCTION BLOCK ASSY(BUSBAR MODULE)

CAUTION:

Wear insulated gloves and goggles before performing the following operation.



- (a) Remove the HV battery assembly (see page 21-54).
- (b) Remove the battery cover (see page 21-54).
- (c) Check that the nuts retaining the junction block assembly are tightened to the specified torque.
Torque: 5.4 N·m (55 kgf·cm, 48 in.·lbf)

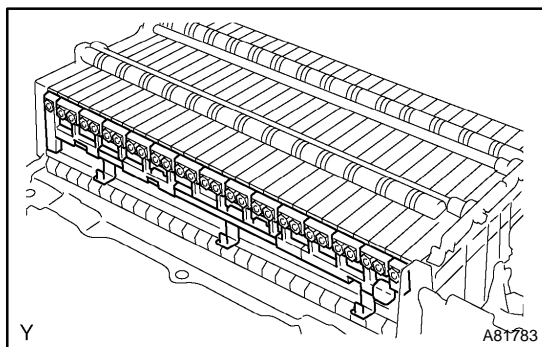
NG → **TIGHTEN THEM TO SPECIFIED TORQUE**

OK

3 CHECK FRAME WIRE NO.2(BUSBAR MODULE)

CAUTION:

Wear insulated gloves and goggles before performing the following operation.



- (a) Check that the nuts retaining frame wire No. 2 are tightened to the specified torque.
Torque: 5.4 N·m (55 kgf·cm, 48 in.·lbf)

NG → **TIGHTEN THEM TO SPECIFIED TORQUE**

OK

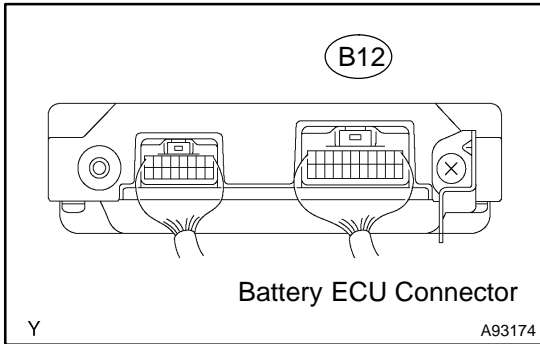
4 CHECK CONNECTION OF FRAME WIRE NO. 2 CONNECTOR

CAUTION:

Wear insulated gloves before performing the following operation.

- (a) Check the connection condition of the B12 battery ECU connector.

OK: Connector has been connected securely and there is no poor connection.



NG **CONNECT SECURELY**

OK

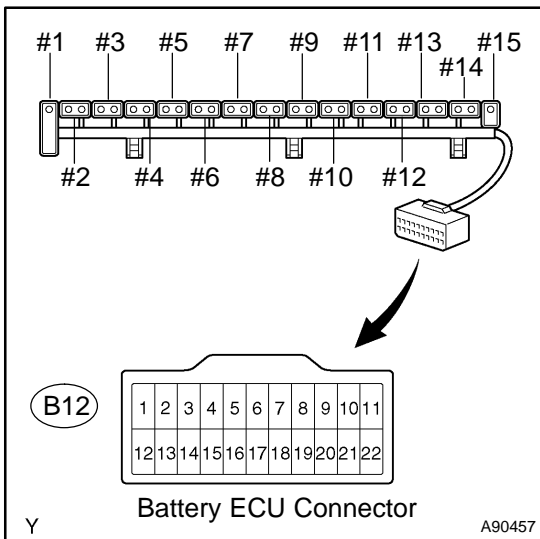
5 INSPECT FRAME WIRE NO.2(BUSBAR MODULE)

CAUTION:

Wear insulated gloves and goggles before performing the following operation.

- (a) Remove the frame wire No. 2 (see page 21-74).
- (b) Check the resistance between each connector of frame wire No. 2 and the metal portion.

Standard (Check for open):



Tester Connection	Specified Condition
GBB0 (B12-22) – #1	Below 1 Ω
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VBB11 (B12-6) – #12	Below 1 Ω
VBB12 (B12-16) – #13	Below 1 Ω
VBB13 (B12-5) – #14	Below 1 Ω
VBB14 (B12-15) – #15	Below 1 Ω

- (c) Reinstall the frame wire No. 2.

NG **REPLACE FRAME WIRE NO.2 (See page 21-74)**

OK

REPLACE BATTERY ECU ASSY (See page 21-98)