

DTC	C0278/11	Open or Short Circuit in ABS Solenoid Relay Circuit
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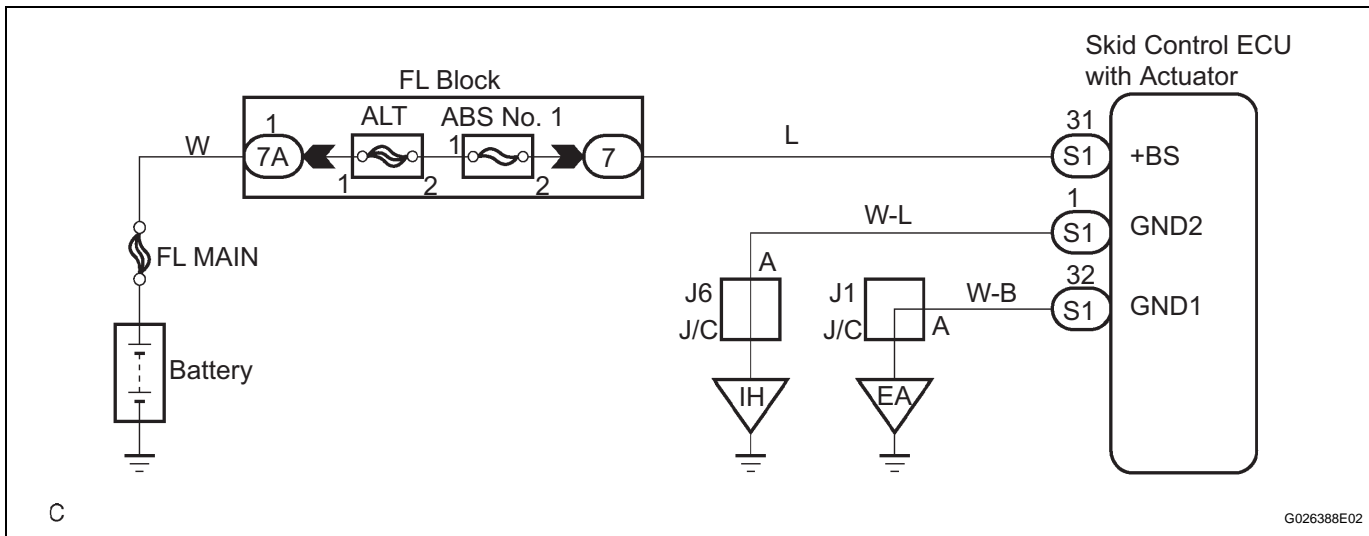
DTC	C0279/12	Short to B+ in ABS Solenoid Relay Circuit
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DESCRIPTION

The ABS solenoid relay is built in the ABS & TRACTION Actuator assembly. This relay supplies power to each ABS solenoid. If the initial check is OK, after the ignition switch is turned to the ON position, the relay goes on.

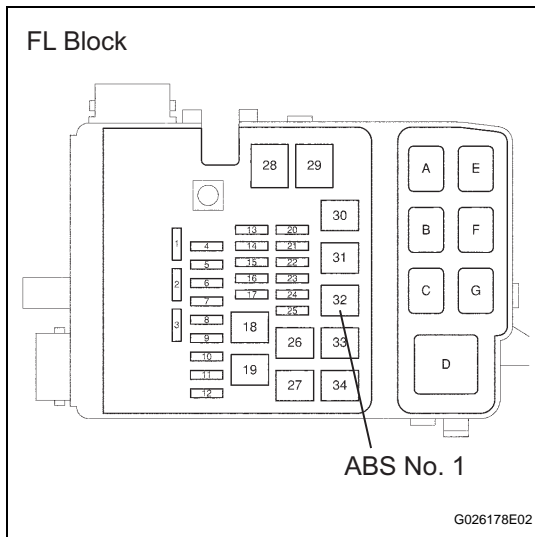
DTC No.	DTC Detection Condition	Trouble Area
C0278/11	When any of the following (1 to 2) is detected: All the following conditions continue for at least 0.2 seconds. <ul style="list-style-type: none"> IG voltage is between 9.5 and 17.2 V. Relay contact is open when the relay is ON. All the following conditions continue for at least 0.2 seconds. <ul style="list-style-type: none"> ? IG voltage is 9.5 V or less when the relay is ON. Relay contact remains open. 	ABS No. 1 fuse ABS SOL relay ABS SOL relay circuit ABS & TRAC actuator
C0279/12	The following condition continue for at least 0.2 seconds. <ul style="list-style-type: none"> Relay contact is closed immediately after turning IG switch to the ON position when the relay is OFF. 	ABS No. 1 fuse ABS SOL relay ABS SOL relay circuit ABS & TRAC actuator

WIRING DIAGRAM



1	INSPECT ABS NO. 1 FUSE
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(a) Remove the ABS No.1 fuse from the FL block.



(b) Measure the resistance according to the value(s) in the table below.

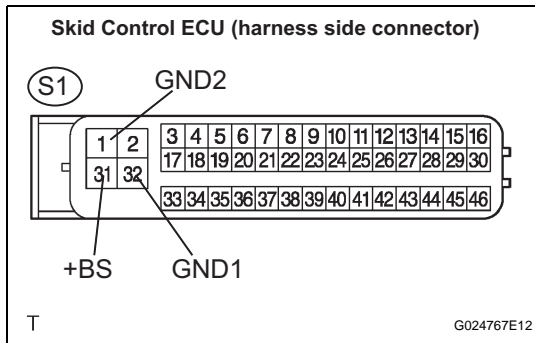
Resistance

Item	Specified condition
ABS No. 1 fuse	Below 1 Ω (Continuity)

NG → **REPLACE FUSE**

OK

2 INSPECT SKID CONTROL ECU CONNECTOR



(a) Disconnect the skid control ECU connector.
 (b) Turn the ignition switch to the ON position.
 (c) Measure the voltage according to the value(s) in the table below.

Voltage

Tester Connection	Specified Condition
S1-31 (+BS) - S1-32 (GND1)	10 to 14 V
S1-31 (+BS) - S1-1 (GND2)	10 to 14 V

NG → **Go to step 4**

OK

3 RECONFIRM DTC

HINT:

This code is detected when a problem is determined in the ABS & TRACTION actuator assembly. The ABS solenoid relay is in the ABS & TRACTION actuator assembly. Therefore, solenoid relay circuit inspection relay unit inspection cannot be performed. Be sure to check if the DTC code is output before replacing the ABS & TRACTION actuator assembly.

- (a) Clear the DTCs (See page BC-21).
- (b) Turn the ignition switch to the ON position.
- (c) Are the same DTCs recorded.

Result

Result	Proceed to
DTC is output	A

Result	Proceed to
DTC is not output	B

NOTICE:
 When replacing ABS & TRACTION ACTUATOR ASSEMBLY, perform zero point calibration (See page BC-5).

B → **PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE**

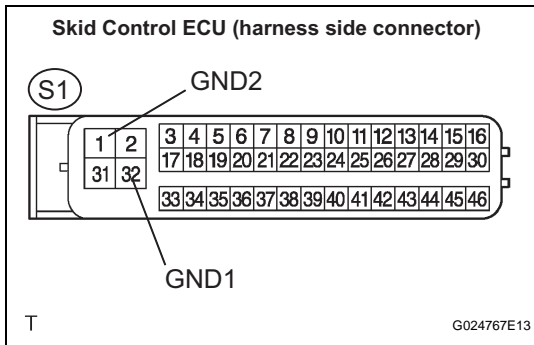
A

REPLACE ABS AND TRACTION ACTUATOR

4 INSPECT SKID CONTROL ECU CONNECTOR

- (a) Disconnect the skid control ECU connector.
- (b) Measure the resistance according to the value(s) in the table below.

Resistance



Tester Connection	Specified Condition
S1-32 (GND1) - Body ground	Below 1 Ω
S1-1 (GND2) - Body ground	Below 1 Ω

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

5 RECONFIRM DTC

HINT:

This code is detected when a problem is determined in the ABS & TRACTION actuator assembly. The ABS solenoid relay is in the ABS & TRACTION actuator assembly.

Therefore, solenoid relay circuit inspection relay unit inspection cannot be performed. Be sure to check if the DTC code is output before replacing the ABS & TRACTION actuator assembly.

- (a) Clear the DTCs (See page BC-21).
- (b) Turn the ignition switch to the ON position.
- (c) Are the same DTCs recorded.

Result

Result	Proceed to
DTC is output	A
DTC is not output	B

HINT:

It is suspected that the DTCs output was caused by the poor connection of the connector terminal.

NOTICE:

When replacing ABS & TRACTION ACTUATOR ASSEMBLY, perform zero point calibration (See page [BC-5](#)).

B

**PROCEED TO NEXT CIRCUIT INSPECTION
SHOWN IN PROBLEM SYMPTOMS TABLE**

A

REPLACE ABS AND TRACTION ACTUATOR