

Last Modified: 7-13-2007		1.6 C
Service Category: Brake	Section: Brake Control/Dynamic Control System	
Model Year: 2008	Model: ES350	Doc ID: RM000001RFV00XX
Title: BRAKE CONTROL: VEHICLE STABILITY CONTROL SYSTEM: C1232/32: Stuck in Acceleration Sensor (2008 ES350)		

DTC	C1232/32	Stuck in Acceleration Sensor
DTC	C0371/71	Yaw Rate Sensor (Test Mode DTC)
DTC	C1234/34	Yaw Rate Sensor Malfunction
DTC	C1243/43	Acceleration Sensor Stuck Malfunction
DTC	C1244/44	Open or Short in Acceleration Sensor Circuit
DTC	C1245/45	Acceleration Sensor Output Malfunction
DTC	C1279/79	Acceleration Sensor Output Voltage Malfunction (Test Mode DTC)
DTC	C1381/97	Acceleration Sensor Power Supply Voltage Malfunction

DESCRIPTION

The skid control ECU receives signals from the yaw rate and acceleration sensor via the CAN communication system.

The yaw rate sensor has a built in acceleration sensor and detects the vehicle's condition using 2 circuits (GL1, GL2).

If there is trouble in the bus lines between the yaw rate and acceleration sensor and the CAN communication system, the DTC U0123/62 (malfunction in CAN communication with the yaw rate sensor) and U0124/95 (malfunction in CAN communication with the acceleration sensor) are output.

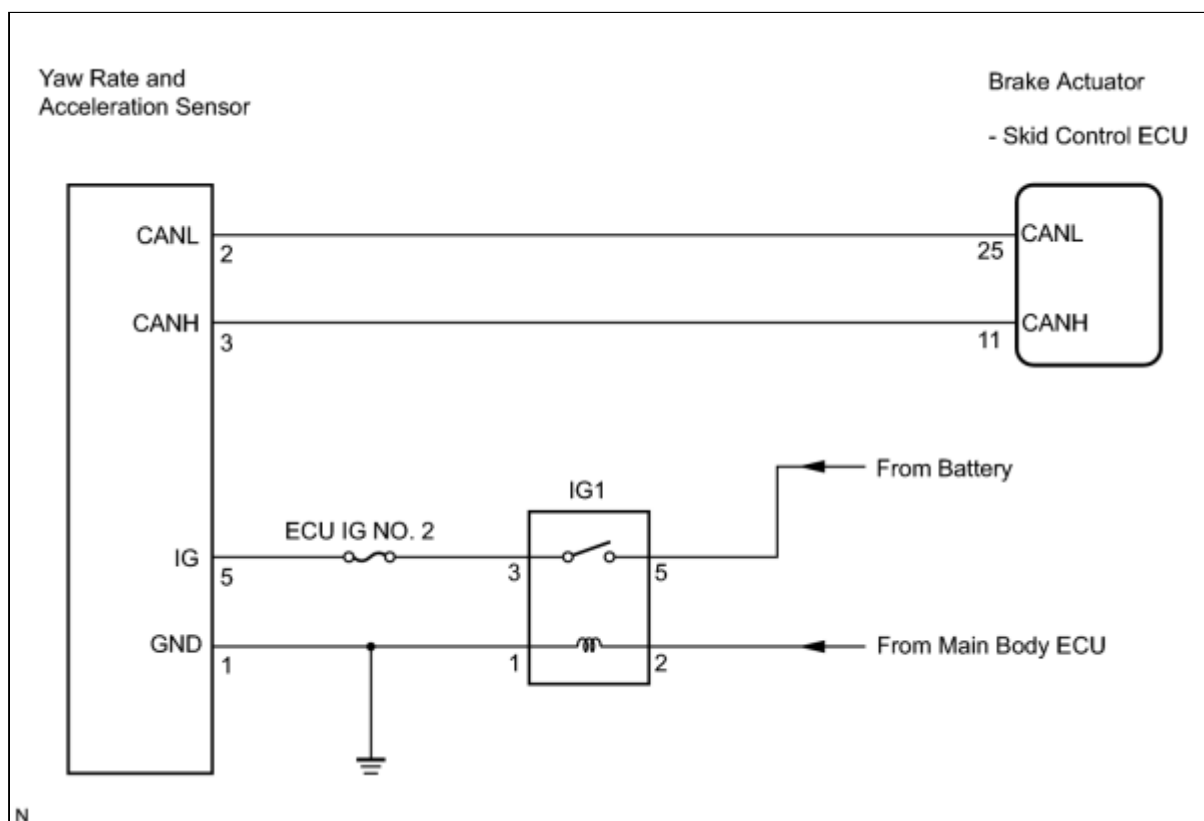
These DTCs are also output when calibration has not been completed.

DTCs C0371/71 and C1279/79 can be deleted when the yaw rate and acceleration sensor sends a yaw rate and/or acceleration signal or the Test Mode ends. DTCs C0371/71 and C1279/79 are output only in the Test Mode.

DTC CODE	DTC DETECTION CONDITION	TROUBLE AREA
C1232/32	At a vehicle speed of 10 km/h (6 mph) or more, either GL1 or GL2 (input signal) does not change for 30 seconds or more.	<ul style="list-style-type: none"> Yaw rate and acceleration sensor Yaw rate and acceleration sensor circuit
C1234/34	Sensor malfunction signal is received from the yaw rate sensor.	<ul style="list-style-type: none"> Yaw rate and acceleration sensor Yaw rate and acceleration sensor circuit
	While the vehicle speed changes from 30 km/h (19 mph) to 0 km/h (0 mph),	<ul style="list-style-type: none"> Yaw rate and

C1243/43	the condition that the values of GL1 and GL2 do not change occurs 16 times or more.	acceleration sensor <ul style="list-style-type: none"> Yaw rate and acceleration sensor circuit
C1244/44	When either of the following is detected: 1. A data malfunction signal is received from the acceleration sensor. 2. After the difference between GL1 and GL2 becomes 0.6 G or more with the vehicle stationary, the difference remains 0.4 G or more for 60 seconds or more.	<ul style="list-style-type: none"> Yaw rate and acceleration sensor Yaw rate and acceleration sensor circuit
C1245/45	At a vehicle speed of 30 km/h (19 mph) or more, the difference between the forward and backward G calculated from the acceleration sensor value and that calculated from the vehicle speed sensor exceeds 0.35 G for 60 seconds or more.	<ul style="list-style-type: none"> Yaw rate and acceleration sensor Yaw rate and acceleration sensor circuit
C1381/97	At a vehicle speed of more than 3 km/h (2 mph), the acceleration sensor power source malfunction signal is received for 10 seconds or more.	<ul style="list-style-type: none"> Yaw rate and acceleration sensor Yaw rate and acceleration sensor power source circuit
C0371/71	Detected only during Test Mode.	Yaw rate and acceleration sensor
C1279/79	Detected only during Test Mode.	<ul style="list-style-type: none"> Yaw rate and acceleration sensor Sensor installation

WIRING DIAGRAM



INSPECTION PROCEDURE


NOTICE:

When replacing the yaw rate and acceleration sensor, perform zero point calibration  .

HINT:

When U0123/62, U0124/95 or U0126/63 is output together with C1232/32, C1234/34, C1243/43, C1244/44, C1245/45, or C1381/97, inspect and repair the trouble areas indicated by U0123/62, U0124/95 or U0126/63 first.

PROCEDURE**1. CHECK DTC**

- (a) Clear the DTC  .
- (b) Turn the engine switch off.
- (c) At a speed of 30 km/h (19 mph) or more, drive the vehicle, turn the steering wheel, and decelerate the vehicle (depress the brake pedal).
- (d) Turn the engine switch on (IG) again and check that no CAN communication system DTC is output.
- (e) Check if DTCs for zero point calibration of the yaw rate sensor undone (C1210/36) or for zero point calibration of the acceleration sensor undone (C1336/39) are output.

Result:


CONDITION	PROCEED TO
DTCs (C1210/36, C1336/39 and/or CAN communication system DTC) are not output	A
CAN communication system DTC is output	B
DTCs (C1210/36 and/or C1336/39) are output	C

B  **INSPECT CAN COMMUNICATION SYSTEM**

C  **REPAIR CIRCUIT INDICATED BY OUTPUT DTC**

A


2. CHECK YAW RATE AND ACCELERATION SENSOR INSTALLATION

- (a) Turn the engine switch off.
- (b) Check that the yaw rate and acceleration sensor has been installed properly  .

OK:

The sensor is tightened to the specified torque.

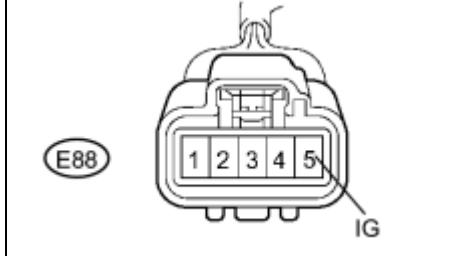
The sensor is not tilted.

NG  **INSTALL YAW RATE AND ACCELERATION SENSOR CORRECTLY**

OK


3. INSPECT YAW RATE AND ACCELERATION SENSOR (IG TERMINAL)

Yaw Rate and Acceleration Sensor
Harness Side Connector Front View:



(a) Disconnect the yaw rate and acceleration sensor connector.

(b) Turn the engine switch on (IG).

(c) Measure the voltage according to the value(s) in the table below.

Standard voltage:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
E88-5 (IG) - Body ground	Engine switch on (IG)	10 to 14 V

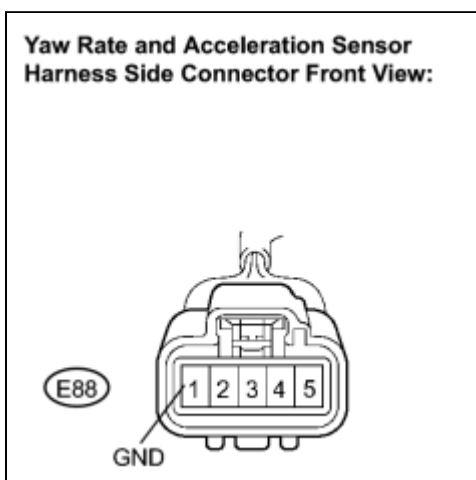
NG ▶ REPAIR OR REPLACE HARNESS OR CONNECTOR (IG CIRCUIT)

OK



4. INSPECT YAW RATE AND ACCELERATION SENSOR (GND TERMINAL)

Yaw Rate and Acceleration Sensor
Harness Side Connector Front View:



(a) Turn the engine switch off.

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

Standard resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
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E88-1 (GND) - Body ground

Always

Below 1 Ω **NOTICE:**

Check the yaw rate and acceleration sensor signal after replacement  .

HINT:

If troubleshooting has been carried out according to the Problem Symptoms Table, refer back to the table and proceed to the next step  .

NG  REPAIR OR REPLACE HARNESS OR CONNECTOR (GND CIRCUIT)

OK  REPLACE YAW RATE AND ACCELERATION SENSOR

