

# P0707 Transmission Range Sensor Circuit Low

## Wiring Diagram

Refer to "DTC P0705 Transmission Range Sensor Circuit Malfunction: ".

## DTC Detecting Condition and Trouble Area

DTC Detecting Condition	Trouble Area
Transmission range switch signal (P, R, N, D, 2, L) is not inputted for more than 2 seconds in the following condition. • Vehicle speed is more than 30 km/h (19 mile/h). And • Engine speed is more than 1500 rpm (2 driving cycle detection logic)	• Select cable maladjusted. • Transmission range sensor (switch) maladjusted.  • Transmission range sensor (switch) or its circuit malfunction. •TCM

## DTC Confirmation Procedure

- 1) Connect scan tool to DLC with ignition switch OFF.
- 2) Clear DTCs in TCM and ECM memories by using scan tool.
- 3) Start engine and shift select lever to "D" range.
- 4) Start vehicle and increase vehicle speed to 50 km/h (31 mile/h) or more for 2 minutes.
- 5) Stop vehicle and turn ignition switch OFF.
- 6) Repeat Step 3) to 5) one time.
- 7) Stop vehicle.
- 8) Check DTC, pending DTC and freeze-frame data.

## DTC Troubleshooting

Step	Action	Yes	No
1	Was "AT System Check" performed?	Go to Step 2.	Go to "AT System Check".
2	Do you have SUZUKI scan tool?	Go to Step 3.	Go to Step 4.
3	<p><b>Check transmission range sensor (switch) circuit for operation</b></p> <p>Check by using SUZUKI scan tool:</p> <p>1) Connect SUZUKI scan tool to DLC with ignition switch OFF.</p> <p>2) Turn ignition switch ON and check transmission range sensor signal ("P", "R", "N", "D", "2" or "L") on display when shifting select lever to each range.</p> <p>Is applicable range indicated?</p>	Intermittent trouble. Check for intermittent trouble referring to "Intermittent and Poor Connection Inspection: in Section 00".	Go to Step 5.
4	<p>Check transmission range sensor (switch) circuit for operation Check without using SUZUKI scan tool:</p> <p>1) Turn ignition switch ON. 2) Check voltage at terminals "E93-1", "E93-7", "E93-8", "E93-18", "E93-19" and "E93-20" respectively with select lever shifted to each range.</p> <p>Taking terminal "E93-1" as an example, is battery voltage will be indicated only when shift lever is shifted to "R" range and 0 V for other ranges as shown in table.</p> <p>Check voltage at other terminals likewise, referring to table.</p> <p>Are check results satisfactory?</p>	Intermittent trouble. Check for intermittent trouble referring to "Intermittent and Poor Connection Inspection: in Section 00".	Go to Step 5.

Step	Action	Yes	No
5	Check transmission range sensor (switch) for installation position 1) Check transmission range sensor (switch) for installation position referring to "Transmission Range Sensor Inspection and Adjustment: ". Is it adjusted correctly?	Go to Step 6.	Adjust transmission range sensor (switch) and recheck.
6	Check select cable for adjustment 1) Check select cable for adjustment referring to "Select Cable Adjustment: ". Is it adjusted correctly?	Go to Step 7.	Adjust select cable and recheck.
7	Check transmission range sensor (switch) 1) Check transmission range sensor (switch) referring to "Transmission Range Sensor Inspection and Adjustment: ". Are check results satisfactory?	Transmission range sensor circuit open or shorted to ground. If wires and connections are OK, substitute a known-good TCM and recheck.	Replace transmission range sensor (switch).

		Terminal					
		E93-20	E93-1	E93-8	E93-7	E93-19	E93-18
Select lever position	P	8 – 14 V	0 V	0 V	0 V	0 V	0 V
	R	0 V	8 – 14 V	0 V	0 V	0 V	0 V
	N	0 V	0 V	8 – 14 V	0 V	0 V	0 V
	D or 3	0 V	0 V	0 V	8 – 14 V	0 V	0 V
	2	0 V	0 V	0 V	0 V	8 – 14 V	0 V
	L	0 V	0 V	0 V	0 V	0 V	8 – 14 V