

Last Modified: 3-27-2012	6.4 D	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000002NJF01AX
Title: METER / GAUGE / DISPLAY: CLOCK SYSTEM: HOW TO PROCEED WITH TROUBLESHOOTING (2013 FR-S)		

HOW TO PROCEED WITH TROUBLESHOOTING

- Use these procedures to troubleshoot the clock system.

1.	VEHICLE BROUGHT TO WORKSHOP
----	-----------------------------

NEXT

▼

2.	INSPECT BATTERY VOLTAGE
----	-------------------------

Standard voltage:
11 to 14 V

If the voltage is below 11 V, recharge or replace the battery before proceeding.

NEXT

▼

3.	PROBLEM SYMPTOMS TABLE
----	------------------------

(a) Refer to Problem Symptoms Table [INFO](#) .

NEXT

▼

4.	ADJUST, REPAIR OR REPLACE
----	---------------------------

NEXT

▼

5.	CONFIRMATION TEST
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NEXT ▶ **END**

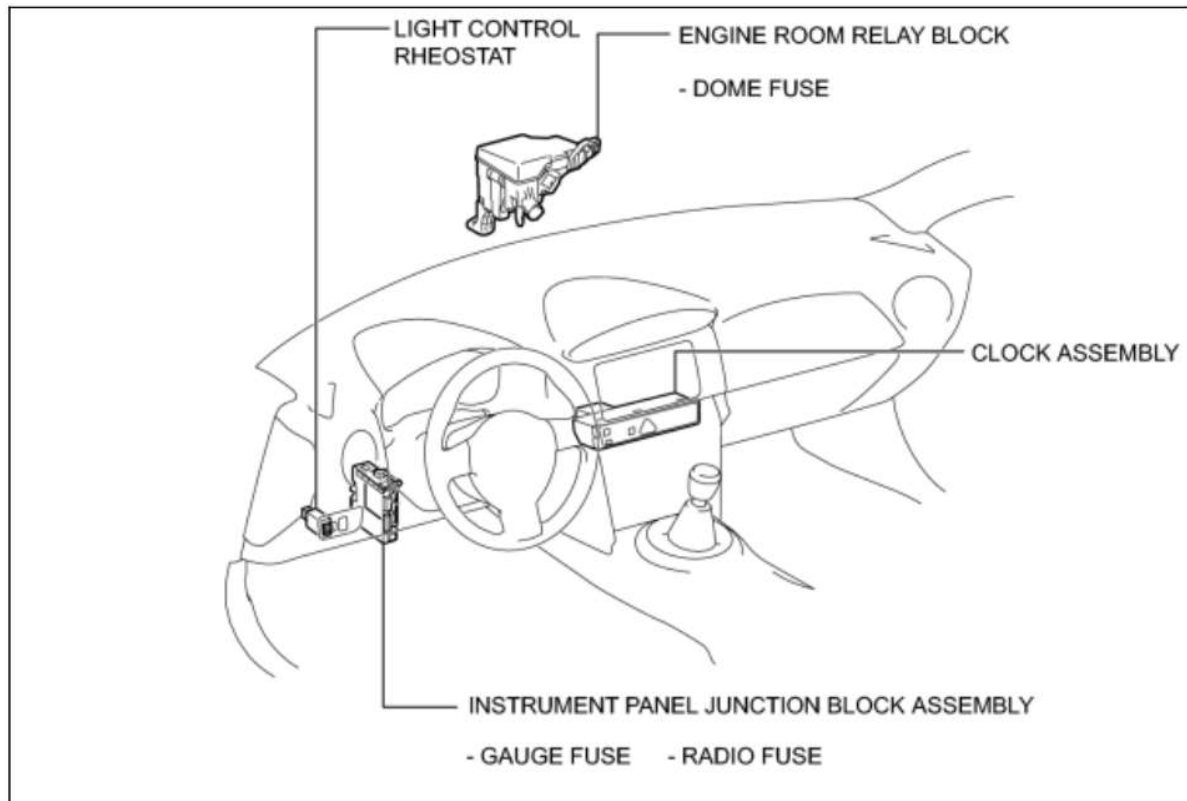
  **TOYOTA**

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Last Modified: 3-27-2012	6.4 R	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000002NJG00YX
Title: METER / GAUGE / DISPLAY: CLOCK SYSTEM: PARTS LOCATION (2013 FR-S)		

PARTS LOCATION

ILLUSTRATION



Last Modified: 3-27-2012	6.4 T	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000002NJI017X
Title: METER / GAUGE / DISPLAY: CLOCK SYSTEM: PROBLEM SYMPTOMS TABLE (2013 FR-S)		

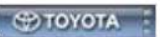
PROBLEM SYMPTOMS TABLE

HINT:

- Use the table below to help determine the cause of problem symptoms. If multiple suspected areas are listed, the potential causes of the symptoms are listed in order of probability in the "Suspected Area" column of the table. Check each symptom by checking the suspected areas in the order they are listed. Replace parts as necessary.
- Inspect the fuses and relays related to this system before inspecting the suspected areas below.

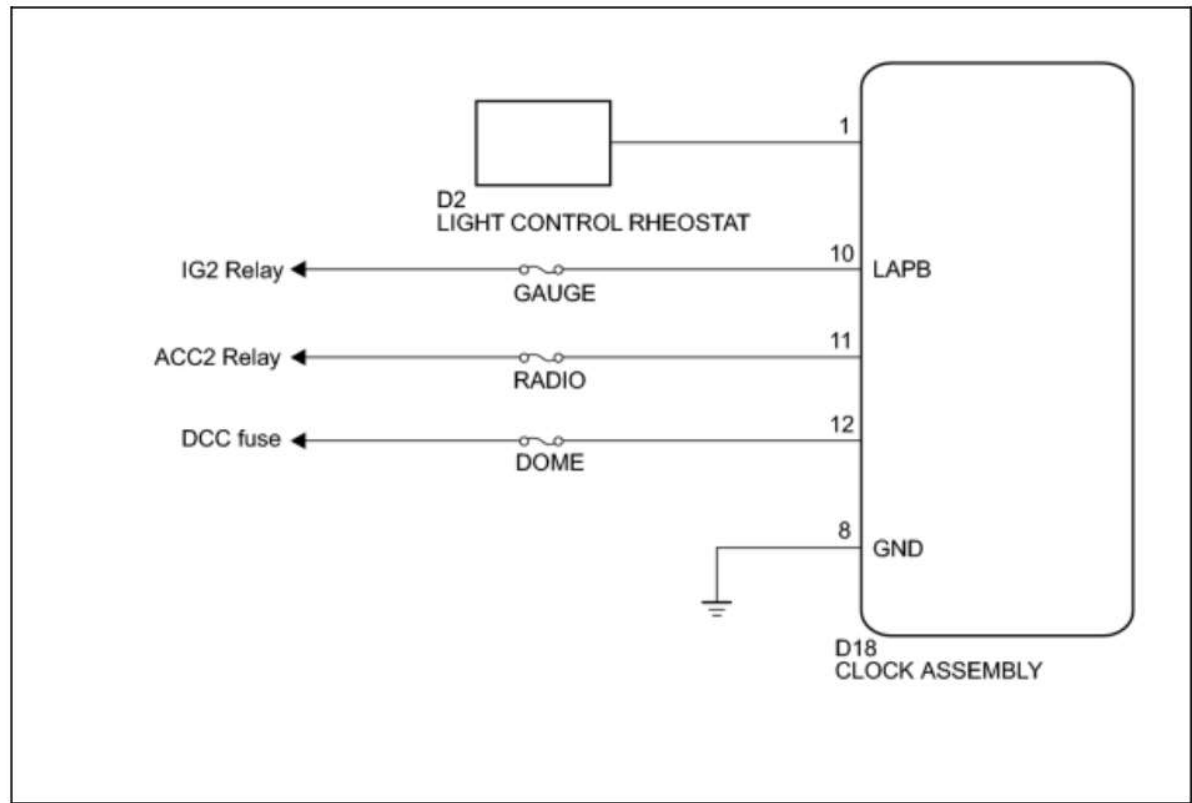
Clock System

SYMPTOM	SUSPECTED AREA	SEE PAGE
Clock is not displayed	Clock power source circuit	INFO
Clocks time is very incorrect	Clock loses or gains time	-
	Clock assembly	INFO
Clocks nighttime illumination does not operate	Perform data list (Outside Light)	INFO
	Operating Light Control Rheostat does not Change Light Brightness	INFO
	Harness or connector	-
	Combination meter assembly	INFO
	Clock assembly	INFO



Last Modified: 3-27-2012	6.4 U	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000002NJL015X
Title: METER / GAUGE / DISPLAY: CLOCK SYSTEM: SYSTEM DIAGRAM (2013 FR-S)		

SYSTEM DIAGRAM

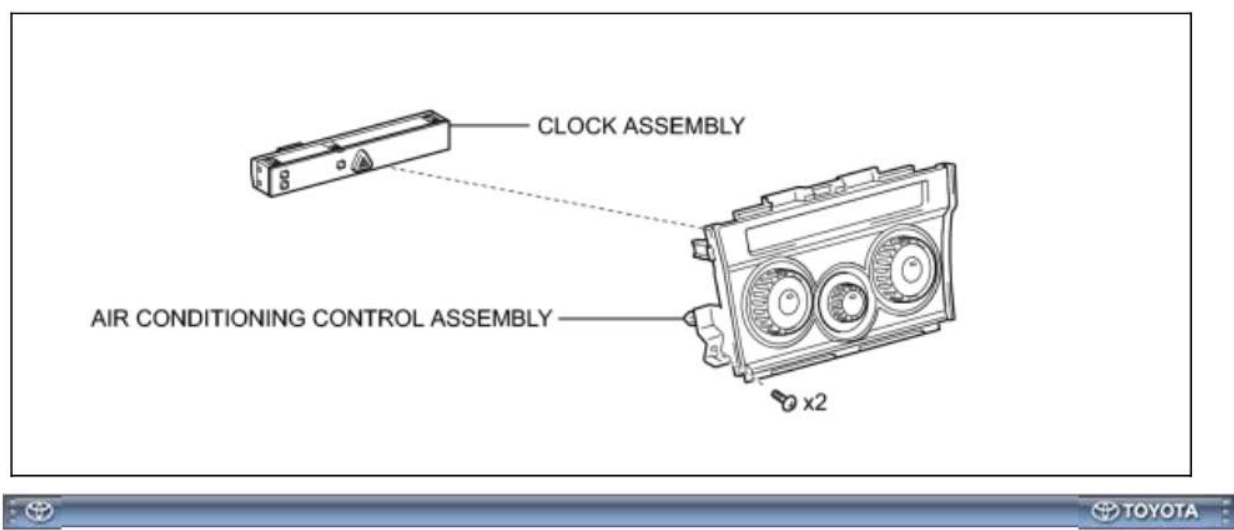


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Last Modified: 3-27-2012	6.4 K	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000004HHY003X
Title: METER / GAUGE / DISPLAY: CLOCK: COMPONENTS (2013 FR-S)		

COMPONENTS

ILLUSTRATION



Last Modified: 3-27-2012	6.4 A	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000004HHX004X
Title: METER / GAUGE / DISPLAY: CLOCK: INSTALLATION (2013 FR-S)		

INSTALLATION

1. INSTALL CLOCK ASSEMBLY

- (a) Engage the 4 claws to install the clock assembly.

2. INSTALL AIR CONDITIONING CONTROL ASSEMBLY



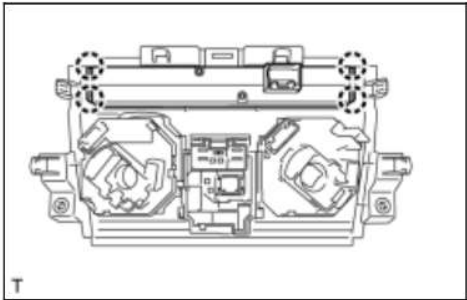
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Last Modified: 3-27-2012	6.4 A	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000004HHZ004X
Title: METER / GAUGE / DISPLAY: CLOCK: REMOVAL (2013 FR-S)		

REMOVAL

1. REMOVE AIR CONDITIONING CONTROL ASSEMBLY

INFO



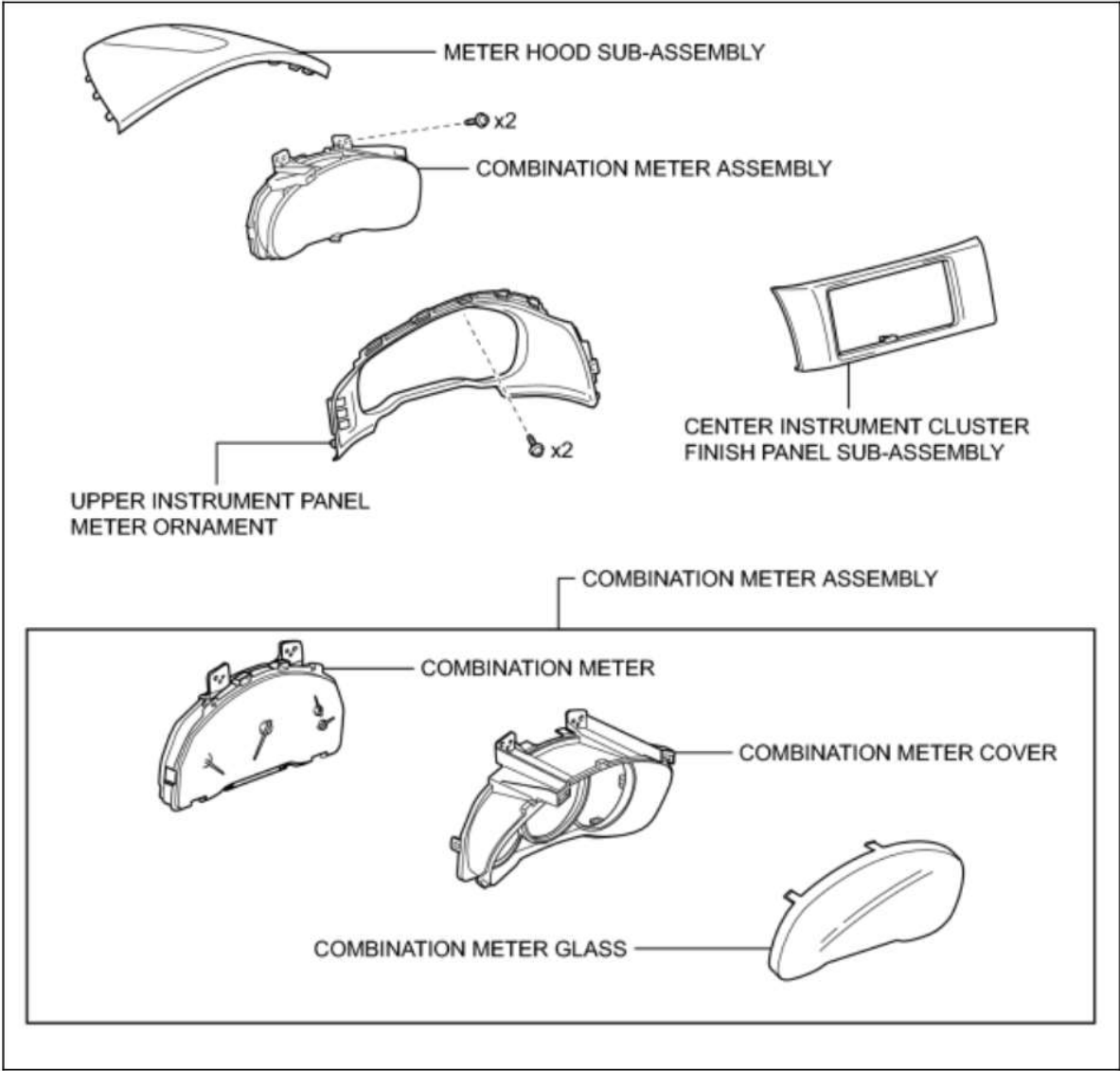
2. REMOVE CLOCK ASSEMBLY

- (a) Disengage the 4 claws and remove the clock assembly.

Last Modified: 3-27-2012	6.4 K	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000004HHV003X
Title: METER / GAUGE / DISPLAY: COMBINATION METER: COMPONENTS (2013 FR-S)		

COMPONENTS

ILLUSTRATION

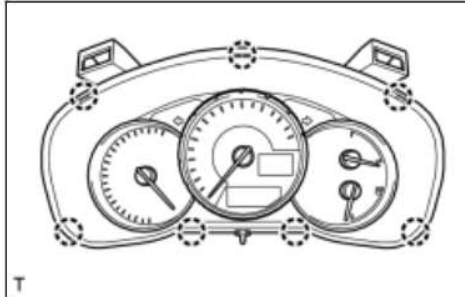


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Last Modified: 3-27-2012	6.4 A	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000004KXX003X
Title: METER / GAUGE / DISPLAY: COMBINATION METER: DISASSEMBLY (2013 FR-S)		

DISASSEMBLY

1. REMOVE COMBINATION METER GLASS

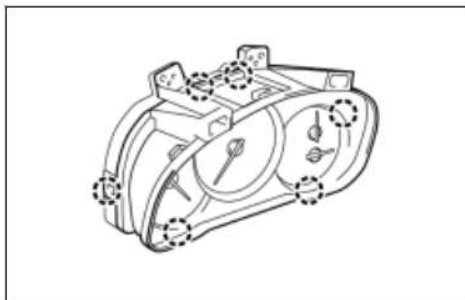


- (a) Disengage the 7 claws and remove the combination meter glass.

NOTICE:

- Do not touch the pointer and the dial plate when removing the combination meter glass and combination meter cover.
- Do not allow any dirt (fingerprints, grease, etc.) to adhere to the combination meter glass or meter display panel. If they are dirty, wipe them clean with a soft cloth.

2. REMOVE COMBINATION METER COVER



- (a) Disengage the 6 claws and remove the combination meter cover.

NOTICE:

Do not touch the pointer and the dial plate when removing the combination meter glass and combination meter cover.



Last Modified: 3-27-2012	6.4 A	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000004HHU004X
Title: METER / GAUGE / DISPLAY: COMBINATION METER: INSTALLATION (2013 FR-S)		

INSTALLATION

1. INSTALL COMBINATION METER ASSEMBLY

- (a) Connect the connector.
- (b) Engage the 2 clips to install the combination meter assembly.
- (c) Install the 2 screws.

2. INSTALL UPPER INSTRUMENT PANEL METER ORNAMENT INFO

3. INSTALL METER HOOD SUB-ASSEMBLY INFO

4. INSTALL CENTER INSTRUMENT CLUSTER FINISH PANEL SUB-ASSEMBLY INFO



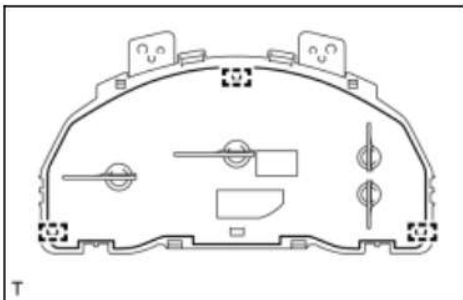
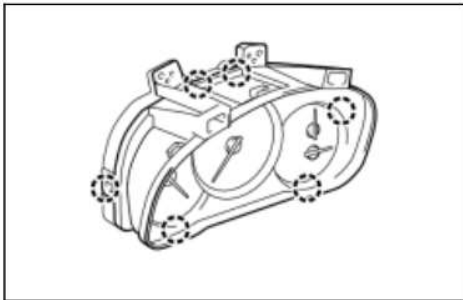
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Last Modified: 3-27-2012	6.4 A	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000004KXY003X
Title: METER / GAUGE / DISPLAY: COMBINATION METER: REASSEMBLY (2013 FR-S)		

REASSEMBLY

1. INSTALL COMBINATION METER COVER

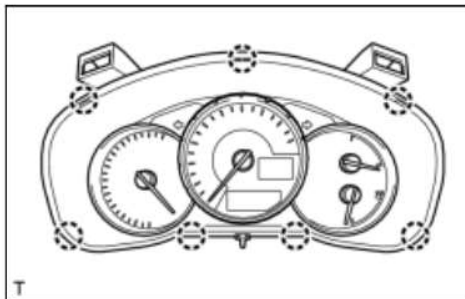
- (a) Engage the 6 claws to install the combination meter cover.



NOTICE:

Make sure that the meter dial plate is securely installed to the locating tabs when the combination meter cover is installed.

2. INSTALL COMBINATION METER GLASS



- (a) Engage the 7 claws to install the combination meter glass.

NOTICE:

Do not allow any dirt (fingerprints, grease, etc.) to adhere to the combination meter glass or meter display panel. If they are dirty, wipe them clean with a soft cloth.

Last Modified: 3-27-2012	6.4 A	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000004HHW004X
Title: METER / GAUGE / DISPLAY: COMBINATION METER: REMOVAL (2013 FR-S)		

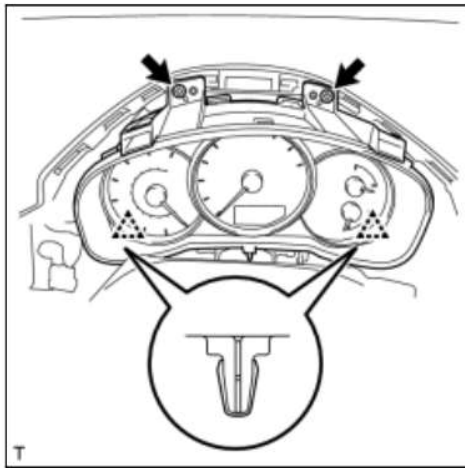
REMOVAL

1. REMOVE CENTER INSTRUMENT CLUSTER FINISH PANEL SUB-ASSEMBLY INFO

2. REMOVE METER HOOD SUB-ASSEMBLY INFO

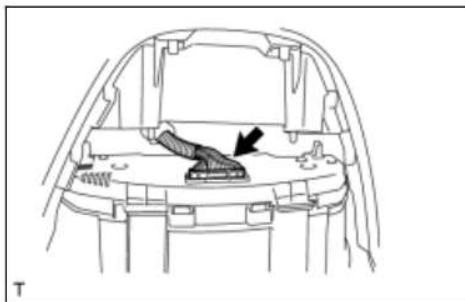
3. REMOVE UPPER INSTRUMENT PANEL METER ORNAMENT INFO

4. REMOVE COMBINATION METER ASSEMBLY



(a) Remove the 2 screws.

(b) Disengage the 2 clips.



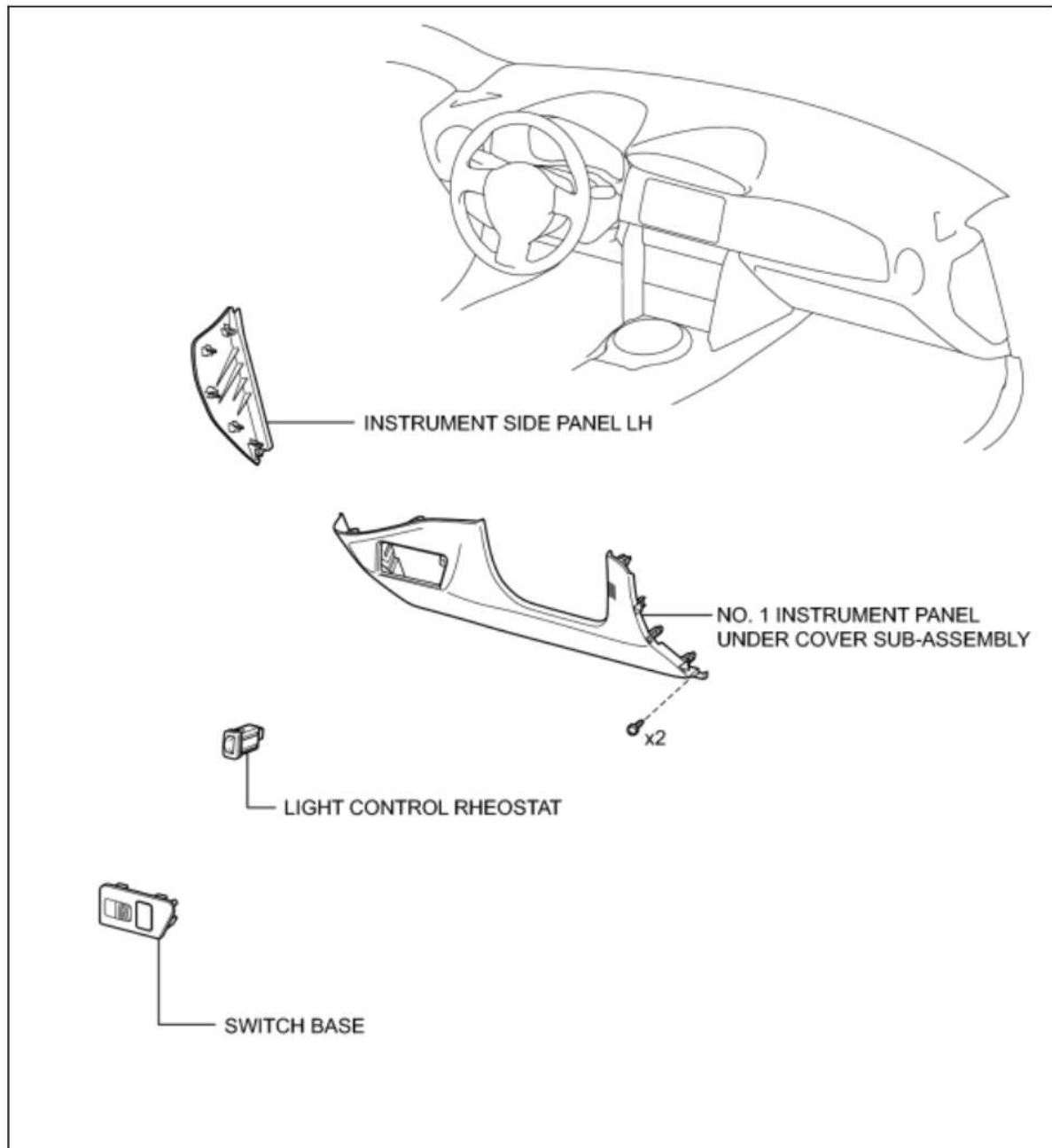
(c) Disconnect the connector and remove the combination meter assembly.



Last Modified: 3-27-2012	6.4 K	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM0000042TI00DX
Title: METER / GAUGE / DISPLAY: LIGHT CONTROL RHEOSTAT: COMPONENTS (2013 FR-S)		

COMPONENTS

ILLUSTRATION



Last Modified: 3-27-2012	6.4 A	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM0000042TH00BX
Title: METER / GAUGE / DISPLAY: LIGHT CONTROL RHEOSTAT: INSTALLATION (2013 FR-S)		

INSTALLATION

1. INSTALL LIGHT CONTROL RHEOSTAT

- (a) Engage the 2 claws to install the light control rheostat.

2. INSTALL SWITCH BASE

- (a) Engage the 4 claws to install the switch base.

3. INSTALL NO. 1 INSTRUMENT PANEL UNDER COVER SUB-ASSEMBLY

- (a) Connect each connector.
- (b) Engage the 4 claws.
- (c) Engage the 4 clips to install the No. 1 instrument panel under cover sub-assembly.
- (d) Install the 2 screws.

4. INSTALL INSTRUMENT SIDE PANEL LH

[INFO](#)



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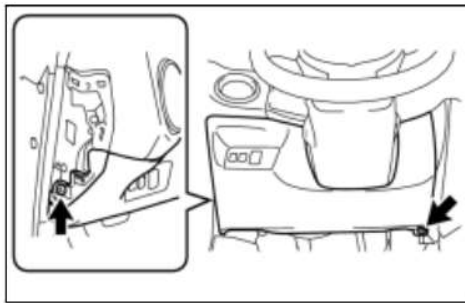
Last Modified: 3-27-2012	6.4 A	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM0000042TJ00BX
Title: METER / GAUGE / DISPLAY: LIGHT CONTROL RHEOSTAT: REMOVAL (2013 FR-S)		

REMOVAL

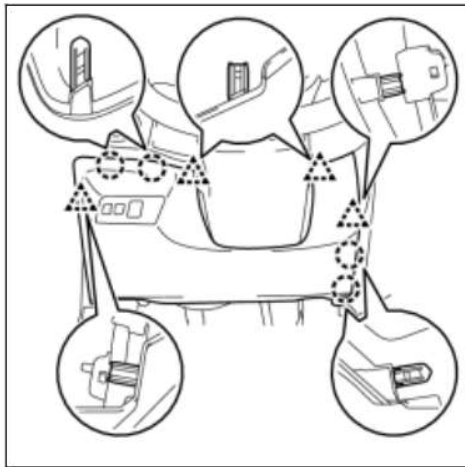
1. REMOVE INSTRUMENT SIDE PANEL LH

[INFO](#)

2. REMOVE NO. 1 INSTRUMENT PANEL UNDER COVER SUB-ASSEMBLY



(a) Remove the 2 screws.



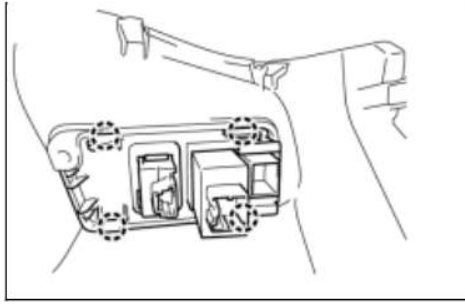
(b) Disengage the 4 clips.

(c) Disengage the 4 claws and separate the No. 1 instrument panel under cover sub-assembly.

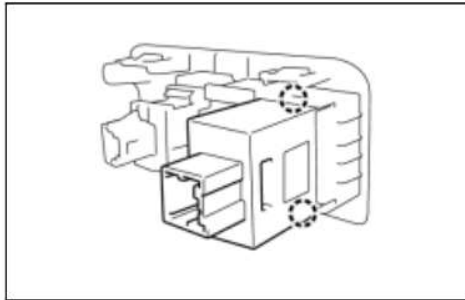
(d) Disconnect each connector and remove the No. 1 instrument panel under cover sub-assembly.

3. REMOVE SWITCH BASE

(a) Disengage the 4 claws and remove the switch base.



4. REMOVE LIGHT CONTROL RHEOSTAT



(a) Disengage the 2 claws to remove the light control rheostat.



Last Modified: 3-27-2012	6.4 C	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM0000032UZ000X
Title: METER / GAUGE / DISPLAY: METER / GAUGE SYSTEM: B1500: Fuel Sender Open Detected (2013 FR-S)		

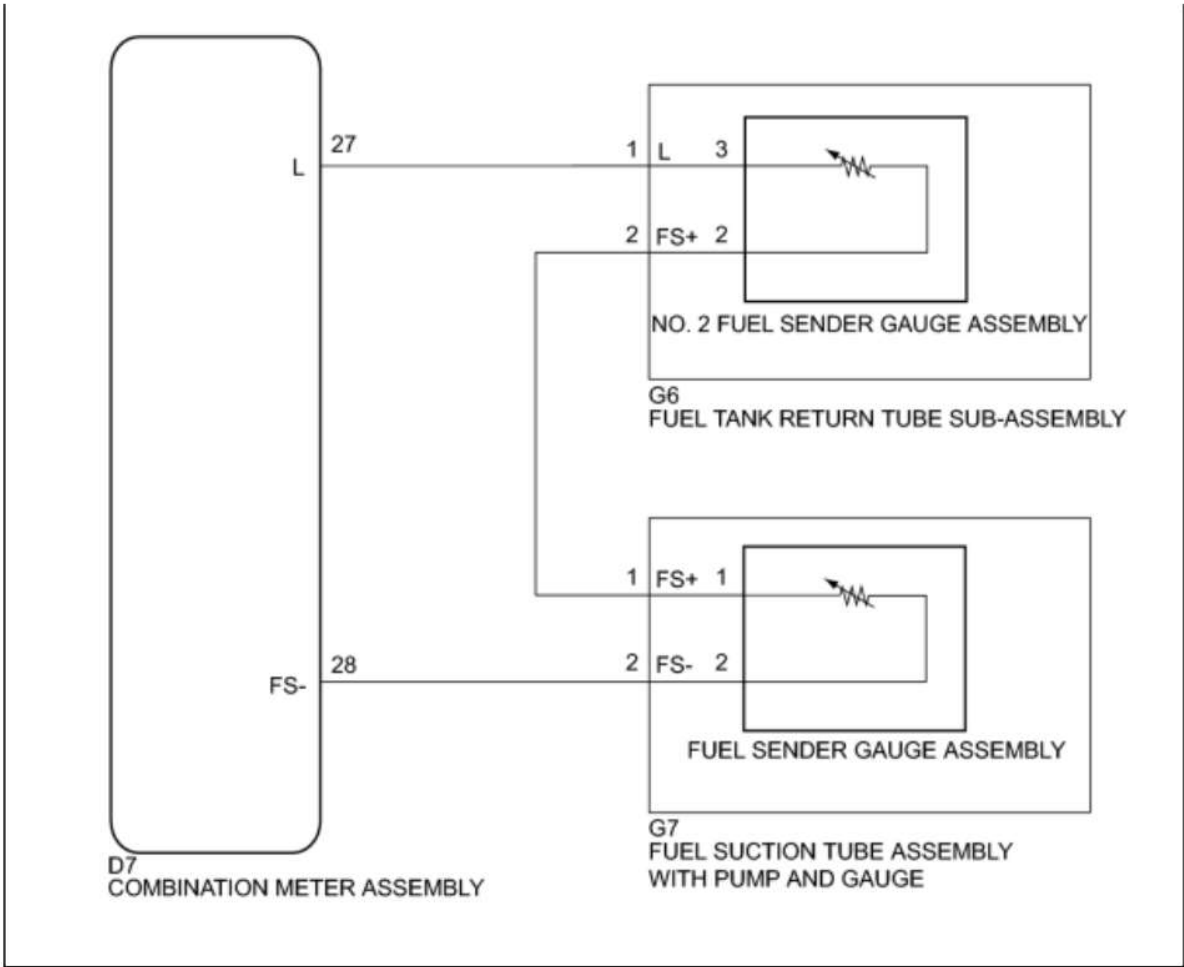
DTC	B1500	Fuel Sender Open Detected
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DESCRIPTION

This DTC is stored when the combination meter detects the fuel sender gauge malfunction.

DTC NO.	DTC DETECTION CONDITION	TROUBLE AREA
B1500	When combination meter detects fuel sender gauge malfunction	• Harness or connector • Combination meter assembly • Fuel sender gauge assembly • No. 2 fuel sender gauge assembly • Fuel suction tube assembly with pump and gauge • Fuel tank return tube sub-assembly

WIRING DIAGRAM



INSPECTION PROCEDURE

PROCEDURE

1.	READ VALUE USING TECHSTREAM (FUEL INPUT)
----	--

- (a) Connect the Techstream to the DLC3.
- (b) Turn the ignition switch to ON.
- (c) Turn the Techstream on.
- (d) Enter the following menus: Body Electrical / Combination Meter / Data List.
- (e) According to the display on the tester, read the Data List.

Combination Meter

ITEM	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
Fuel Input	Fuel sender gauge input Min.: 0 Max.: 127.5	Fuel sender input value	Unit: Liter

OK:

Fuel input signal displayed on the tester is approximately the same as the fuel receiver gauge indication.

- NG▶INSPECT FUEL SENDER GAUGE ASSEMBLY
- OK▶REPAIR OR REPLACE COMBINATION METER ASSEMBLY

2.INSPECT FUEL SENDER GAUGE ASSEMBLY

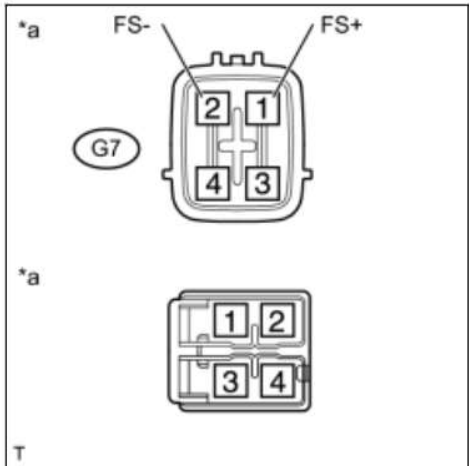
- (a) Remove the fuel sender gauge assembly INFO.
- (b) Inspect the fuel sender gauge assembly INFO.

- NG▶REPLACE FUEL SENDER GAUGE ASSEMBLY

OK

▼

3.INSPECT FUEL SUCTION TUBE ASSEMBLY WITH PUMP AND GAUGE



- (a) Remove the fuel suction tube assembly with pump and gauge INFO.
- (b) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTOR	CONDITION	SPECIFIED CONDITION
G7-1 (FS+) - 1	Always	Below 1 Ω
G7-2 (FS-) - 2	Always	Below 1 Ω

Text in Illustration

*a	Component without harness connected (Fuel Suction Tube Assembly with Pump and Gauge)
----	---

- NG▶REPLACE FUEL SUCTION TUBE ASSEMBLY WITH PUMP AND GAUGE

OK

▼

4. INSPECT NO. 2 FUEL SENDER GAUGE ASSEMBLY

- (a) Remove the No. 2 fuel sender gauge assembly

INFO

 .
- (b) Inspect the No. 2 fuel sender gauge assembly

INFO

 .

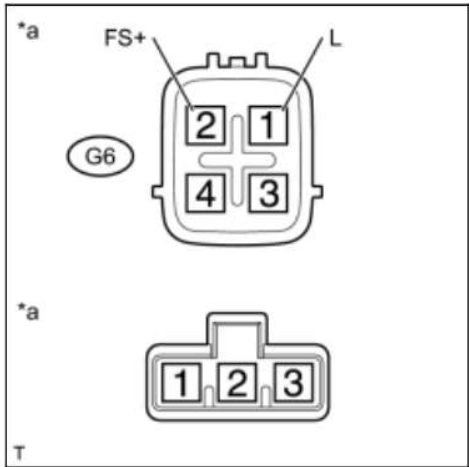
NG

▶ REPLACE NO. 2 FUEL SENDER GAUGE ASSEMBLY

OK

▼

5. INSPECT FUEL TANK RETURN TUBE SUB-ASSEMBLY



- (a) Remove the fuel tank return tube sub-assembly

INFO

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

Standard Resistance:

TESTER CONNECTOR	CONDITION	SPECIFIED CONDITION
G6-1 (L) - 3	Always	Below 1 Ω
G6-2 (FS+) - 2	Always	Below 1 Ω

Text in Illustration

*a	Component without harness connected (Fuel Tank Return Tube Sub-assembly)
----	---

NG

▶ REPLACE FUEL TANK RETURN TUBE SUB-ASSEMBLY

OK

▼

6. CHECK HARNESS AND CONNECTOR (COMBINATION METER ASSEMBLY - FUEL SUCTION TUBE ASSEMBLY WITH PUMP AND GAUGE)

- (a) Disconnect the D7 combination meter assembly connector.
- (b) Disconnect the G7 fuel suction tube assembly with pump and gauge connector.
- (c) Measure the resistance according to the value(s) in the table below.

Standard Resistance (Check for Open):

TESTER CONNECTOR	CONDITION	SPECIFIED CONDITION
D7-28 (FS-) - G7-2 (FS-)	Always	Below 1 Ω

Standard Resistance (Check for Short):

TESTER CONNECTOR	CONDITION	SPECIFIED CONDITION
D7-28 (FS-) or G7-2 (FS-) - Body ground	Always	10 k Ω or higher

NG  **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK


7. CHECK HARNESS AND CONNECTOR (FUEL SUCTION TUBE ASSEMBLY WITH PUMP AND GAUGE - FUEL TANK RETURN TUBE SUB-ASSEMBLY)

- (a) Disconnect the G7 fuel suction tube assembly with pump and gauge connector.
- (b) Disconnect the G6 fuel tank return tube sub-assembly connector.
- (c) Measure the resistance according to the value(s) in the table below.

Standard Resistance (Check for Open):

TESTER CONNECTOR	CONDITION	SPECIFIED CONDITION
D7-1 (FS+) - G6-2 (FS+)	Always	Below 1 Ω

Standard Resistance (Check for Short):

TESTER CONNECTOR	CONDITION	SPECIFIED CONDITION
D7-1 (FS+) or G6-2 (FS+) - Body ground	Always	10 k Ω or higher

NG  **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK**8.**
CHECK HARNESS AND CONNECTOR (COMBINATION METER ASSEMBLY - FUEL TANK RETURN TUBE SUB-ASSEMBLY)

- (a) Disconnect the D7 combination meter assembly connector.
- (b) Disconnect the G6 fuel tank return tube sub-assembly connector.
- (c) Measure the resistance according to the value(s) in the table below.

Standard Resistance (Check for Open):

TESTER CONNECTOR	CONDITION	SPECIFIED CONDITION
D7-27 (L) - G6-1 (L)	Always	Below 1 Ω

Standard Resistance (Check for Short):

TESTER CONNECTOR	CONDITION	SPECIFIED CONDITION
D7-27 (L) or G6-1 (L) - Body ground	Always	10 k Ω or higher

NG **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK **REPLACE COMBINATION METER ASSEMBLY**



Last Modified: 3-27-2012	6.4 C	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000002LJ403UX
Title: METER / GAUGE / DISPLAY: METER / GAUGE SYSTEM: B1509: Open in Ambient Temperature Sensor Circuit (2013 FR-S)		

DTC	B1509	Open in Ambient Temperature Sensor Circuit
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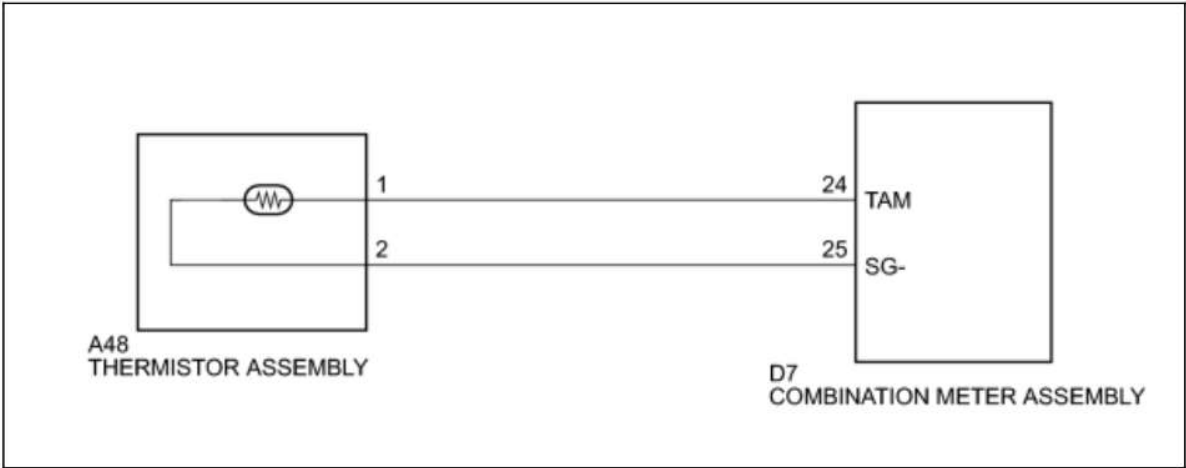
DESCRIPTION

The thermistor assembly is installed in the front part of the cooler condenser assembly to display the ambient temperature on the multi-information display in the combination meter assembly and to control the air conditioning auto mode. As the temperature decreases, the resistance increases. As the temperature increases, the resistance decreases.

The air conditioning amplifier assembly applies a voltage (5 V) to the thermistor assembly and reads the voltage changes as changes in the resistance of the thermistor assembly.

DTC NO.	DTC DETECTION CONDITION	TROUBLE AREA
B1509	An open or short in the thermistor assembly circuit.	• Thermistor assembly • Harness or connector • Combination meter assembly

WIRING DIAGRAM



INSPECTION PROCEDURE

PROCEDURE

1.	READ VALUE USING TECHSTREAM (AMBIENT TEMPERATURE SENSOR)
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- (a) Connect the Techstream to the DLC3.
- (b) Turn the ignition switch to ON.
- (c) Turn the Techstream on.
- (d) Enter the following menus: Body Electrical / Combination Meter / Data List.
- (e) According to the display on the Techstream, read the Data List.

Combination Meter

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
Ambient Temperature	Thermistor assembly / Min: -40.0°C (-40.0°F) Max: 87.5°C (189.5°F)	Actual ambient temperature displayed	Open in the circuit: -40.0°C (-40.0°F) Short in the circuit: 87.5°C (189.5°F)

OK:

The display is as specified in the normal condition column.

Result

RESULT	PROCEED TO
OK (When troubleshooting according to the DTC)	A
OK (When troubleshooting according to problem symptoms table)	B
NG	C

B ► PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE

C ► INSPECT THERMISTOR ASSEMBLY

A

2.	CHECK FOR DTC
-----------	----------------------

(a) Clear the DTCs .

(b) Check for DTCs .

OK:

DTC B1509 is not output

NG ► REPLACE COMBINATION METER

ASSEMBLY**OK** ► **END****3. INSPECT THERMISTOR ASSEMBLY**

- (a) Remove the thermistor assembly **INFO** .
- (b) Inspect the thermistor assembly **INFO** .

NG ► **REPLACE THERMISTOR ASSEMBLY****OK**
▼**4. CHECK HARNESS AND CONNECTOR (THERMISTOR ASSEMBLY - COMBINATION METER ASSEMBLY)**

- (a) Disconnect the A48 thermistor assembly connector.
- (b) Disconnect the D7 combination meter assembly connector.
- (c) Measure the resistance according to the value(s) in the table below.

Standard Resistance (Check for Open):

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
A48-1 - D7-24 (TAM)	Always	Below 1 Ω
A48-2 - D7-25 (SG-)	Always	Below 1 Ω

Standard Resistance (Check for Short):

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
A48-1 - Body ground	Always	10 k Ω or higher
A48-2 - Body ground	Always	10 k Ω or higher

NG ► **REPAIR OR REPLACE HARNESS OR CONNECTOR****OK** ► **REPLACE COMBINATION METER ASSEMBLY**

Last Modified: 3-27-2012	6.4 A	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000004NOP00DX
Title: METER / GAUGE / DISPLAY: METER / GAUGE SYSTEM: CUSTOMIZE PARAMETERS (2013 FR-S)		

CUSTOMIZE PARAMETERS

1. CUSTOMIZE METER / GAUGE SYSTEM

(a) Customizing with the Techstream

- (1) Connect the Techstream to the DLC3.
- (2) Turn the ignition switch to ON.
- (3) Turn the Techstream on.
- (4) Enter the following menus: Customize Setting / Combination Meter / Warning.
- (5) Select the setting by referring to the table below.

NOTICE:

Be sure to record the current value before customizing.

Warning

TESTER DISPLAY	DEFAULT	CONTENT	SETTING	RELEVANT ECU
Key Remind Sound	NORMAL	Function to change the frequency of the key reminder buzzer.	NORMAL, FAST or SLOW	Combination meter assembly
Tail Remind Buzzer	ON	Function to change the Tail Remind Buzzer.	ON or OFF	Combination meter assembly
Driver Side Seatbelt Warning Buzzer*	ON	Function to turn on/off the seat belt warning buzzer	ON or OFF	Combination meter assembly
Front Passenger Side Seatbelt Warning Buzzer*	ON	Function to change the seat-belt warning buzzer.	ON or OFF	Combination meter assembly

*: This setting is only valid for the buzzer which sounds at 20 km/h (12 mph) or more

- (6) Connect the Techstream to the DLC3.
- (7) Turn the ignition switch to ON.
- (8) Turn the Techstream on.
- (9) Enter the following menus: Customize Setting / Combination Meter / Air Conditioner.
- (10) Select the setting by referring to the table below.

NOTICE:

Be sure to record the current value before customizing.

Air Conditioner

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TESTER DISPLAY	DEFAULT	CONTENT	SETTING	RELEVANT ECU
Ambient Temperature Adjustment	0C (0F)	Function to change the display temperature to match the actual temperature.	+3C (+5.4F) +2C (+3.6F), +1C (+1.8F), 0C (0F), -1C (-1.8F), - 2C (-3.6F) or 3C (-5.4F)	Combination meter assembly



Last Modified: 3-27-2012	6.4 U	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000001F8Q01DX
Title: METER / GAUGE / DISPLAY: METER / GAUGE SYSTEM: DATA LIST / ACTIVE TEST (2013 FR-S)		

DATA LIST / ACTIVE TEST

1. DATA LIST

HINT:

Using the Techstream to read the Data List allows the values or states of switches, sensors, actuators and other items to be read without removing any parts. This non-intrusive inspection can be very useful because intermittent conditions or signals may be discovered before parts or wiring is disturbed. Reading the Data List information early in troubleshooting is one way to save diagnostic time.

- Connect the Techstream to the DLC3.
- Turn the ignition switch to ON.
- Turn the Techstream on.
- Enter the following menus: Body Electrical / Combination Meter / Data List.
- According to the display on the tester, read the Data List.

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
ODO/TRIP Change SW	ODO/TRIP change switch ON or OFF	ON: ODO/TRIP switch pushed OFF: ODO/TRIP switch not pushed	-
Tail Cancel SW	Light control rheostat switch (cancel switch) ON or OFF	ON: Light control rheostat switch (cancel switch) → TAIL OFF: Light control rheostat switch (cancel switch) → OFF	-
P-Seatbelt Buckle SW	Buckle switch (Front passenger side) ON or OFF	ON: Front passenger side seat belt is fastened OFF: Front passenger side seat belt is unfastened	-
Multi Display Select Switch	Multi Display Select Switch ON or OFF	ON: DISP switch pushed OFF: DISP switch not pushed	-
+B Voltage Value	+B voltage Min.: 0 Max.: 25.5	Below 1 to 14	Unit: V
Vehicle Speed Meter	Vehicle speed Min.: 0 (0) Max.: 255 (158)	Approximately same as actual vehicle speed (When vehicle is being driven)	Unit: km/h (mph)
Engine Rpm	Engine speed Min.: 0 Max.: 12750	Approximately same as actual engine speed (when engine is running)	Unit: rpm
	Engine coolant		

Coolant Temperature	temperature Min.: 0 Max.: 127.5	After warming up: 80 to 108 (176 to 226)	Unit: °C (°F)
Fuel Input	Fuel sender gauge input Min.: 0 Max.: 127.5	Fuel sender input value	Unit: Liter
Ambient Temperature	Ambient temperature Min.: -40 (-40) Max.: 87.5 (189.5)	Same as outside temperature	Unit: °C (°F)
Rheostat value	Light control rheostat switch input Min.: 0 Max.: 100	Displays rheostat volume figure 0 to 100	Unit: %
Quantity of Outside Light	Light control rheostat switch output Min.: 0 Max.: 100	Displays rheostat volume figure 0 to 100	Unit: %
Key Remind Sound	Key remind sound FAST, NORMAL or SLOW	Display key reminder buzzer speed setting	-
Tail Remind Buzzer	Tail remind buzzer ON or OFF	ON: Tail remind buzzer ON OFF: Tail remind buzzer OFF	-
Driver Side Seatbelt Warning Buzzer	Driver seat belt warning buzzer ON or OFF	ON: Driver side seat belt warning buzzer ON OFF: Driver side seat belt warning buzzer OFF	-
P-Seatbelt Warning Buzzer	Front passenger seat belt warning buzzer ON or OFF	ON: Front passenger side seat belt warning buzzer ON OFF: Front passenger side seat belt warning buzzer OFF	-
Number of Trouble Code	The DTC number which is currently output	-	-

HINT:

Items for which there are no settings do not appear on the Techstream, or do not operate.

2. PERFORM ACTIVE TEST**HINT:**

Using the Techstream to perform Active Tests allows relays, VSVs, actuators and other items to be operated without removing any parts. This non-intrusive functional inspection can be very useful because intermittent operation may be discovered before parts or wiring is disturbed. Performing Active Tests early in troubleshooting is one way to save diagnostic time. Data List information can be displayed while performing Active Tests.

- Connect the Techstream to the DLC3.
- Turn the ignition switch to ON.
- Turn the Techstream on.

(d) Enter the following menus: Body Electrical / Combination Meter / Active Test.

(e) According to the display on the tester, perform the Active Test.

Combination Meter

TESTER DISPLAY	TEST PART	CONTROL RANGE	DIAGNOSTIC NOTE
Speed Meter Operation	Speedometer	0, 40, 80, 120, 160, 200, 240 km/h	-
Tachometer Operation	Tachometer	0, 1000, 2000, 3000, 4000, 5000, 6000, 7000 rpm	-
Fuel Meter Operation	Fuel gauge	EMPTY, 1/2, FULL	-
A/T Indicator Operation 1	A/T shift indicator light	P, R, N, D, 4 (M), 3 (M), 2, L	-
A/T Indicator Operation 2	A/T shift indicator light	5, 6, M	-
A/T Indicator Operation 3	A/T shift indicator light	D	-
Meter Display 1	Drive monitor display	6, 5, 4, 3, 2, 1, 0, All	Vehicle is stopped and engine is idling
Meter Display 2	Drive monitor display	9, 8, 7	Vehicle is stopped and engine is idling
Indicat. Lamp Beam	Hi-beam indicator light	OFF/ON	Vehicle is stopped and engine is idling
Indicat. Lamp Fr FOG	Front fog indicator light	OFF/ON	Vehicle is stopped and engine is idling
Indicat. Lamp Rr FOG	Rear fog indicator light	OFF/ON	Vehicle is stopped and engine is idling
Indicat. Lamp Airbag	Airbag warning light	OFF/ON	Vehicle is stopped and engine is idling
Driver Side Seat Belt	Driver side seat belt warning light	OFF/ON	Vehicle is stopped and engine is idling
Front Passenger Side Seat Belt	Front passenger seat belt warning light	OFF/ON	Vehicle is stopped and engine is idling
Indicat. Lamp Doors All Open	Door warning light	OFF/ON	Vehicle is stopped and engine is idling
Indicat.Lamp Fuel	Low fuel warning light	OFF/ON	Vehicle is stopped and engine is idling
Indicat. Lamp ABS	ABS warning light	OFF/ON	Vehicle is stopped and engine is idling
Indicat. Lamp Slip	SLIP indicator light	OFF/ON	Vehicle is stopped and engine is idling
VSC TRC Indicator	TRC OFF/TRAC OFF indicator light	OFF/ON	Vehicle is stopped and engine is idling
Indicat. Tire Pressure Warning System	TPMS warning light	OFF/ON	Vehicle is stopped and engine is idling

Indicat. Lamp Brake	Brake warning light	OFF/ON	Vehicle is stopped and engine is idling
SPORT Indicator	Sport indicator light	OFF/ON	Vehicle is stopped and engine is idling
Indicat. Lamp ECT SNOW	Snow indicator light	OFF/ON	Vehicle is stopped and engine is idling
A/T Oil Temperature Operation	A/T oil temperature warning light	OFF/ON	Vehicle is stopped and engine is idling
Indicat. EPS	EPS warning light	OFF/ON	Vehicle is stopped and engine is idling
Indicat. Lamp Cruise	Cruise indicator light (green)	OFF/ON	Vehicle is stopped and engine is idling
Indicat. SIL (Up)	Shift up indicator light	OFF/ON	Vehicle is stopped and engine is idling
Indicat. SIL (Down)	Shift down indicator light	OFF/ON	Vehicle is stopped and engine is idling
Indicat. SET	SET indicator light	OFF/ON	Vehicle is stopped and engine is idling
Indicat. VSC OFF	VSC OFF indicator light	OFF/ON	Vehicle is stopped and engine is idling
Cruise Warning	Cruise warning light (yellow)	OFF/ON	Vehicle is stopped and engine is idling
Smart System Indicator	Smart system indicator light (green)	OFF/ON	Vehicle is stopped and engine is idling
Smart System Warning	Smart system warning light (yellow)	OFF/ON	Vehicle is stopped and engine is idling
Check Engine Warning	Check engine warning light	OFF/ON	Vehicle is stopped and engine is idling
Water Temperature Meter Operation	Water temperature gauge	LOW, NORMAL, HIGH	Vehicle is stopped and engine is idling

HINT:

- Items for which there are no settings do not appear on the Techstream, or do not operate.
- Telltales for which there are no settings do not operate.
- When not functioning normally, there may be a combination meter assembly malfunction.



Last Modified: 3-27-2012	6.4 S	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000001O81015X
Title: METER / GAUGE / DISPLAY: METER / GAUGE SYSTEM: DIAGNOSTIC TROUBLE CODE CHART (2013 FR-S)		

DIAGNOSTIC TROUBLE CODE CHART

DTC CODE	DETECTION ITEM	SEE PAGE
B1500	Fuel Sender Open Detected	INFO
B1509	Open in Ambient Temperature Sensor Circuit	INFO
U0073	Control Module Communication Bus "A" Off	INFO
U0100	Lost Communication with ECM / PCM "A"	INFO
U0131	Lost Communication with Power Steering Control Module	INFO
U0122	Lost Communication with Vehicle Dynamics Control Module	INFO
U0140	Lost Communication with Body Control Module	INFO
U0151	Lost Communication with Restraints Control Module	INFO



Last Modified: 3-27-2012	6.4 D	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000001Q77012X
Title: METER / GAUGE / DISPLAY: METER / GAUGE SYSTEM: DTC CHECK / CLEAR (2013 FR-S)		

DTC CHECK / CLEAR

1. CHECK DTC

- (a) Connect the Techstream to the DLC3.
- (b) Turn the ignition switch to ON.
- (c) Turn the Techstream on.
- (d) Enter the following menus: Body Electrical / Combination Meter / DTC.
- (e) Check DTCs and then write them down.

HINT:

Refer to the Techstream operator's manual for further details.

- (f) Confirm the details of the DTCs.

2. CLEAR DTC

- (a) Connect the Techstream to the DLC3.
- (b) Turn the ignition switch to ON (do not start the engine).
- (c) Turn the Techstream on.
- (d) Enter the following menus: Body Electrical / Combination Meter / DTC / Clear.

HINT:

Refer to the Techstream operator's manual for further details.

- (e) Clear DTCs by pressing the YES button on the tester.

HINT:

Refer to the Techstream operator's manual for further details.



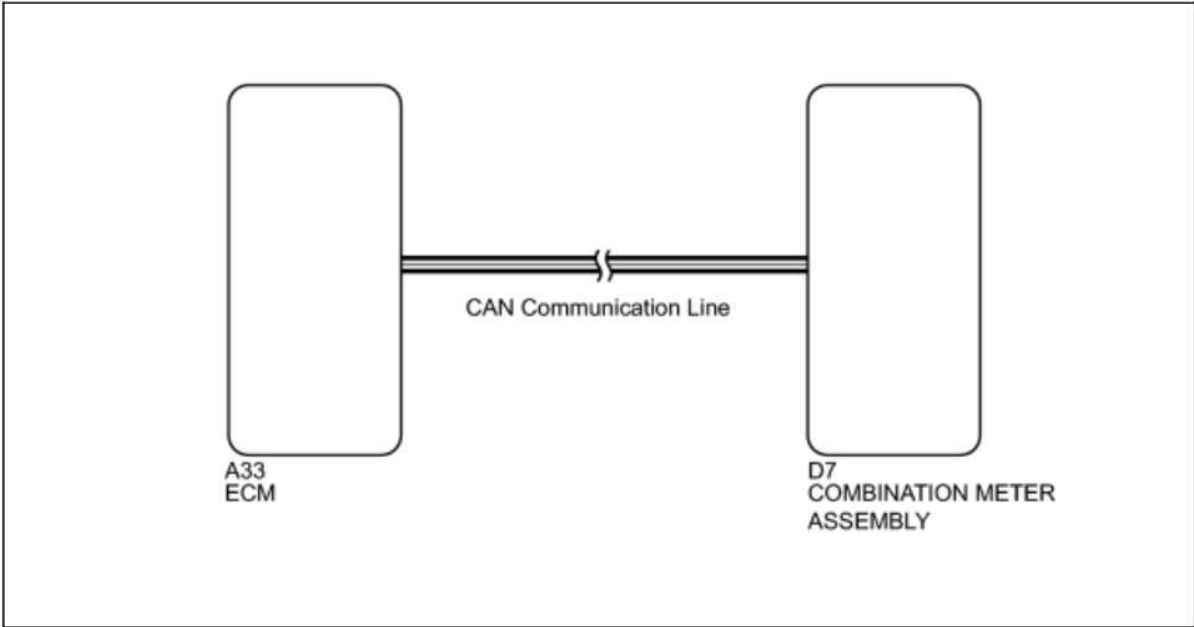
Last Modified: 3-27-2012	6.4 J	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000001YO001TX
Title: METER / GAUGE / DISPLAY: METER / GAUGE SYSTEM: Engine Coolant Temperature Receiver Gauge Malfunction (2013 FR-S)		

Engine Coolant Temperature Receiver Gauge Malfunction

DESCRIPTION

The combination meter assembly controls the engine coolant temperature receiver gauge in accordance with the engine coolant temperature sensor signals from the ECM through the CAN communication system.

WIRING DIAGRAM



INSPECTION PROCEDURE

PROCEDURE

1.	CHECK CAN COMMUNICATION SYSTEM
----	--------------------------------

(a) Check if CAN communication DTCs are output INFO .

Result

RESULT	PROCEED TO
DTCs are not output	A
DTCs are output	B

B ► GO TO CAN COMMUNICATION SYSTEM**A**

2.	PERFORM ACTIVE TEST USING TECHSTREAM (WATER TEMPERATURE METER OPERATION)
-----------	---

- (a) Connect the Techstream to the DLC3.
- (b) Turn the ignition switch to ON.
- (c) Turn the Techstream on.
- (d) Enter the following menus: Body Electrical / Combination Meter / Active Test.
- (e) According to the display on the tester, perform the Active Test.

Combination Meter

TESTER DISPLAY	TEST PART	CONTROL RANGE	DIAGNOSTIC NOTE
Water Temperature Meter Operation	Water temperature gauge	LOW, NORMAL, HIGH	Vehicle is stopped and engine is idling

OK:

The value selected during Active Test is displayed.

NG ► REPLACE COMBINATION METER ASSEMBLY**OK**

3.	READ VALUE USING TECHSTREAM (COOLANT TEMPERATURE)
-----------	--

- (a) Connect the Techstream to the DLC3.
- (b) Turn the ignition switch to ON.
- (c) Turn the Techstream on.
- (d) Enter the following menus: Body Electrical / Combination Meter / Data List.
- (e) According to the display on the tester, read the Data List.

Combination Meter

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
Coolant Temperature	Engine coolant temperature Min.: 0 (0) Max.: 127.5 (261.5)	After warming up: 80 to 108 (176 to 226)	Unit: °C (°F)

OK:

The vehicle's coolant temperature and tester value are the same.

NG ► **REPLACE COMBINATION METER ASSEMBLY**

OK



4. CHECK SFI SYSTEM

(a) Check if the SFI system outputs DTCs **INFO** .

Result

RESULT	PROCEED TO
DTCs are not output	A
DTCs are output	B

B ► **GO TO SFI SYSTEM**

A



5. READ VALUE USING TECHSTREAM (COOLANT TEMP)

- (a) Connect the Techstream to the DLC3.
- (b) Turn the ignition switch to ON.
- (c) Turn the Techstream on.
- (d) Enter the following menus: Powertrain / Engine and ECT / Data List.
- (e) According to the display on the tester, read the Data List.

Engine and ECT

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
Coolant Temp	Coolant temperature Min.: -40 (-40) Max.: 215 (419)	After warming up: 75 to 100 (167 to 212)	Unit: °C (°F)

OK:
The vehicle's coolant temperature and tester value are the same.

B ► **GO TO SFI SYSTEM**

A
▼

6.

REPLACE COMBINATION METER ASSEMBLY

(a) Replace the combination meter assembly with a new or a normal one INFO .

NG ► **REPLACE ECM**

OK ► **END**



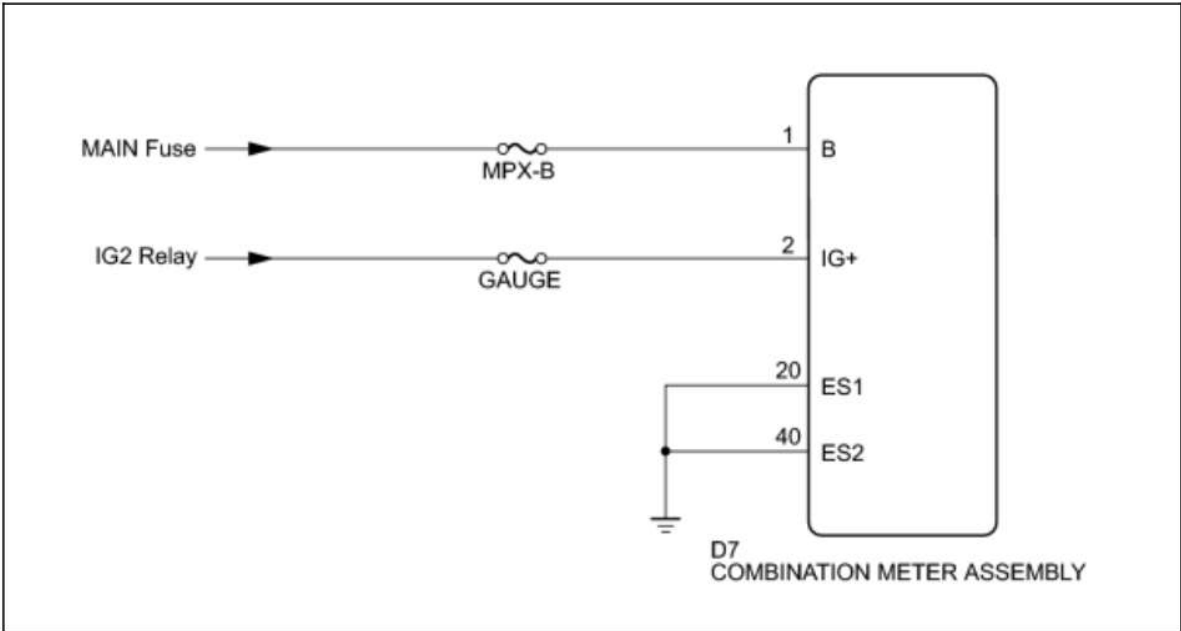
Last Modified: 3-27-2012	6.4 J	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000001XSZ017X
Title: METER / GAUGE / DISPLAY: METER / GAUGE SYSTEM: Entire Combination Meter does not Operate (2013 FR-S)		

Entire Combination Meter does not Operate

DESCRIPTION

This circuit is the power source circuit for the combination meter assembly.

WIRING DIAGRAM

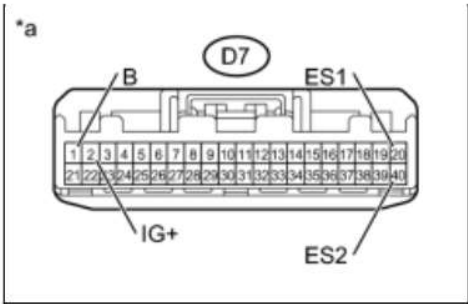


INSPECTION PROCEDURE

NOTICE:
Inspect the fuses for circuits related to this system before performing the following inspection procedure.

PROCEDURE

1.	CHECK HARNESS AND CONNECTOR (COMBINATION METER ASSEMBLY - BATTERY AND BODY GROUND)
----	--



(a) Disconnect the D7 combination meter assembly connector.

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

Standard Voltage:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
D7-1 (B) - Body ground	Always	11 to 14 V
D7-2 (IG+) - Body ground	Ignition switch ON	11 to 14 V

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

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
D7-20 (ES1) - Body ground	Always	Below 1 Ω
D7-40 (ES2) - Body ground	Always	Below 1 Ω

Text in Illustration

*a	Front view of wire harness connector (to Combination Meter Assembly)
----	---

(d) Reconnect the D7 combination meter assembly connector.

NG ► REPAIR OR REPLACE HARNESS OR CONNECTOR

OK ► REPLACE COMBINATION METER ASSEMBLY



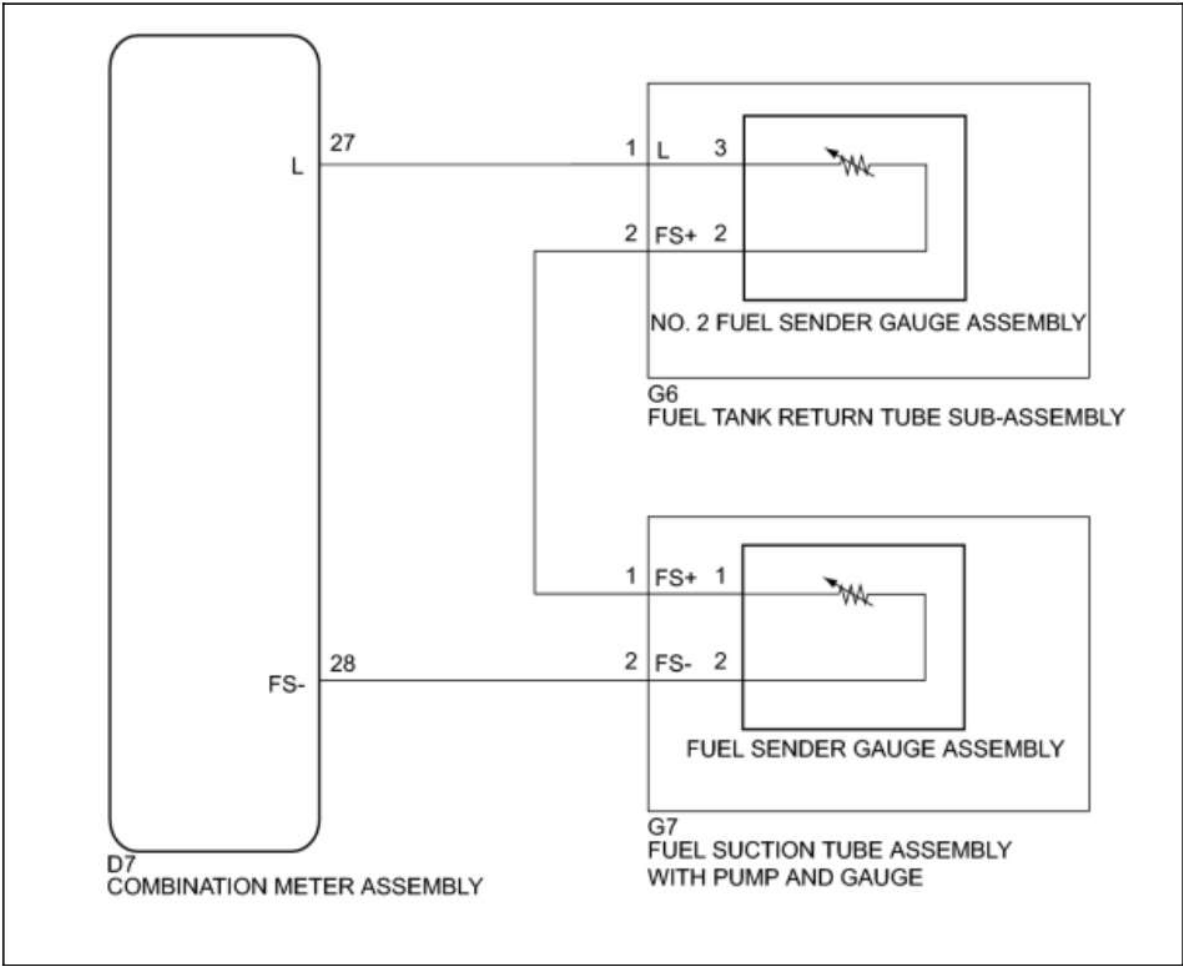
Last Modified: 3-27-2012	6.4 J	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000001F8K01IX
Title: METER / GAUGE / DISPLAY: METER / GAUGE SYSTEM: Fuel Gauge Malfunction (2013 FR-S)		

Fuel Gauge Malfunction

DESCRIPTION

The combination meter assembly controls the fuel receiver gauge in accordance with the resistance of the fuel sender gauge, which varies depending on the amount of fuel remaining in the fuel tank.

WIRING DIAGRAM



INSPECTION PROCEDURE

PROCEDURE

1.	CONFIRM DTC OUTPUT
----	--------------------

(a) Check DTC **INFO** .

Result

RESULT	PROCEED TO
DTC B1500 is not output	A
DTC B1500 is output	B

B ► **GO TO DIAGNOSTIC TROUBLE CODE CHART**

A



2. PERFORM ACTIVE TEST USING TECHSTREAM (FUEL METER OPERATION)

- (a) Connect the Techstream to the DLC3.
- (b) Turn the ignition switch to ON.
- (c) Turn the Techstream on.
- (d) Enter the following menus: Body Electrical / Combination Meter / Active Test.
- (e) According to the display on the tester, perform the Active Test.

Combination Meter

TESTER DISPLAY	TEST PART	CONTROL RANGE	DIAGNOSTIC NOTE
Fuel Meter Operation	Fuel gauge	EMPTY, 1/2, FULL	-

NG ► **REPLACE COMBINATION METER ASSEMBLY**

OK



3. READ VALUE USING TECHSTREAM (FUEL INPUT) **INFO**

NG ► **INSPECT FUEL SENDER GAUGE ASSEMBLY**

OK ► **REPLACE COMBINATION METER ASSEMBLY**

4.	INSPECT FUEL SENDER GAUGE ASSEMBLY	INFO
----	------------------------------------	------

B ► REPLACE FUEL SENDER GAUGE ASSEMBLY

A
▼

5.	INSPECT FUEL SUCTION TUBE ASSEMBLY WITH PUMP AND GAUGE	INFO
----	--	------

B ► REPLACE FUEL SUCTION TUBE ASSEMBLY WITH PUMP AND GAUGE

A
▼

6.	REPLACE NO. 2 FUEL SENDER GAUGE ASSEMBLY	INFO
----	--	------

B ► REPLACE NO. 2 FUEL SENDER GAUGE ASSEMBLY

A
▼

7.	REPLACE FUEL TANK RETURN TUBE SUB-ASSEMBLY	INFO
----	--	------

B ► REPLACE FUEL TANK RETURN TUBE SUB-ASSEMBLY

A
▼

--	--	--

8.

CHECK HARNESS AND CONNECTOR (COMBINATION METER ASSEMBLY - FUEL SUCTION TUBE ASSEMBLY WITH PUMP AND GAUGE) [INFO](#)**NG**  **REPAIR OR REPLACE HARNESS OR CONNECTOR****OK**

9.

CHECK HARNESS AND CONNECTOR (FUEL SUCTION TUBE ASSEMBLY WITH PUMP AND GAUGE - FUEL TANK RETURN TUBE SUB-ASSEMBLY) [INFO](#)**NG**  **REPAIR OR REPLACE HARNESS OR CONNECTOR****OK**

10.

CHECK HARNESS AND CONNECTOR (COMBINATION METER ASSEMBLY - FUEL TANK RETURN TUBE SUB-ASSEMBLY) [INFO](#)**NG**  **REPAIR OR REPLACE HARNESS OR CONNECTOR****OK**  **REPLACE COMBINATION METER ASSEMBLY**

Last Modified: 3-27-2012	6.4 D	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000001F8D01HX
Title: METER / GAUGE / DISPLAY: METER / GAUGE SYSTEM: HOW TO PROCEED WITH TROUBLESHOOTING (2013 FR-S)		

HOW TO PROCEED WITH TROUBLESHOOTING

HINT:

- Use these procedures to troubleshoot the combination meter.
- *: Use the Techstream.

1.	VEHICLE BROUGHT TO WORKSHOP
-----------	------------------------------------

NEXT



2.	INSPECT BATTERY VOLTAGE
-----------	--------------------------------

Standard voltage:

11 to 14 V

If the voltage is below 11 V, recharge or replace the battery before proceeding.

NEXT



3.	CHECK CAN COMMUNICATION SYSTEM*
-----------	--

(a) Use a Techstream to check if the CAN communication system is functioning normally.

Result

RESULT	PROCEED TO
CAN DTC is not output	A
CAN DTC is output	B

B **GO TO CAN COMMUNICATION SYSTEM**



4.

PROBLEM SYMPTOMS TABLE

Result

RESULT	PROCEED TO
Fault is not listed in Problem Symptoms Table	A
Fault is listed in Problem Symptoms Table	B

B ▶ Go to step 6

A
▼

5.

OVERALL ANALYSIS AND TROUBLESHOOTING*

- (a) Data List/Active Test INFO .
- (b) Terminals of ECU INFO .
- (c) On-vehicle Inspection INFO .

NEXT
▼

6.

ADJUST, REPAIR OR REPLACE

NEXT
▼

7.

CONFIRMATION TEST*

NEXT ▶ **END**



Last Modified: 3-27-2012	6.4 J	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000003A3400JX
Title: METER / GAUGE / DISPLAY: METER / GAUGE SYSTEM: Odo/Trip Switch Malfunction (2013 FR-S)		

Odo/Trip Switch Malfunction

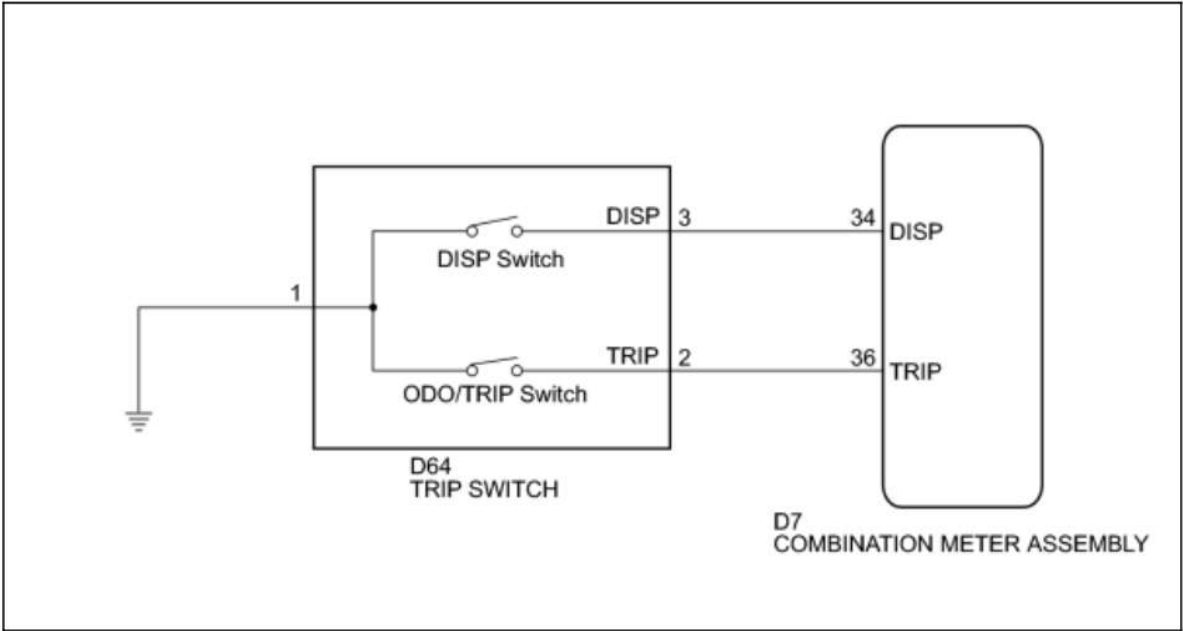
DESCRIPTION

The ODO/TRIP display of the combination meter changes each time the trip switch is pressed.

HINT:

For more information about switching between displays, refer to the owner’s manual.

WIRING DIAGRAM



INSPECTION PROCEDURE

PROCEDURE

1.	READ VALUE USING TECHSTREAM (MULTI DISPLAY SELECT SWITCH, ODO/TRIP CHANGE SW)
----	---

- (a) Connect the Techstream to the DLC3.
- (b) Turn the ignition switch to ON.
- (c) Turn the Techstream on.

- (d) Enter the following menus: Body Electrical / Combination Meter / Data List.
- (e) According to the display on the tester, read the Data List.

Combination Meter

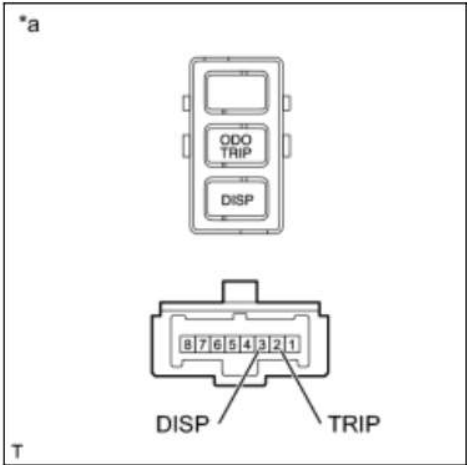
TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
ODO/TRIP Change SW	ODO/TRIP switch / OFF or ON	OFF: ODO/TRIP switch not pushed	-
		ON: ODO/TRIP switch pushed	
Multi Display Select Switch	Multi Display Select Switch / OFF or ON	OFF: DISP switch not pushed	-
		ON: DISP switch pushed	

OK:
The value displayed on the Techstream changes in accordance with the actual ODO/TRIP change switch and multi display select switch operation.

NG ► INSPECT TRIP SWITCH

OK ► REPLACE COMBINATION METER ASSEMBLY

2. INSPECT TRIP SWITCH



(a) Remove the trip switch INFO.

- (b) Measure the resistance according to the value(s) in the table below.
- Standard Resistance:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
2 (TRIP) - 1	ODO/TRIP switch on (pushed)	Below 1 Ω

2 (TRIP) - 1	ODO/TRIP switch off (not pushed)	10 k Ω or higher
3 (DISP) - 1	DISP switch on (pushed)	Below 1 Ω
3 (DISP) - 1	DISP switch off (not pushed)	10 k Ω or higher

Text in Illustration

*a	Component without harness connected (Trip Switch)
----	--

NG  **REPLACE TRIP SWITCH****OK**

3.	CHECK HARNESS AND CONNECTOR (COMBINATION METER - TRIP SWITCH AND BODY GROUND)
-----------	--

- (a) Disconnect the D7 combination meter assembly connector.
- (b) Disconnect the D64 trip switch connector.
- (c) Measure the resistance according to the value(s) in the table below.

Standard Resistance (Check for Open):

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
D7-34 (DISP) - D64-3 (DISP)	Always	Below 1 Ω
D7-36 (TRIP) - D64-2 (TRIP)	Always	Below 1 Ω

Standard Resistance (Check for Short):

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
D7-34 (DISP) or D64-3 (DISP) - Body ground	Always	10 k Ω or higher
D7-36 (TRIP) or D64-2 (TRIP) - Body ground	Always	10 k Ω or higher

NG  **REPAIR OR REPLACE HARNESS OR CONNECTOR****OK**  **REPLACE COMBINATION METER ASSEMBLY**



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Last Modified: 3-27-2012	6.4 G	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM0000014WB07ZX
Title: METER / GAUGE / DISPLAY: METER / GAUGE SYSTEM: ON-VEHICLE INSPECTION (2013 FR-S)		

ON-VEHICLE INSPECTION

1. INSPECT SPEEDOMETER

(a) Check the operation.

- (1) Using a speedometer tester (calibrated chassis dynamometer), check the speedometer indication according to the table below.

Indicator Type: km/h

CHASSIS DYNAMOMETER INDICATION (KM/H)	ACCEPTABLE RANGE (KM/H)
20	19.3 to 22.7
40	39.1 to 42.9
60	58.8 to 63.2
80	78.8 to 83.2
100	98.8 to 103.2
120	118.8 to 123.2
140	138.8 to 143.2
160	158.8 to 163.2
180	178.8 to 183.2
200	198.8 to 203.2
220	218.8 to 223.2
240	238.8 to 243.2

Indicator Type: MPH

CHASSIS DYNAMOMETER INDICATION (MPH)	ACCEPTABLE RANGE (MPH)
20	19.4 to 21.8
40	39.3 to 41.9
60	59.3 to 61.9
80	79.3 to 81.9
100	99.3 to 101.9
120	119.3 to 121.9
140	139.3 to 141.9

NOTICE:

Tire wear, over inflation, or under inflation will cause errors.

- (2) Check the deviation from the acceptable range of the speedometer indication.

Reference:

Less than 0.5 km/h (0.3 mph)

HINT:

If the indication is not as specified, go to the problem symptoms table [INFO](#) .

2. INSPECT TACHOMETER

- (a) Connect a tune-up tachometer, and start the engine.
- (b) Compare the test results with the tachometer indications.

TUNE-UP TACHOMETER INDICATION (RPM)	ACCEPTABLE RANGE (RPM)
1000	933 to 1067
2000	1923 to 2077
3000	2913 to 3088
4000	3913 to 4088
5000	4913 to 5088
6000	5913 to 6088
7000	6913 to 7088
8000	7913 to 8088

HINT:

If the indication is not as specified, go to the Problem Symptoms Table [INFO](#) .

3. INSPECT INDICATOR AND WARNING LIGHTS

- (a) Check the illumination function of the warning or indicator lights listed below when turning the ignition switch to ON.

OK:

WARNING OR INDICATOR LIGHT	SPECIFIED CONDITION
LOW FUEL	Warning or indicator light comes on for about 2 seconds after turning the ignition switch to ON.
A/T OIL TEMP*	Warning or indicator light comes on for about 2 or 3 seconds after turning the ignition switch to ON.
TPMS	Warning or indicator light comes on for about 3 seconds after turning the ignition switch to ON.
Brake	
TRAC OFF	
VSC OFF	
VSC SPORT	
SRS	Warning light comes on for about 6 seconds after turning the ignition switch to ON.
Charge	
Oil pressure	

MIL (Check engine warning light)	The light goes off right after the engine starts.
EPS	
SLIP	The light goes off 3 minutes after starting the engine.
ABS	

*: for Automatic Transmission System



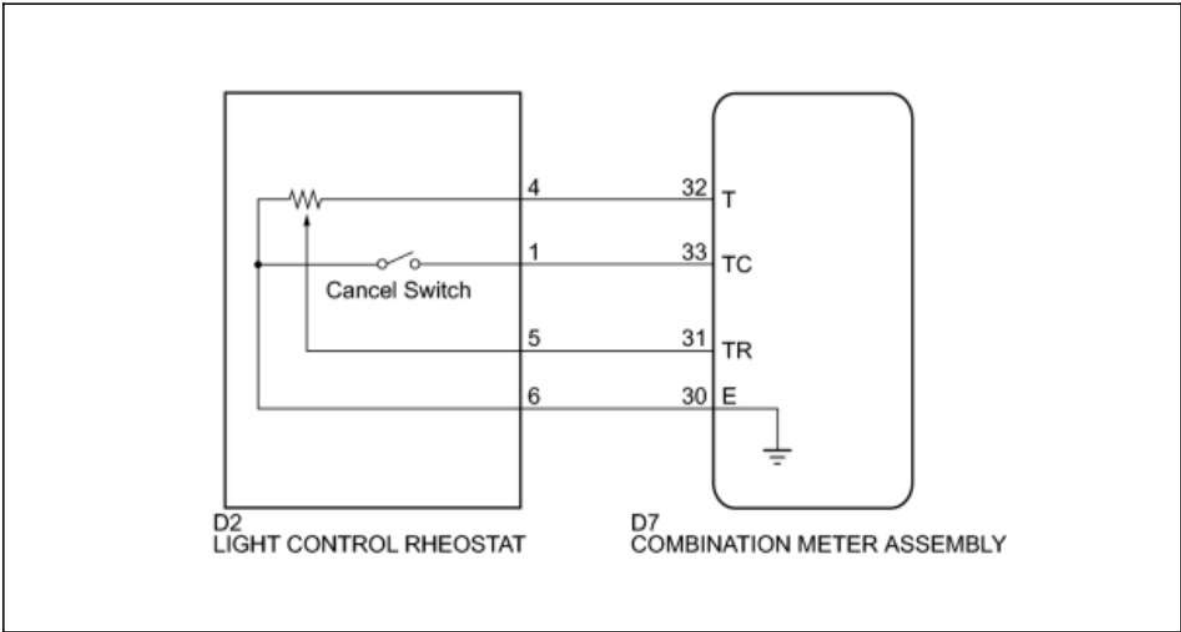
Last Modified: 3-27-2012	6.4 J	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000003A3200GX
Title: METER / GAUGE / DISPLAY: METER / GAUGE SYSTEM: Operating Light Control Rheostat does not Change Light Brightness (2013 FR-S)		

Operating Light Control Rheostat does not Change Light Brightness

DESCRIPTION

The brightness of the combination meter assembly is controlled by rotating the light control rheostat knob in upward and downward.

WIRING DIAGRAM



INSPECTION PROCEDURE

PROCEDURE

1.	READ VALUE USING TECHSTREAM (RHEOSTAT SWITCH)
----	---

- (a) Connect the Techstream to the DLC3.
- (b) Turn the ignition switch to ON.
- (c) Turn the Techstream on.
- (d) Enter the following menus: Body Electrical / Combination Meter / Data List.
- (e) According to the display on the tester, read the Data List.

Combination Meter

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
Tail Cancel SW	Taillight relay / OFF or ON	OFF: Headlight dimmer switch (Light control switch) → OFF	-
		ON: Headlight dimmer switch (Light control switch) → TAIL	
Rheostat value	Light control rheostat switch input / Min.: 0 Max.: 100	The volume value of the rheostat is displayed. 0 to 100	-

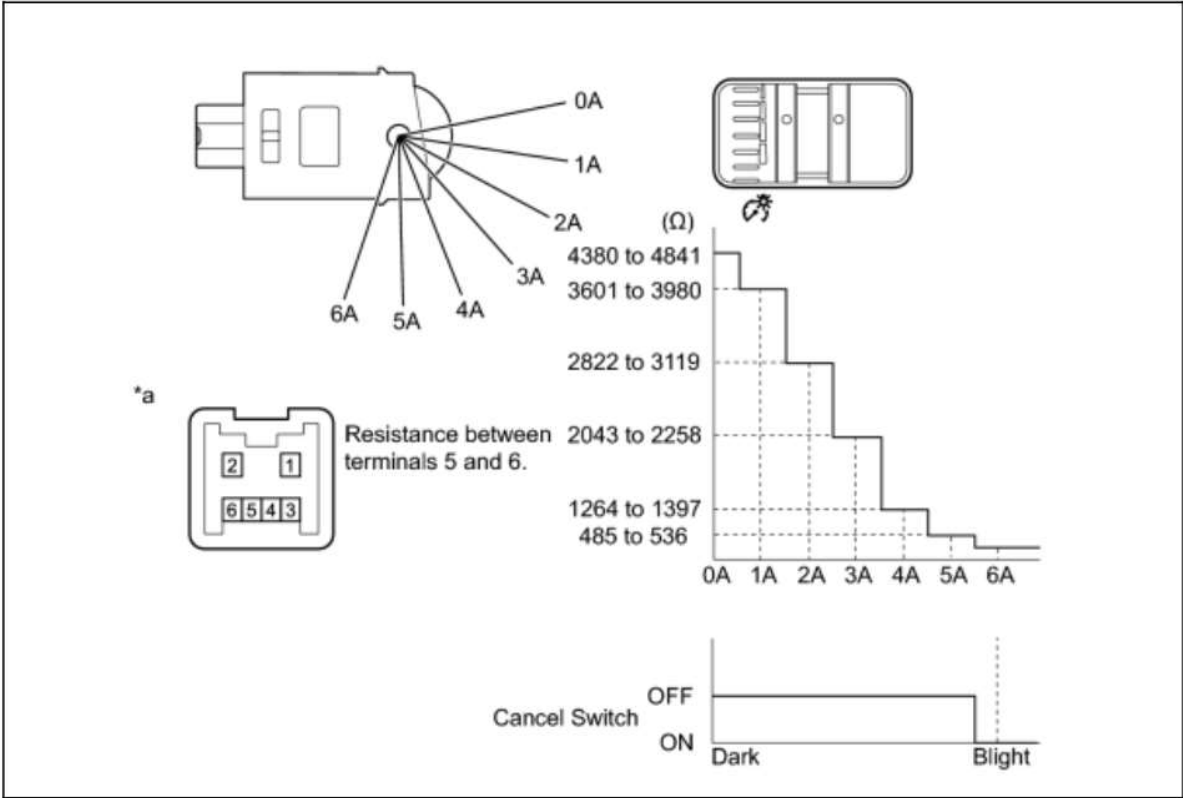
OK:
The value displayed on the Techstream changes in accordance with the actual rheostat switch operation.

NG ▶ INSPECT LIGHT CONTROL RHEOSTAT

OK ▶ REPLACE COMBINATION METER ASSEMBLY

2. INSPECT LIGHT CONTROL RHEOSTAT

(a) Remove the light control rheostat INFO .



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

Standard Resistance:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
1 - 6	Cancel switch off → on	10 k Ω or higher → Below 1 Ω
4 - 6	Always	4475 to 4946 Ω
5 - 6	Light control rheostat fully up → Light control rheostat fully down	485 to 536 Ω → 4380 to 4841 Ω

Text in Illustration

*a	Component without harness connected (Light Control Rheostat)
----	---

NG  **REPLACE LIGHT CONTROL RHEOSTAT**

OK



3.	CHECK HARNESS AND CONNECTOR (COMBINATION METER ASSEMBLY - LIGHT CONTROL RHEOSTAT)
-----------	--

(a) Disconnect the D7 combination meter assembly connector.

(b) Disconnect the D2 light control rheostat connector.

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

Standard Resistance (Check for Open):

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
D7-30 (E) - D2-6	Always	Below 1 Ω
D7-31 (TR) - D2-5	Always	Below 1 Ω
D7-32 (T) - D2-4	Always	Below 1 Ω
D7-33 (TC) - D2-1	Always	Below 1 Ω

Standard Resistance (Check for Short):

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
D7-30 (E) or D2-6 - Body ground	Always	10 k Ω or higher
D7-31 (TR) or D2-5 - Body ground	Always	10 k Ω or higher

D7-32 (T) or D2-4 - Body ground	Always	10 kΩ or higher
D7-33 (TC) or D2-1 - Body ground	Always	10 kΩ or higher

NG  **REPAIR OR REPLACE HARNESS OR CONNECTOR**

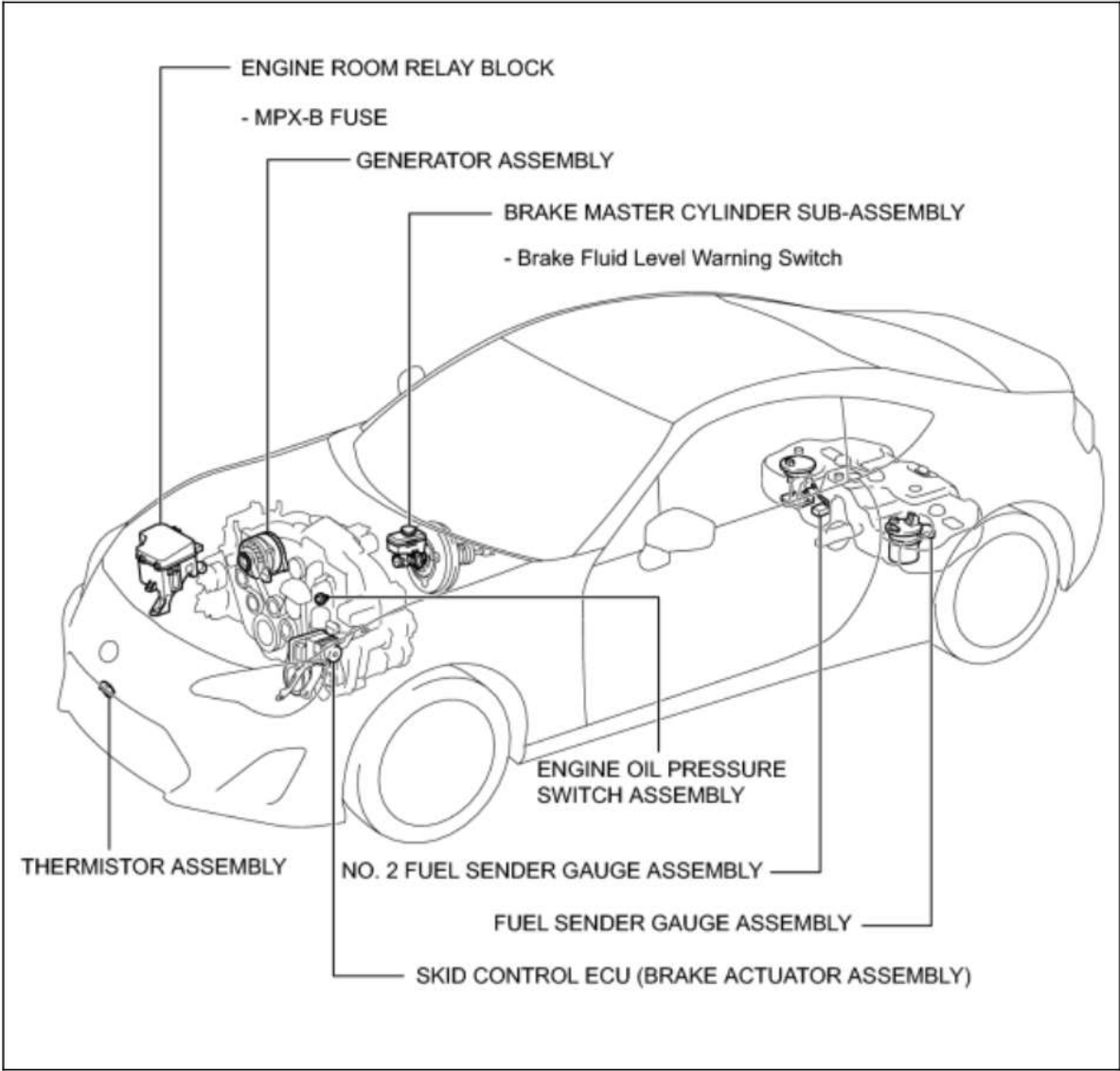
OK  **REPLACE COMBINATION METER ASSEMBLY**



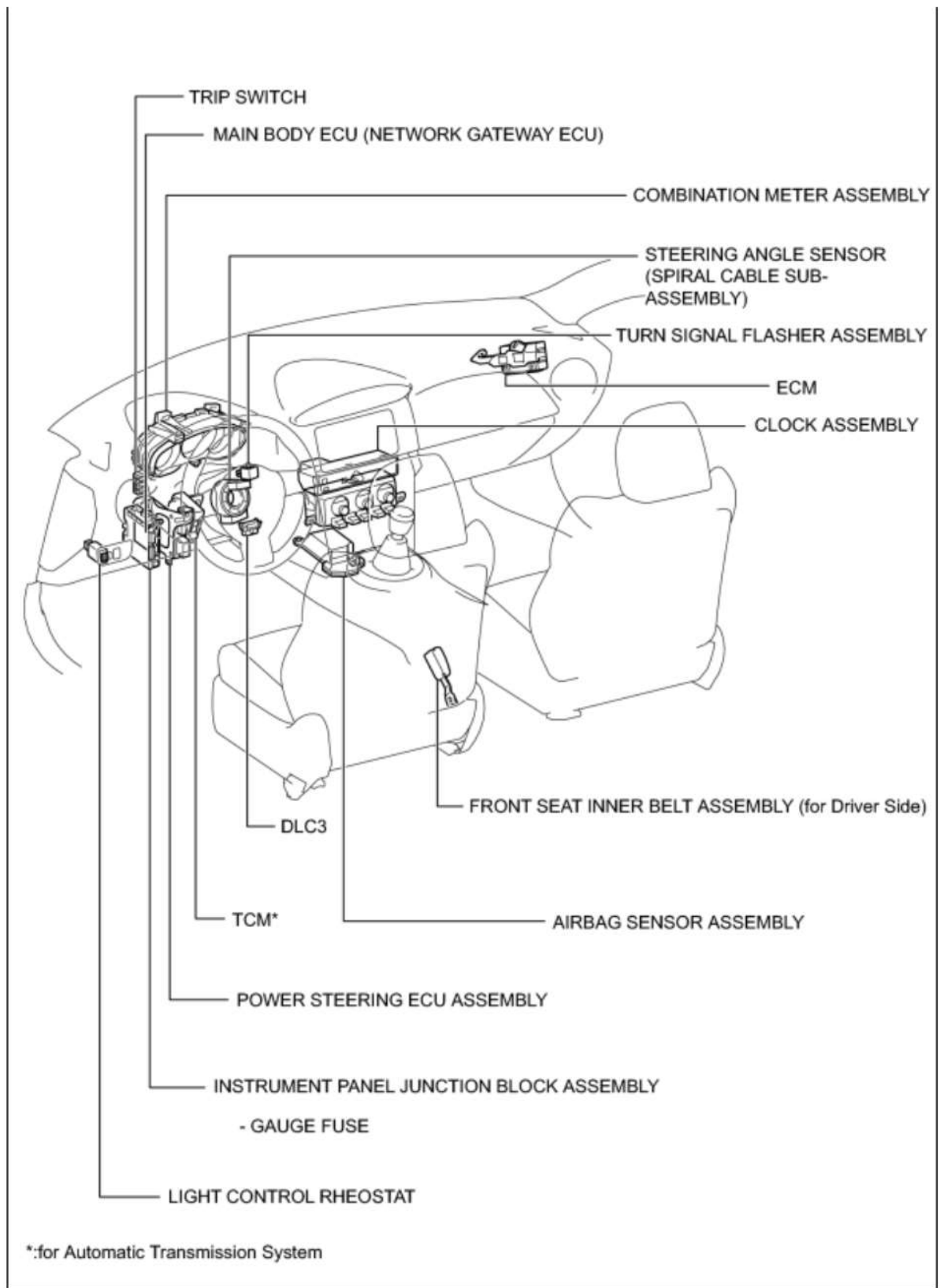
Last Modified: 3-27-2012	6.4 R	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000003UUR00AX
Title: METER / GAUGE / DISPLAY: METER / GAUGE SYSTEM: PARTS LOCATION (2013 FR-S)		

PARTS LOCATION

ILLUSTRATION



ILLUSTRATION



TOYOTA

Last Modified: 3-27-2012	6.4 T	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000003UUS00HX
Title: METER / GAUGE / DISPLAY: METER / GAUGE SYSTEM: PROBLEM SYMPTOMS TABLE (2013 FR-S)		

PROBLEM SYMPTOMS TABLE

HINT:

- Use the table below to help determine the cause of problem symptoms. If multiple suspected areas are listed, the potential causes of the symptoms are listed in order of probability in the "Suspected Area" column of the table. Check each symptom by checking the suspected areas in the order they are listed. Replace parts as necessary.
- Inspect the fuses and relays related to this system before inspecting the suspected areas below.

Malfunction System

SYMPTOM	SUSPECTED AREA	SEE PAGE
Entire combination meter does not operate	Entire combination meter does not operate	INFO

Meter / Gauge

SYMPTOM	SUSPECTED AREA	SEE PAGE
Speedometer malfunction	Speedometer circuit	INFO
Tachometer malfunction	Tachometer circuit	INFO
Fuel gauge malfunction	Fuel gauge circuit	INFO
Engine coolant temperature receiver gauge malfunction	Engine coolant temperature receiver gauge circuit	INFO
ODO/TRIP switch malfunction	ODO/TRIP switch circuit	INFO
Operating light control rheostat does not change light brightness	Light control rheostat circuit	INFO

Warning/Indicator Light

SYMPTOM	SUSPECTED AREA	SEE PAGE
Turn indicator light does not come on	Headlight dimmer switch	INFO
	Harness or connector	-
	Combination meter assembly	INFO
SET indicator light does not come on*1	Perform active test (Indicat. SET)	INFO
	Cruise SET Indicator Light Circuit	INFO
	Combination meter assembly	INFO
CRUISE indicator light does not come on (green)*1	Perform active test (Indicat. Lamp Cruise)	INFO
	Cruise Main Indicator Light Circuit	

		INFO
	Combination meter assembly	INFO
CRUISE warning light does not come on (yellow)*1	Perform active test (Cruise Warning)	INFO
	Cruise Main Indicator Light Circuit	INFO
	Combination meter assembly	INFO
Open door warning light does not come on	Perform active test (Indicat. Lamp Doors All Open)	INFO
	CAN communication system	INFO
	Door courtesy switch	INFO
	Harness or connector	-
	Main body ECU (network gateway ECU)	INFO
	Combination meter assembly	INFO
Beam indicator light does not come on	Perform active test (Indicat. Lamp Beam)	INFO
	Lighting (EXT) - Lighting system	INFO
	Combination meter assembly	INFO
TPMS indicator light does not come on	Perform active test (Indicat. Tire Pressure Warning System)	INFO
	Tire Pressure Warning Light Circuit	INFO
	Combination meter assembly	INFO
Security indicator light does not come on	Security Indicator Light Does not Blink	INFO
	Combination meter assembly	INFO
REV indicator light does not come on*2	System description - Multi information display flow chart	INFO
	Trip switch	INFO
	Harness or connector	-
	Combination meter assembly	INFO
SLIP indicator light does not come on	Perform active test (Indicat. Lamp Slip)	INFO
	Slip Indicator Light does not Come ON	INFO
	Combination meter assembly	INFO
ABS warning light does not come on	Perform active test (Indicat. Lamp ABS)	INFO
	ABS Warning Light does not Come ON	INFO
	Combination meter assembly	INFO
Driver side seat belt warning light does not come on	Perform active test (Driver Side Seat Belt)	INFO
	Driver Side Seat Belt Warning Light does not Operate	INFO
	Combination meter assembly	INFO
Charge warning light does not come on	LED check	INFO

	Battery / charging - Charging system	INFO
	Harness or connector	-
	Combination meter assembly	INFO
Engine oil pressure warning light does not come on	LED check	INFO
	Engine oil pressure switch assembly	INFO
	Harness or connector	-
	Combination meter assembly	INFO
MIL does not come on	LED check	INFO
	Perform active test (Check Engine Warning)	INFO
	MIL circuit	INFO
	Combination meter assembly	INFO
SPORT indicator light does not come on*3	Perform active test (SPORT Indicator)	INFO
	Automatic transmission / transaxle - Automatic transmission system	INFO
	Combination meter assembly	INFO
SNOW indicator light does not come on*3	Perform active test (Indicat. Lamp ECT SNOW)	INFO
	Automatic transmission / transaxle - Automatic transmission system	INFO
	Combination meter assembly	INFO
A/T OIL TEMP warning light does not come on*3	LED check	INFO
	Perform active test (A/T Oil Temperature Operation)	INFO
	Automatic transmission / transaxle - Automatic transmission system	INFO
	Combination meter assembly	INFO
Brake warning light does not come on	LED check	INFO
	Perform active test (Indicat. Lamp Brake)	INFO
	Brake Warning Light does not Come ON	INFO
	Combination meter assembly	INFO
TRAC OFF indicator light does not come on	LED check	INFO
	Perform active test (VSC TRC Indicator)	INFO
	TRC OFF Indicator Light does not Come ON	INFO
	Combination meter assembly	INFO
VSC OFF indicator light does not come on	LED check	INFO
	Perform active test (Indicat. VSC OFF)	INFO
	VSC OFF Indicator Light does not Come ON	INFO
	Combination meter assembly	

		INFO
VSC SPORT indicator light does not come on	LED check	INFO
	VSC SPORT Indicator Light does not Come ON	INFO
	Combination meter assembly	INFO
Airbag warning light does not come on	LED check	INFO
	Perform active test (Indicat. Lamp Airbag)	INFO
	SRS Warning Light does not Come ON	INFO
	Combination meter assembly	INFO
EPS warning light does not come on	LED check	INFO
	Perform active test (Indicat. EPS)	INFO
	EPS Warning Light Circuit	INFO
	Combination meter assembly	INFO
Low fuel warning light does not come on	LED check	INFO
	Perform active test (Indicat. Lamp Fuel)	INFO
	Fuel sender gauge assembly	INFO
	No. 2 fuel sender gauge assembly	INFO
	Harness or connector	-
	Combination meter assembly	INFO

*1: w/ Cruise Control System

*2: w/ Digital Speedometer

*3: for Automatic Transmission System

Buzzer

SYMPTOM	SUSPECTED AREA	SEE PAGE
No buzzers sound	Harness or connector	-
	Combination meter assembly	INFO
Seat belt warning buzzer does not sound (driver seat) (driver side seat belt warning light is normal)	Combination meter assembly	INFO
EPS buzzer does not sound (EPS warning light is normal)	Combination meter assembly	INFO
Key reminder warning buzzer does not sound	Key Reminder Buzzer does not Sound	INFO
Immobilizer key identification completion notice buzzer (buzzer that sounds once) does not sound	Theft deterrent / keyless entry - engine immobiliser system	INFO
	Combination meter assembly	INFO

Sports reject buzzer does not sound (driving system operates normally)*1	Combination meter assembly	INFO
REV buzzer does not sound*2	System description - Multi information display flow chart	INFO
	Combination meter assembly	INFO
Light reminder warning buzzer does not sound (lighting system operates normally, door warning light comes on when a door is opened)	Combination meter assembly	INFO

*1: for Automatic Transmission System

*2: w/ Digital Speedometer

Multi--Information Display

SYMPTOM	SUSPECTED AREA	SEE PAGE
Cannot switch between ODO/TRIP displays, or cannot reset TRIP	Trip switch	INFO
	Harness or connector	-
	Combination meter assembly	INFO
Display fault (no display, figures do not change)	Combination meter assembly	INFO
ODO/TRIP display does not come on.	Perform active test (Meter Display 1 - 6, 5, 4, 3, 2, 1, 0 and all)	INFO
	Perform active test (Meter Display 2 - 9, 8, 7)	INFO
	Combination meter assembly	INFO
Shift indicator light does not come on.*1	Perform active test (A/T Indicator Operation 1 - L, 2, 3, 4, D, N, R and P)	INFO
	Perform active test (A/T Indicator Operation 2 - 5, 6 and M)	INFO
	Perform active test (A/T Indicator Operation 3 - D)	INFO
	Combination meter assembly	INFO
Shift indicator light does not come on (display is normal after clutch release)*2	System description - Multi information display flow chart	INFO
	Trip switch	INFO
	Perform active test (A/T Indicator Operation 1 - L, 2, 3, 4, D, N, R and P)	INFO
	Perform active test (A/T Indicator Operation 2 - 5, 6 and M)	INFO
	Perform active test (A/T Indicator Operation 3 - D)	INFO
	Combination meter assembly	INFO

Ambient temperature not displayed	Thermistor assembly	INFO
	Harness or connector	-
	Combination meter assembly	INFO
Significant error in average fuel consumption display (speedometer, tachometer are normal)	Combination meter assembly	INFO
Significant error in instantaneous fuel consumption display (speedometer, tachometer are normal)	Combination meter assembly	INFO
Digital speedometer display fault (no display, figures do not change)*3	Combination meter assembly	INFO

*1: for Automatic Transmission System

*2: for Manual Transmission System

*3: w/ Digital Speedometer



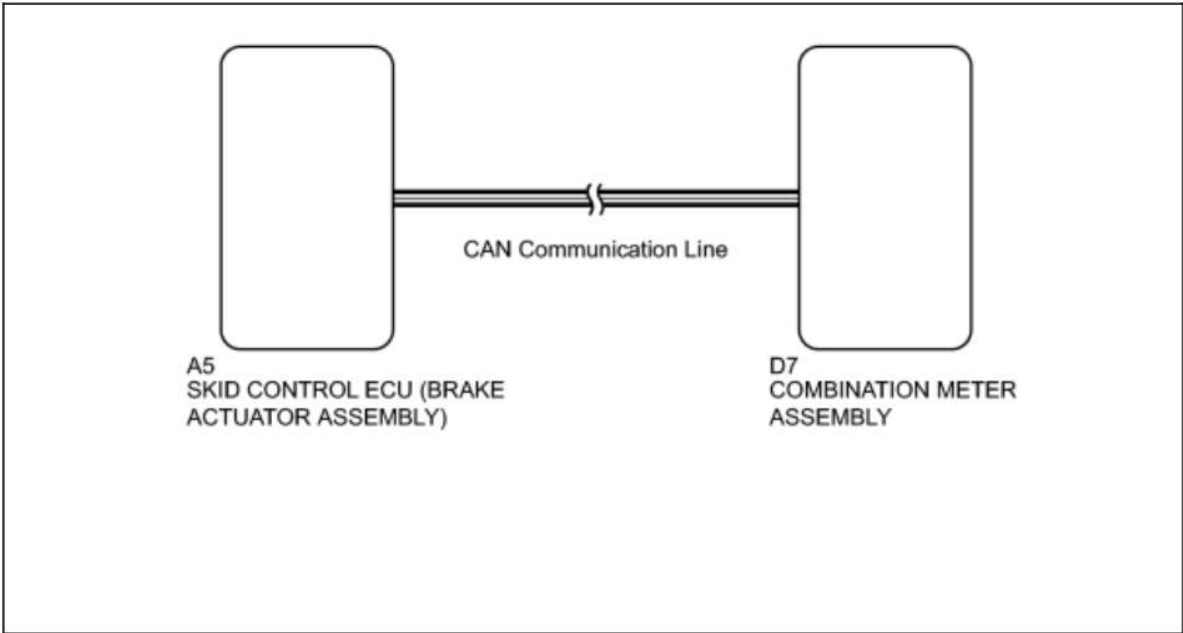
Last Modified: 3-27-2012	6.4 J	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000001YNX01BX
Title: METER / GAUGE / DISPLAY: METER / GAUGE SYSTEM: Speedometer Malfunction (2013 FR-S)		

Speedometer Malfunction

DESCRIPTION

The combination meter assembly controls the speedometer in accordance with the vehicle speed signals from the skid control ECU (brake actuator assembly) through the CAN communication system.

WIRING DIAGRAM



INSPECTION PROCEDURE

PROCEDURE

1.	CHECK CAN COMMUNICATION SYSTEM
----	--------------------------------

(a) Check if CAN communication DTCs are output INFO .

Result

RESULT	PROCEED TO
DTCs are not output.	A
DTCs are output.	B

B ► GO TO CAN COMMUNICATION SYSTEM**A****2. PERFORM ACTIVE TEST USING TECHSTREAM (SPEED METER OPERATION)**

- (a) Connect the Techstream to the DLC3.
- (b) Turn the ignition switch to ON.
- (c) Turn the Techstream on.
- (d) Enter the following menus: Body Electrical / Combination Meter / Active Test.
- (e) According to the display on the tester, perform the Active Test.

Combination Meter

TESTER DISPLAY	TEST PART	CONTROL RANGE	DIAGNOSTIC NOTE
Speed Meter Operation	Speedometer	0, 40, 80, 120, 160, 200, 240 km/h	-

OK:

The vehicle speed displayed on the tester is approximately the same as that of the speedometer reading.

NG ► REPLACE COMBINATION METER ASSEMBLY**OK****3. READ VALUE USING TECHSTREAM (VEHICLE SPEED METER)**

- (a) Connect the Techstream to the DLC3.
- (b) Turn the ignition switch to ON.
- (c) Turn the Techstream on.
- (d) Enter the following menus: Body Electrical / Combination Meter / Data List.
- (e) According to the display on the tester, read the Data List.

Combination Meter

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
----------------	------------------------	------------------	-----------------

Vehicle Speed Meter	Vehicle speed / Min.: 0 (0) Max.: 255 (158)	Approximately same as actual vehicle speed (when vehicle is being driven)	Unit km/h (mph)
---------------------	---	---	-----------------

OK:

The vehicle speed displayed on the tester is approximately the same as the actual vehicle speed.

NOTICE:

Determine whether the value displayed on the tester is within the acceptable range by referring to the reference values described in "On-Vehicle Inspection" [INFO](#) .

NG ► **REPLACE COMBINATION METER ASSEMBLY**

OK

4.	CHECK VEHICLE STABILITY CONTROL SYSTEM
-----------	---

(a) Check if the vehicle stability control system outputs DTCs [INFO](#) .

Result

RESULT	PROCEED TO
DTCs are not output.	A
DTCs are output.	B

B ► **GO TO VEHICLE STABILITY CONTROL SYSTEM**

A

5.	READ VALUE USING TECHSTREAM (VEHICLE SPEED)
-----------	--

- (a) Connect the Techstream to the DLC3.
- (b) Turn the ignition switch to ON.
- (c) Turn the Techstream on.
- (d) Enter the following menus: Chassis / ABS/VSC/TRAC / Data List.
- (e) According to the display on the tester, read the Data List.

Combination Meter

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
Vehicle Speed	Vehicle speed / Min.: 0 (0) Max.: 326.4 (202.8)	Approximately same as actual vehicle speed (when vehicle is being driven)	Unit km/h (mph)

OK:
The vehicle speed displayed on the tester is approximately the same as the actual vehicle speed.

NOTICE:
Determine whether the value displayed on the tester is within the acceptable range by referring to the reference values described in "On-Vehicle Inspection" INFO .

B ▶ GO TO VEHICLE STABILITY CONTROL SYSTEM

A
▼

6.

REPLACE COMBINATION METER ASSEMBLY

(a) Replace the combination meter assembly with a new or a normal one INFO .
OK:
The operation of the speedometer returns to normal.

NG ▶ REPLACE SKID CONTROL ECU (BRAKE ACTUATOR ASSEMBLY)

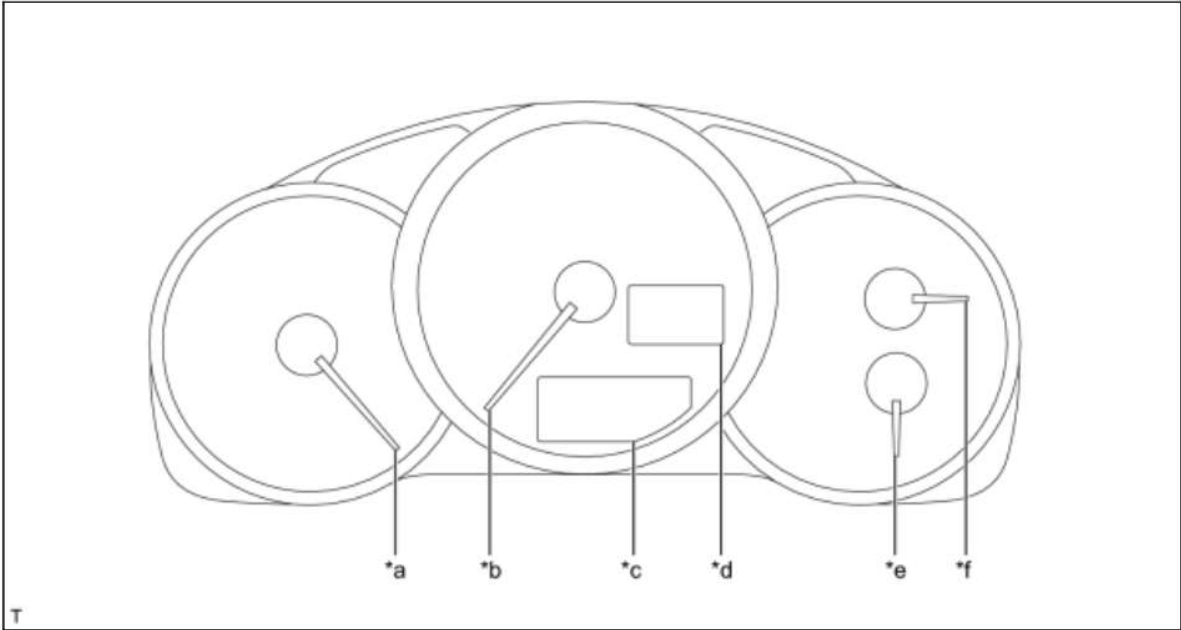
OK ▶ END



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Model Year: 2013	Model: FR-S	Doc ID: RM000001F8N01HX
Title: METER / GAUGE / DISPLAY: METER / GAUGE SYSTEM: SYSTEM DESCRIPTION (2013 FR-S)		

SYSTEM DESCRIPTION

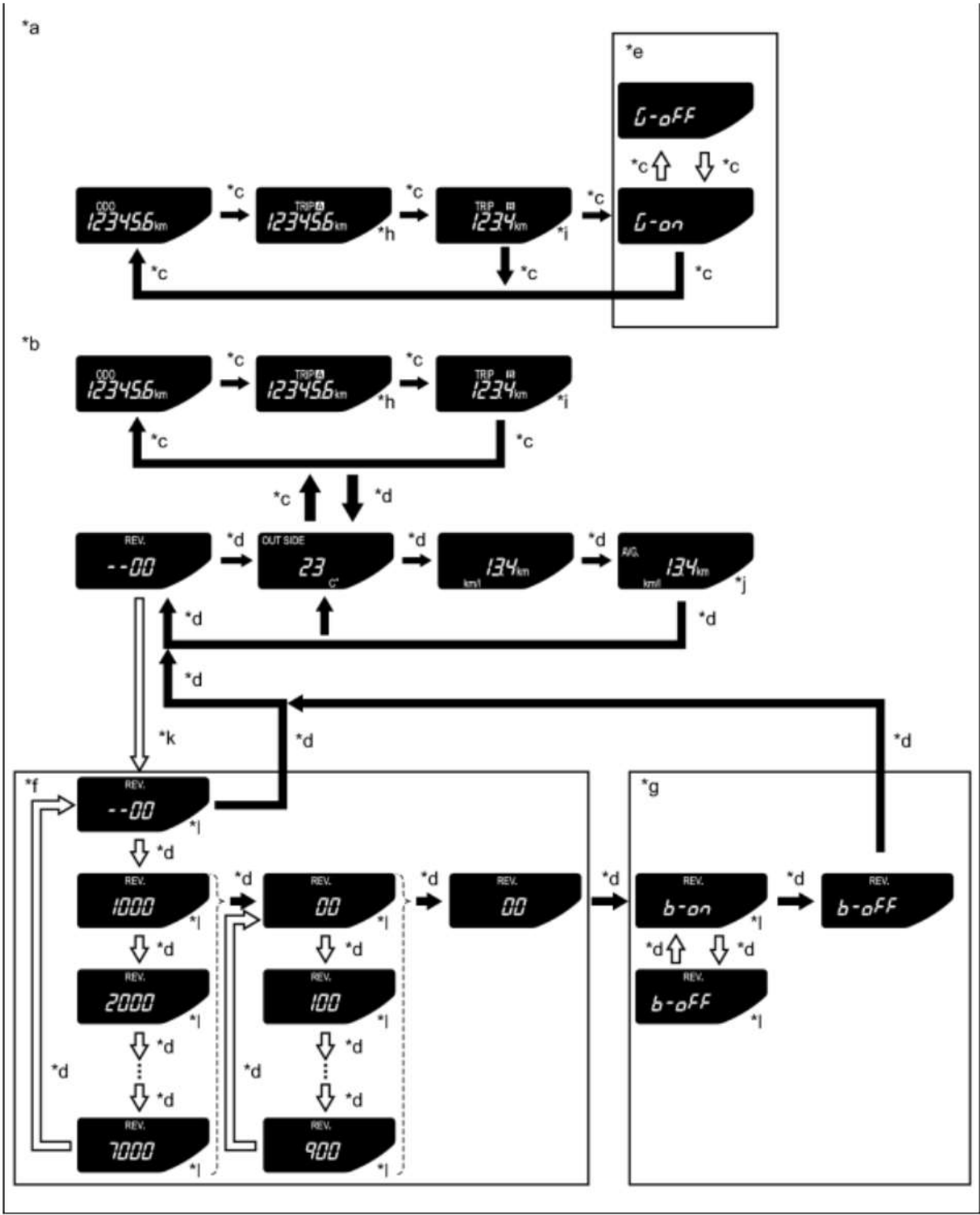
1. OUTLINE OF COMBINATION METER SUB-ASSEMBLY



Text in Illustration

*a	Speedometer	*b	Tachometer
*c	Multi-information display	*d	Digital speedometer
*e	Engine coolant temperature receiver gauge	*f	Fuel receiver gauge

2. MULTI-INFORMATION DISPLAY FLOW CHART

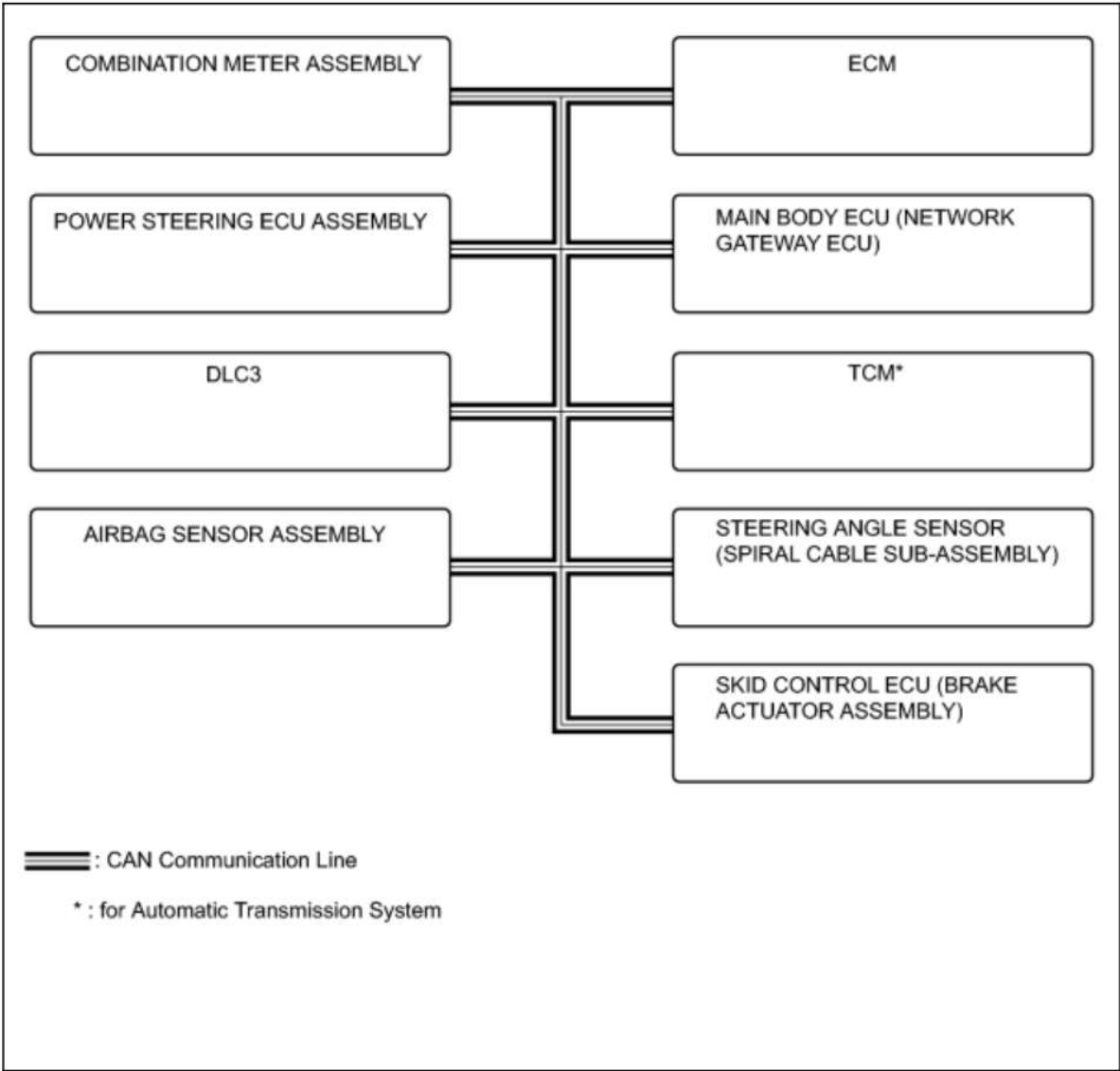


Text in Illustration

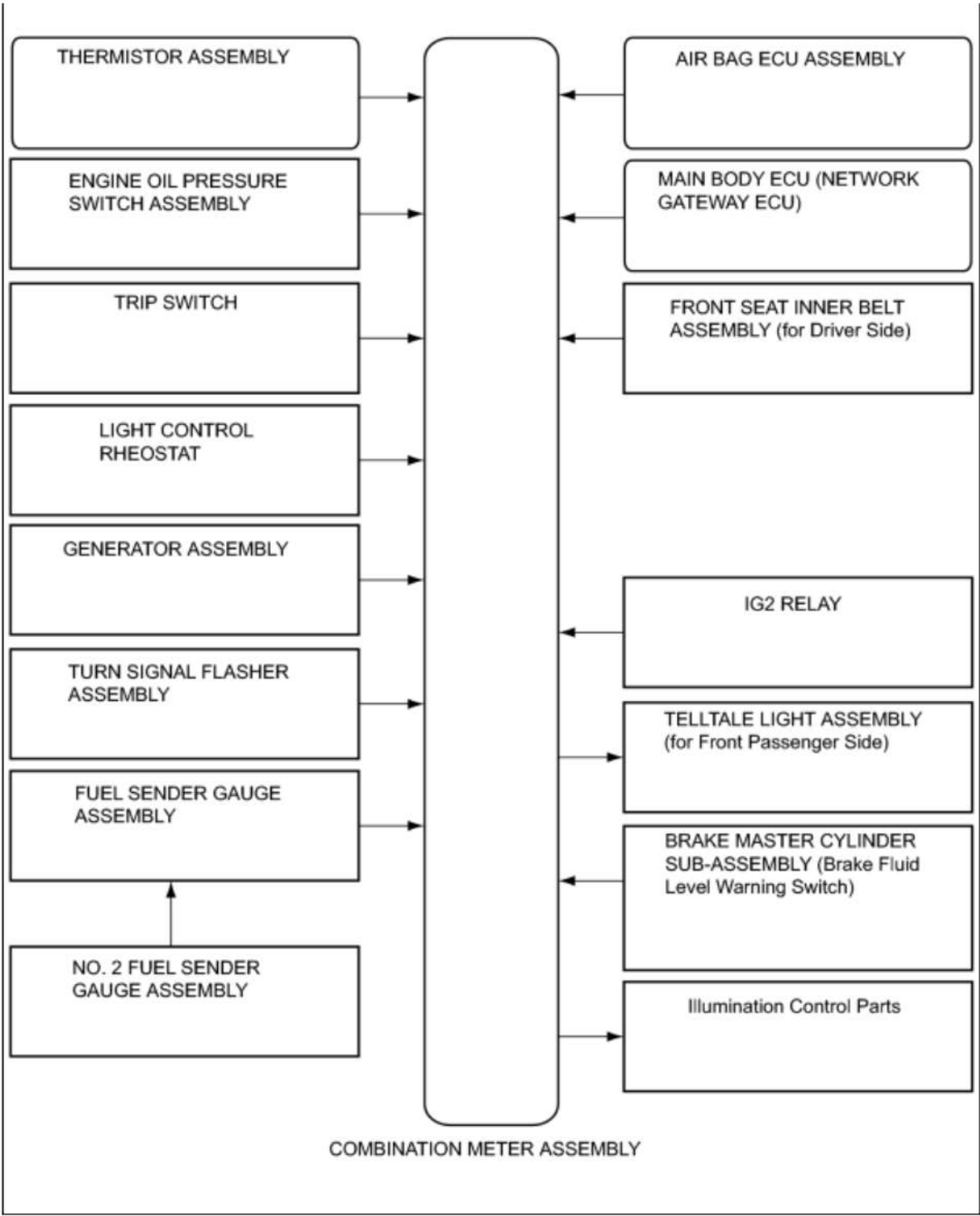
*a	Screen transition while the ignition switch is off	*b	Screen transition while the Ignition switch is ON
*c	ODO/TRIP switch	*d	DISP switch
*e	MT shift display setting (for manual transmission system)	*f	RPM setting
*g	Buzzer sound ON/OFF setting	*h	Long pressing the "ODO/TRIP" switch resets the trip meter A to 0.0
	Long pressing the "ODO/TRIP" switch		Long pressing the "DISP" switch resets the

*j	resets the trip meter B to 0.0	*j	average fuel consumption to 0.0
*k	Pressing the "DISP" switch when vehicle speed is 0 km/h	*l	The "REV." display blinks
	Short press		Long press

3. CAN SIGNAL



4. DIRECT LINE SIGNAL



5. METER GAUGE AND WARNING INDICATOR

Meter / Gauge

ITEM	SIGNAL DESCRIPTION
Speedometer	Indicates the vehicle speed based on signals received from the skid control ECU (brake actuator assembly) and the gauge needle operates (CAN).
Tachometer	Indicates the engine speed based on signals from ECM and the gauge needle operates (CAN).
	Indicates the fuel level in accordance with signals received from fuel sender

Fuel Gauge	gauge assembly and the gauge needle operates (Direct line).
Engine coolant temperature gauge	The combination meter assembly receives an engine coolant temperature signal from the ECM and the gauge needle operates (CAN).

Warning/Indicator

ITEM	SIGNAL DESCRIPTION
TURN	Receives turn signal from turn signal flasher assembly (Direct line).
SET*1	Receives cruise control switch signal from the ECM (CAN).
CRUISE (green)*1	Receives cruise control switch signal from the ECM (CAN).
CRUISE (yellow)*1	Receives cruise control switch signal from the ECM (CAN).
DOOR	Open door indicator illuminates when receiving signal from main body ECU (network gateway ECU) (CAN).
HI BEAM	Receives high beam signal from main body ECU (network gateway ECU) (CAN).
TPMS	Receives TPMS signal from main body ECU (network gateway ECU) (CAN).
SECURITY	Receives security signal from main body ECU (network gateway ECU) (CAN).
REV*2	Receives engine speed signal from the ECM (CAN).
SLIP	Receives VSC control signal or malfunction signal from brake actuator assembly (skid control ECU) (CAN).
ABS	Receives malfunction signal from brake actuator assembly (skid control ECU) (CAN).
D SEAT BELT	Receives driver seat belt warning signal (unfastened) from main body ECU (network gateway ECU) (Direct line).
CHARGE	Receives malfunction signal from generator assembly (Direct line).
OIL PRESSURE	Receives engine oil pressure warning signal from engine oil pressure switch assembly (Direct line).
MIL	Receives malfunction check engine warning signal from ECM (CAN).
SPORT*3	Receives sport indicator signal from TCM (CAN).
SNOW*3	Receives snow indicator signal from TCM (CAN).
AT OIL TEMP*3	Receives malfunction signal from TCM (CAN).
BRAKE	- Receives brake fluid level warning signal from brake level switch (Direct line). - Receives parking brake switch signal from main body ECU (network gateway ECU) (CAN). - Receives malfunction signal from brake actuator assembly (skid control ECU) (CAN).
TRAC OFF	Receives TRAC control off signal from brake actuator assembly (skid control ECU) (CAN).
VSC OFF	Receives VSC control off signal from brake actuator assembly (skid control ECU)

	(CAN).
VSC SPORT	Receives VSC sport signal from brake actuator assembly (skid control ECU) (CAN).
AIRBAG	Receives malfunction signal from airbag sensor assembly (CAN).
EPS	Receives malfunction signal from power steering ECU assembly (CAN).
LOW FUEL	Receives low fuel signal from fuel sender gauge assembly (Direct line).

*1: w/ Cruise Control System

*2: w/ Digital Speedometer

*3: for Automatic Transmission System

Buzzer

ITEM	SIGNAL DESCRIPTION
SEAT BELT (driver seat belt)	Buzzer ON: When ignition switch is ON, driver seat belt is unfastened, and vehicle speed is 20 km/h (12.4 mph) or more.
EPS	Buzzer ON: Receives malfunction signal from the power steering ECU assembly.
KEY REMINDER	Buzzer ON: Receives signal from main body ECU (network gateway ECU).
IMMOBILISER	Buzzer ON: Receives signal from main body ECU (network gateway ECU).
SPORTS SHIFT REJECT*1	Buzzer ON: Receives signal from the ECM.
REV*2	Buzzer ON: Receives engine speed signal from the ECM.
LIGHT REMINDER	Buzzer ON: When ignition switch is off, receives signal from main body ECU (network gateway ECU).

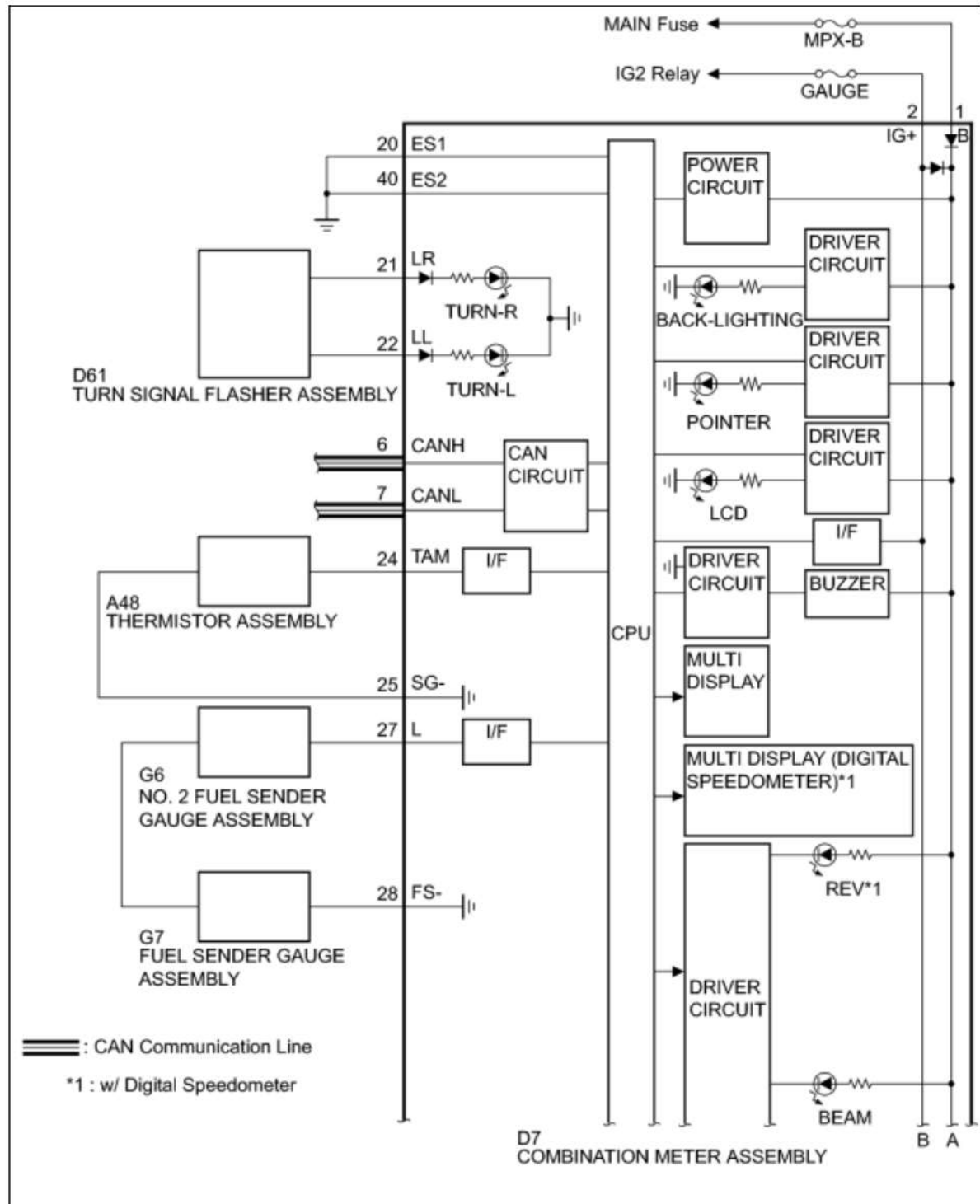
*1: for Automatic Transmission System

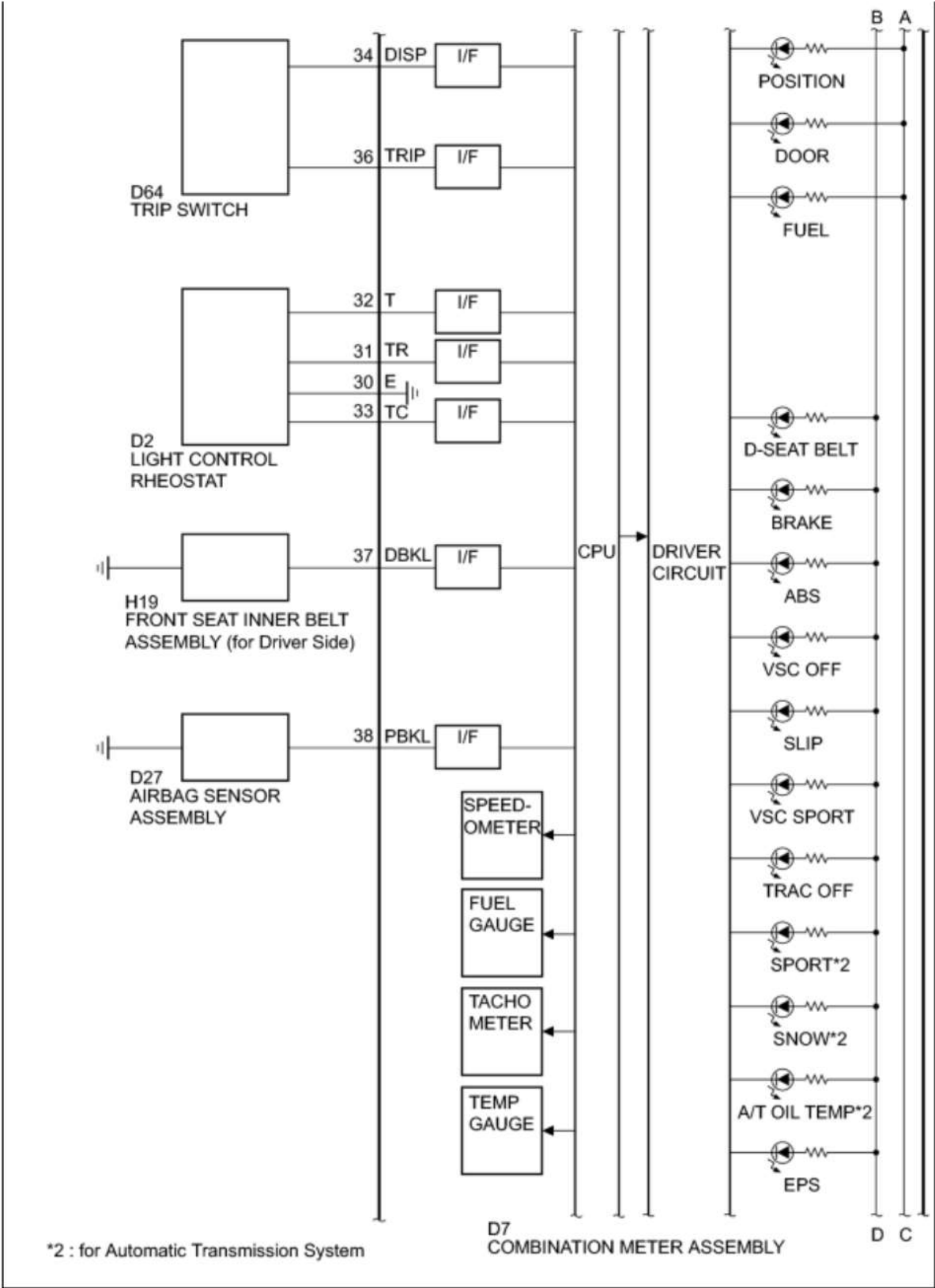
*2: w/ Digital Speedometer

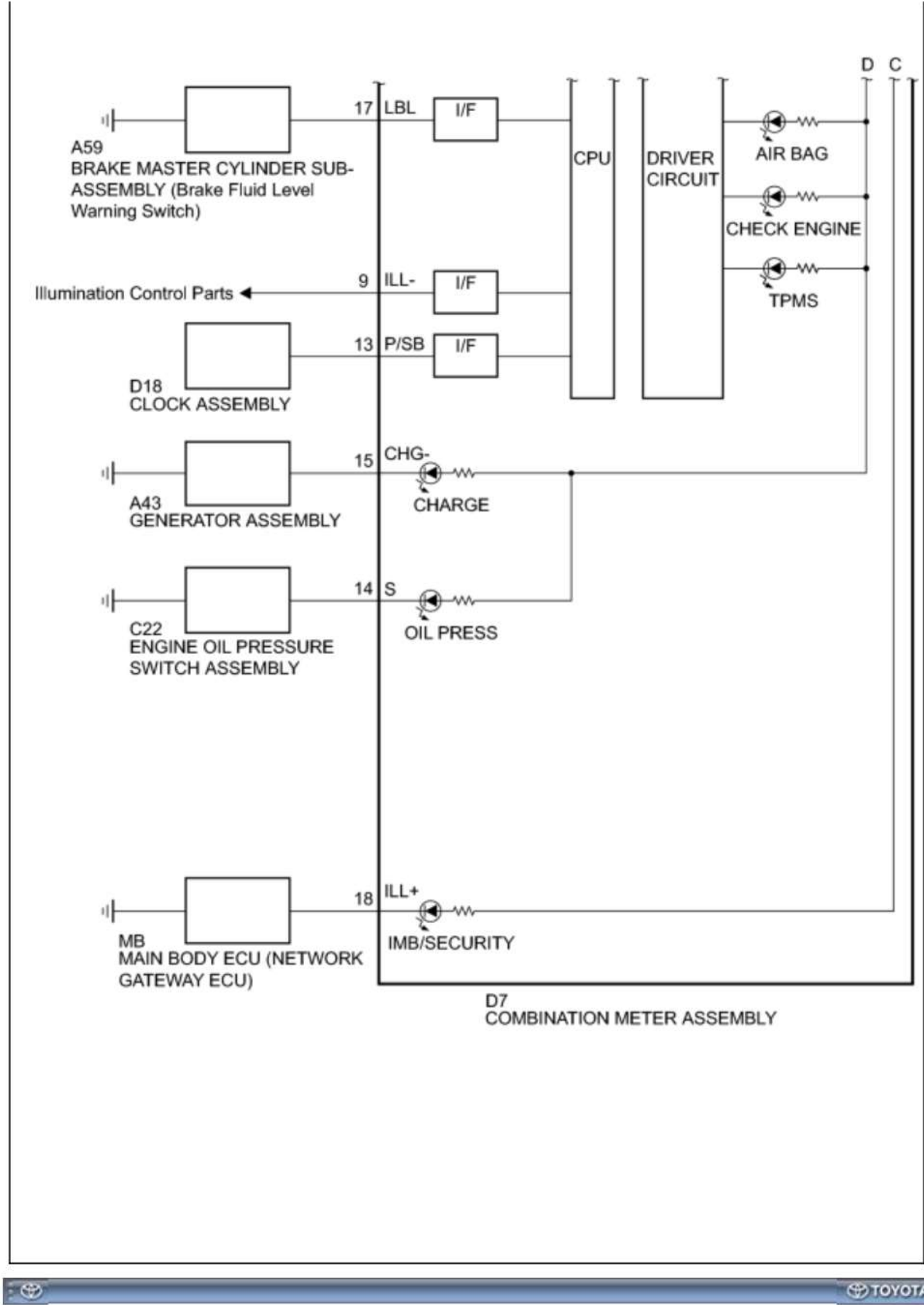


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Model Year: 2013	Model: FR-S	Doc ID: RM000001F8P015X
Title: METER / GAUGE / DISPLAY: METER / GAUGE SYSTEM: SYSTEM DIAGRAM (2013 FR-S)		

SYSTEM DIAGRAM







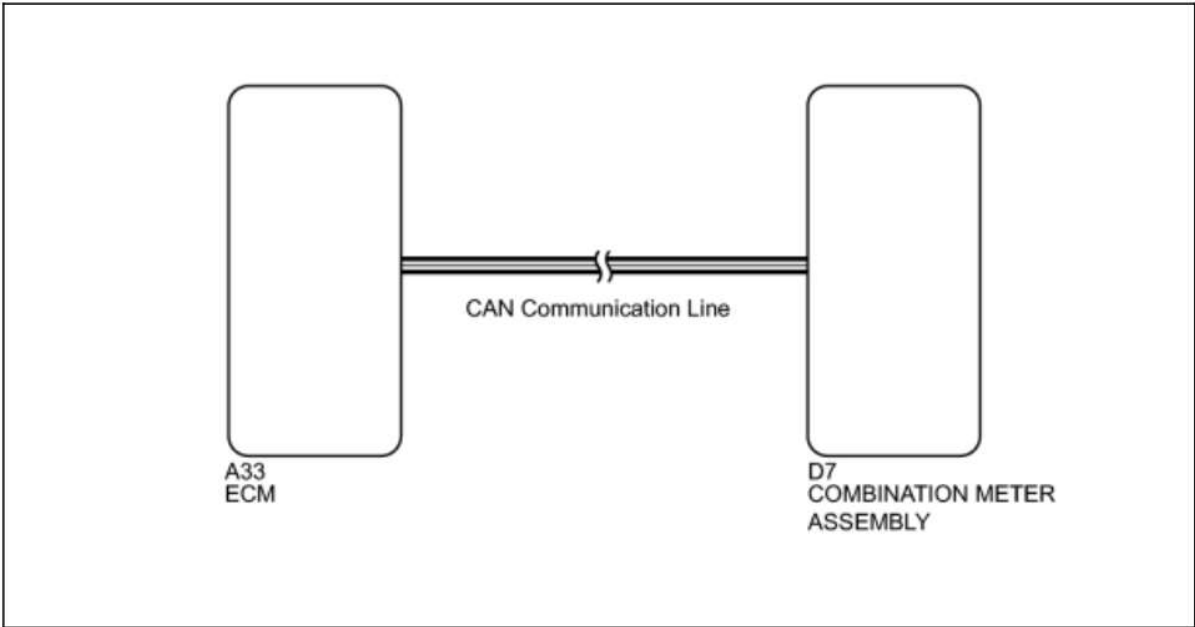
Last Modified: 3-27-2012	6.4 J	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000001YNY01SX
Title: METER / GAUGE / DISPLAY: METER / GAUGE SYSTEM: Tachometer Malfunction (2013 FR-S)		

Tachometer Malfunction

DESCRIPTION

The combination meter assembly controls the tachometer in accordance with the engine speed signals from the ECM through the CAN communication system.

WIRING DIAGRAM



INSPECTION PROCEDURE

PROCEDURE

1.	CHECK CAN COMMUNICATION SYSTEM
----	--------------------------------

(a) Check if CAN communication DTCs are output [INFO](#) .

Result

RESULT	PROCEED TO
DTCs are not output	A
DTCs are output	B

B

▶

GO TO CAN COMMUNICATION SYSTEM

A

▼

2.

PERFORM ACTIVE TEST USING TECHSTREAM (TACHOMETER OPERATION)

- (a) Connect the Techstream to the DLC3.
- (b) Turn the ignition switch to ON.
- (c) Turn the Techstream on.
- (d) Enter the following menus: Body Electrical / Combination Meter / Active Test.
- (e) According to the display on the tester, perform the Active Test.

Combination Meter

TESTER DISPLAY	TEST PART	CONTROL RANGE	DIAGNOSTIC NOTE
Tachometer Operation	Tachometer	0, 1000, 2000, 3000, , 4000, 5000, 6000, 7000 rpm	-

OK:

The engine speed displayed on the tester is approximately the same as that of the tachometer reading.

NG

▶

REPLACE COMBINATION METER ASSEMBLY

OK

▼

3.

READ VALUE USING TECHSTREAM (ENGINE RPM)

- (a) Connect the Techstream to the DLC3.
- (b) Start the engine.
- (c) Turn the Techstream on.
- (d) Enter the following menus: Body Electrical / Combination Meter / Data List.
- (e) According to the display on the tester, read the Data List.

Combination Meter

--	--	--	--

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
Engine Rpm	Engine speed Min.: 0 Max.: 12750	Approximately same as actual engine speed (when engine is running)	Unit: rpm

OK:

The engine speed displayed on the tester is approximately the same as that displayed on the combination meter assembly.

NOTICE:

Determine whether the value displayed on the tester is within the acceptable range by referring to the reference values described in "On-Vehicle Inspection" [INFO](#) .

NG ► **REPLACE COMBINATION METER ASSEMBLY**

OK
▼

4.	CHECK SFI SYSTEM
-----------	-------------------------

(a) Check if the SFI system outputs DTCs [INFO](#) .

Result

RESULT	PROCEED TO
DTCs are not output	A
DTCs are output	B

B ► **GO TO SFI SYSTEM**

A
▼

5.	READ VALUE USING TECHSTREAM (ENGINE SPEED)
-----------	---

- (a) Connect the Techstream to the DLC3.
- (b) Start the engine.
- (c) Turn the Techstream on.
- (d) Enter the following menus: Powertrain / Engine / Data List.

(e) According to the display on the tester, read the Data List.

Combination Meter

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
Engine Speed	Engine speed Min.: 0 Max.: 16383.75	Approximately same as actual engine speed (when engine is running)	Unit: rpm

OK:
The engine speed displayed on the tester is approximately the same as that displayed on the combination meter assembly.

NOTICE:
Determine whether the value displayed on the tester is within the acceptable range by referring to the reference values described in "On-Vehicle Inspection" INFO .

B  **GO TO SFI SYSTEM**

A


6.	REPLACE COMBINATION METER ASSEMBLY
-----------	---

(a) Replace the combination meter assembly with a new or a normal one INFO .

NG  **REPLACE ECM**

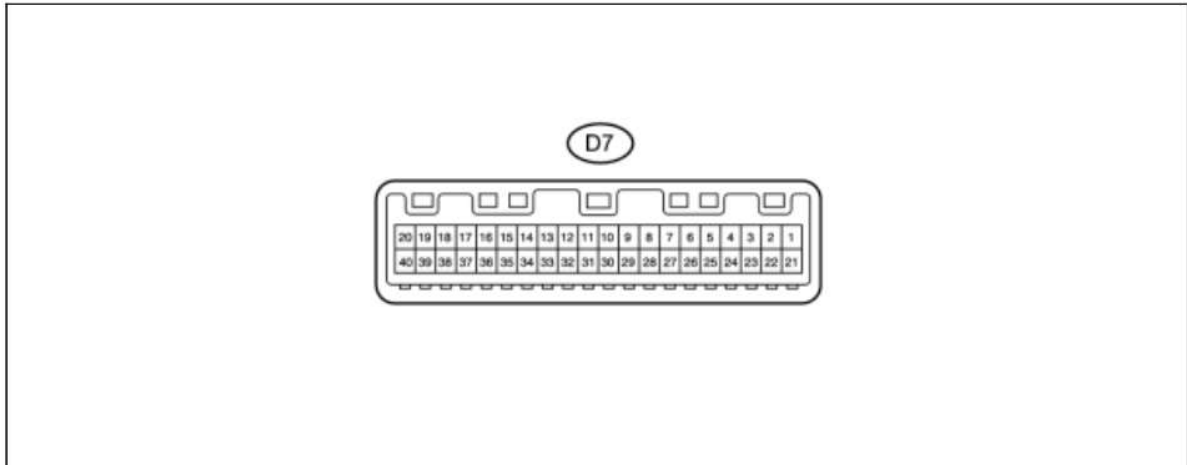
OK  **END**



Last Modified: 3-27-2012	6.4 U	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000001F8F014X
Title: METER / GAUGE / DISPLAY: METER / GAUGE SYSTEM: TERMINALS OF ECU (2013 FR-S)		

TERMINALS OF ECU

1. CHECK COMBINATION METER ASSEMBLY



(a) Measure the voltage and resistance of the wire harness side connector.

TERMINALS NO. (SYMBOL)	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
D7-1 (B) - Body ground	R-W - Body ground	Battery	Always	11 to 14 V
D7-2 (IG+) - Body ground	W-G - Body ground	Ignition switch signal	Ignition switch off → ON	Below 1 V → 11 to 14 V
D7-6 (CANH) - Body ground	BR - Body ground	CAN communication line	Ignition switch ON	Pulse generation
D7-7 (CANL) - Body ground	BR-W - Body ground	CAN communication line	Ignition switch ON	Pulse generation
D7-9 (ILL-) - Body ground	B-W - Body ground	Light control rheostat output signal	Ignition switch ON Light control rheostat all top open → all bottom open	Below 1 V → 11 to 14 V
D7-13 (P/SB) - Body ground	BR-R - Body ground	Front passenger seat inner belt output signal	Front passenger seat is occupied and its seat belt unfastened → fastened	Below 1 V → 11 to 14 V
D7-14 (S) - Body ground	LG - Body ground	Engine oil pressure signal	Engine oil pressure warning light ON → OFF	Below 1 V → 11 to 14 V

D7-15 (CHG-) - Body ground	G - Body ground	Charge warning light signal	Engine start Charge warning light ON → OFF	Below 1 V → 11 to 14 V
D7-17 (LBL) - Body ground	W-L - Body ground	Brake fluid level warning light signal	Ignition switch ON Brake fluid level warning light ON → OFF	Below 1 V → 11 to 14 V
D7-18 (ILL+) - Body ground	V - Body ground	Security warning light signal	Ignition switch ON Security warning light blink → OFF	Below 1 V ↔ 11 to 14 V → 11 to 14 V
D7-20 (ES1) - Body ground	B-Y - Body ground	Ground	Always	Below 1 Ω
D7-21 (LR) - Body ground	GR - Body ground	Right turn signal	Ignition switch ON Right turn indicator light blink → OFF	Below 1 V ↔ 11 to 14 V → 11 to 14 V
D7-22 (LL) - Body ground	W-R - Body ground	Left turn signal	Ignition switch ON Left turn indicator light blink → OFF	Below 1 V ↔ 11 to 14 V → 11 to 14 V
D7-24 (TAM) - D7-25 (SG-)	L - W	Ambient temperature sensor signal	Ignition switch ON at 25°C (77°F)	1.35 to 1.75 V
D7-27 (L) - D7-28 (FS-)	LG - L	Fuel level signal	Fuel level is FULL → EMPTY	Below 1 V → 4.5 to 9.0 V
D7-30 (E) - Body ground	L-R - Body ground	Light control rheostat ground	Always	Below 1 Ω
D7-31 (TR) - Body ground	Y - Body ground	Light control rheostat input signal	Light control rheostat all top open → all bottom open	510 Ω → 100 Ω
D7-32 (T) - Body ground	G-W - Body ground	Ignition switch signal	Ignition switch off → ON	Below 1 V → 3.6 to 4.6 V
D7-33 (TC) - Body ground	BR - Body ground	Light control rheostat signal	Light control rheostat all top open → Light control rheostat (cancel switch) ON	10 kΩ or higher → Below 1 Ω
D7-34 (DISP) - Body ground	R - Body ground	DISP switch signal	DISP switch ON → OFF	Below 1 Ω → 10 kΩ or higher
D7-36 (TRIP) - Body ground	P - Body ground	ODO/TRIP switch signal	ODO/TRIP switch ON → OFF	Below 1 Ω → 10 kΩ or higher
D7-37 (DBKL) - Body ground	R-B - Body ground	Driver seat inner belt input signal	Driver seat is seat belt unfastened → fastened	Below 1 V → 11 to 14 V
D7-38 (PBKL) - Body ground	R-G - Body ground	Airbag sensor assembly input signal	Front passenger seat is occupied and its seat belt unfastened → fastened	Below 1 V → 11 to 14 V

D7-40 (ES2) - Body ground	B-Y - Body ground	Ground	Always	Below 1 Ω
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If the result is not as specified, the combination meter assembly may have a malfunction.



Last Modified: 3-27-2012	6.4 C	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000003UOJ00MX
Title: METER / GAUGE / DISPLAY: METER / GAUGE SYSTEM: U0073,U0100,U0122,U0131,U0140,U0151: Control Module Communication Bus "A" Off (2013 FR-S)		

DTC	U0073	Control Module Communication Bus "A" Off
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DTC	U0100	Lost Communication with ECM / PCM "A"
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DTC	U0122	Lost Communication with Vehicle Dynamics Control Module
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DTC	U0131	Lost Communication with Power Steering Control Module
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DTC	U0140	Lost Communication with Body Control Module
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DTC	U0151	Lost Communication with Restraints Control Module
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DESCRIPTION

The combination meter communicates with the ECM, skid control ECU (brake actuator assembly), power steering ECU assembly, main body ECU (network gateway ECU) and airbag sensor assembly via the CAN communication system.

DTC NO.	DTC DETECTION CONDITION	TROUBLE AREA
U0073	Lost Communication with Each ECU	CAN communication system
U0100	ECM communication error	- CAN communication system - ECM
U0122	Skid control ECU (brake actuator assembly) communication error	- CAN communication system - Skid control ECU (brake actuator assembly)
U0131	Power steering ECU assembly communication error	- CAN communication system - Power steering ECU assembly
U0140	Main body ECU (network gateway ECU) communication error	- CAN communication system - Main body ECU (network gateway ECU)

U0151	Airbag sensor assembly communication error	- CAN communication system - Airbag sensor assembly
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INSPECTION PROCEDURE

PROCEDURE

1.	CONFIRM DTC OUTPUT
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(a) Check DTC  .

RESULT	PROCEED TO
CAN communication DTC is not output	A
CAN communication DTC is output	B

B  **GO TO CAN COMMUNICATION SYSTEM**

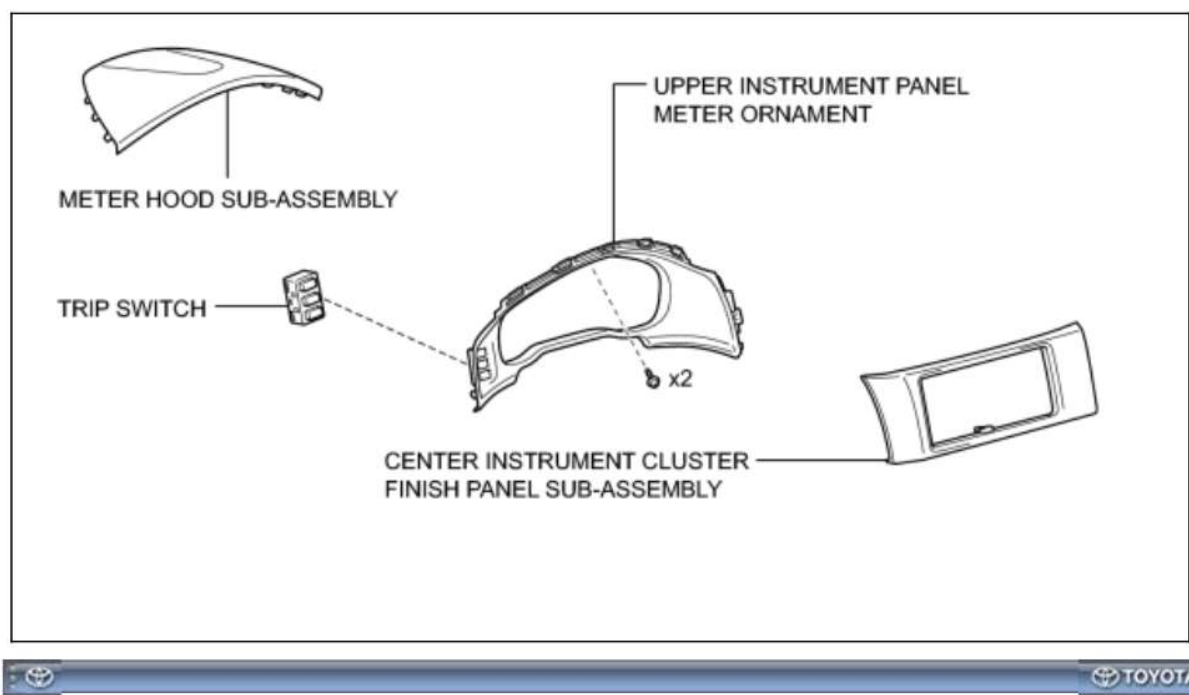
A  **USE SIMULATION METHOD TO CHECK**



Last Modified: 3-27-2012	6.4 K	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM0000042TF004X
Title: METER / GAUGE / DISPLAY: TRIP SWITCH: COMPONENTS (2013 FR-S)		

COMPONENTS

ILLUSTRATION



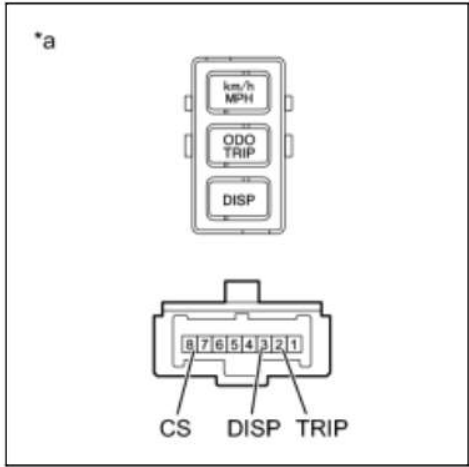
Last Modified: 3-27-2012	6.4 G	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000001862038X
Title: METER / GAUGE / DISPLAY: TRIP SWITCH: INSPECTION (2013 FR-S)		

INSPECTION

1. INSPECT TRIP SWITCH

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

Standard Resistance:



TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
2 (TRIP) - 1	Trip switch off	10 kΩ or higher
	Trip switch on	Below 1 Ω
3 (DISP) - 1	Display switch off	10 kΩ or higher
	Display switch on	Below 1 Ω
8 (CS) - 1	Unit switch off	10 kΩ or higher
	Unit switch on	Below 1 Ω

Text in Illustration

*a	Component without harness connected (Trip Switch)
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Last Modified: 3-27-2012	6.4 A	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM0000042TE004X
Title: METER / GAUGE / DISPLAY: TRIP SWITCH: INSTALLATION (2013 FR-S)		

INSTALLATION

1. INSTALL TRIP SWITCH

(a) Engage the 2 claws to install the trip switch.

2. INSTALL UPPER INSTRUMENT PANEL METER ORNAMENT [INFO](#)

3. INSTALL METER HOOD SUB-ASSEMBLY [INFO](#)

4. INSTALL CENTER INSTRUMENT CLUSTER FINISH PANEL SUB-ASSEMBLY [INFO](#)



Last Modified: 3-27-2012	6.4 A	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM0000042TG004X
Title: METER / GAUGE / DISPLAY: TRIP SWITCH: REMOVAL (2013 FR-S)		

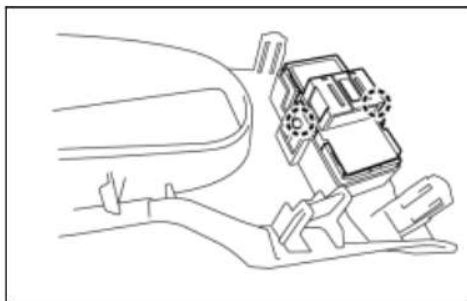
REMOVAL

1. REMOVE CENTER INSTRUMENT CLUSTER FINISH PANEL SUB-ASSEMBLY [INFO](#)

2. REMOVE METER HOOD SUB-ASSEMBLY [INFO](#)

3. REMOVE UPPER INSTRUMENT PANEL METER ORNAMENT [INFO](#)

4. REMOVE TRIP SWITCH



(a) Disengage the 2 claws to remove the trip switch.

