

DTC	P0778	Pressure Control Solenoid "B" Electrical (Shift Solenoid Valve SL2)
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CIRCUIT DESCRIPTION

See page [DI-433](#).

DTC No.	DTC Detection Condition	Trouble Area
P0778	ECM checks for an open or short circuit in shift solenoid valves SL2 (1-trip detection logic) (a) When solenoid is energized, duty ratio exceed 75% (b) When solenoid is not energized, duty ratio is less than 3%	• Open or short in shift solenoid valve SL2 circuit • Shift solenoid valve SL2 • ECM

MONITOR DESCRIPTION

The ECM commands gearshift by turning the shift solenoid valves "ON/OFF". When there is an open or short circuit in any shift solenoid valve circuit, the ECM detects the problem and illuminates the MIL and stores the DTC. And the ECM performs the fail-safe function and turns the other shift solenoid valves in good condition "ON/OFF" (In case of an open or short circuit, the ECM stops sending current to the circuit.) (see page [DI-433](#)).

MONITOR STRATEGY

Related DTCs	P0778	Shift solenoid valve SL2/Range check
Required sensors/Components	Shift solenoid valve SL2	
Frequency of operation	Continuous	
Duration	1 sec.	
MIL operation	Immediate	
Sequence of operation	None	

TYPICAL ENABLING CONDITIONS

Item	Specification	
	Minimum	Maximum
The monitor will run whenever the following DTCs are not present.	See page DI-369	
All of the following conditions are met: Condition (A) and (B)		
Condition (A)		
Battery voltage	10 V or more	Less than 12 V
CPU commanded duty	Less than 75%	
Ignition switch	ON	
Starter	OFF	
Condition (B)		
Battery voltage	12 V or more	–
Ignition switch	ON	
Starter	OFF	

TYPICAL MALFUNCTION THRESHOLDS

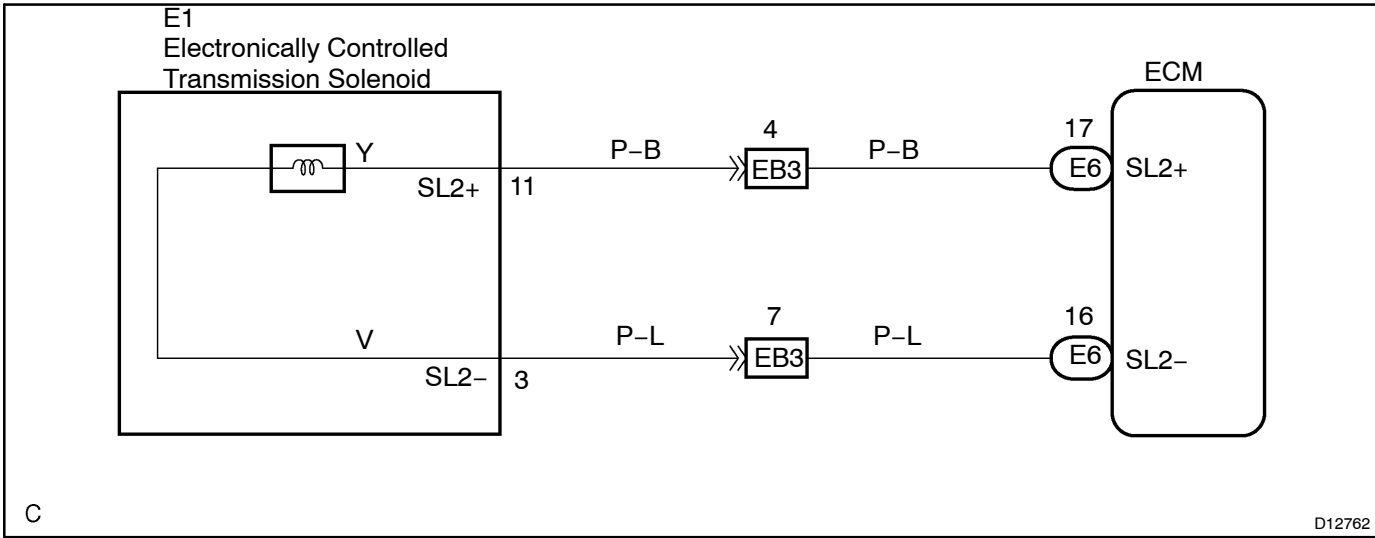
Detection criteria	Threshold
Output signal duty	100%

2005 LAND CRUISER (RM1147U)

COMPONENT OPERATING RANGE

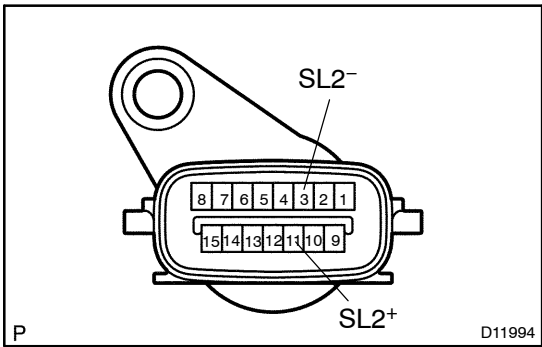
Parameter	Standard value
Output signal duty	Less than 100%

WIRING DIAGRAM



INSPECTION PROCEDURE

1	Check transmission wire.
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PREPARATION:

Disconnect the transmission wire connector.

CHECK:

Measure resistance between SL2+ and SL2- of transmission wire.

OK:

Resistance: 5.0 to 5.6 Ω at 20°C (68°F)

CHECK:

Measure resistance between terminals SL2+ and SL2- of the transmission wire connector and body ground.

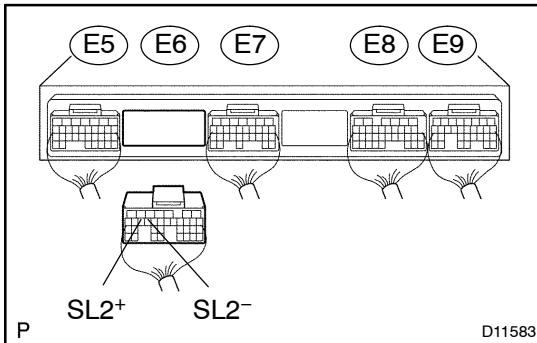
OK:

Resistance: 1 M Ω or higher

NG

Go to step 3.

OK

2**Measure resistance between terminal SL2⁺ and SL2⁻ of ECM connector.****PREPARATION:**

- (a) Connect the transmission wire connector.
- (b) Disconnect the connector of the ECM.

CHECK:

Measure resistance between terminals SL2⁺ and SL2⁻ of ECM connector.

OK:

Resistance: 5.0 to 5.6 Ω at 20°C (68°F)

CHECK:

Measure resistance between terminals SL2⁺ and SL2⁻ of the ECM connector and body ground.

OK:

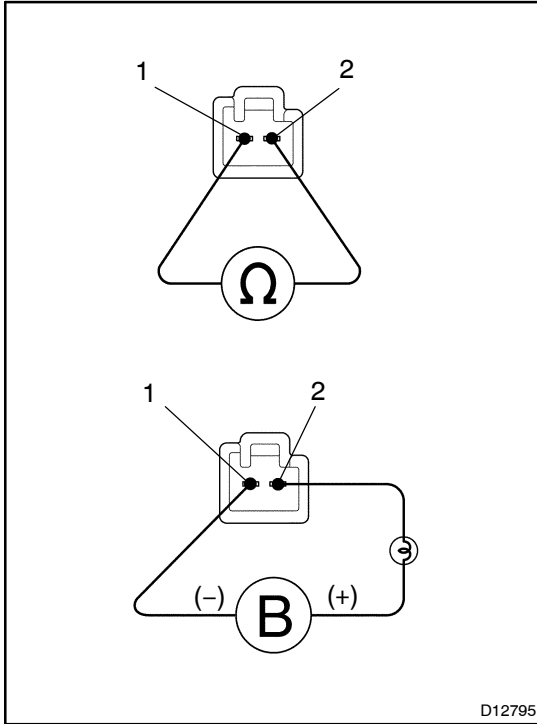
Resistance: 1 M Ω or higher

NG

Repair or replace the harness or connector (See page [IN-36](#)).

OK

Check and replace the ECM (See page [IN-36](#)).

3**Check shift solenoid valve SL2.****PREPARATION:**

- (a) Jack up the vehicle.
- (b) Remove the oil pan.
- (c) Remove the shift solenoid valve SL2.

CHECK:

- (a) Measure the resistance between terminals 1 and 2 of solenoid connector.

Standard: 5.0 to 5.6 Ω at 20°C (68°F)

- (b) Connect the positive (+) lead with an 21 W bulb to terminal 2 of solenoid connector and negative (-) lead to terminal 1 of the solenoid valve connector, then check the movement of the valve.

Standard: Solenoid sounds operation noise.**OK:****Standard****NG****Replace the shift solenoid valve SL2
(See page AT-8).****OK****Repair or replace the transmission wire
(See page AT-6).**