| | | |
|---|---|---|
| **Last Modified:** 03-12-2013 | 6.4 F | **Doc ID:** NM1000000005IIP |
| **Model Year:** 2013 | **Model:** RAV4 | **Prod Date Range:** [12/2012 - ] |
| **Title:** METER / GAUGE / DISPLAY: METER / GAUGE SYSTEM: COMBINATION METER; 2013 MY RAV4 [12/2012 - ] | | |

# COMBINATION METER

## 1. SYSTEM CONTROL

(a) Operating Condition

(1) Eco Driving Indicator

- Eco Driving Indicator starts to operate when all of the following conditions are met:

| | |
|---|---|
| Condition | Ignition switch is ON. |
| | Engine is running. |
| | Shift lever is in D. |
| | Drive mode is Normal or ECO mode. |

- Eco Driving Indicator stops operation when any of the following conditions is met:

| | |
|---|---|
| Condition | Ignition switch is off. |
| | Engine is stopped. |
| | Shift lever is in any position other than D. |
| | Drive mode is any other mode except Normal or ECO mode. |

## 2. FUNCTION

(a) Buzzer Function

(1) The table below shows the warning and reminder functions of the buzzer in the combination meter assembly:

| ITEM |
|---|
| • Front Seat Belt Warning<br>• EPS Warning<br>• Smart Key System Warning<br>• Immobiliser System<br>• Parking Brake Unreleased Warning<br>• Door Open Driving Warning<br>• Downshift Reject Warning<br>• Light Reminder<br>• Sliding Roof Open Warning<br>• Key Reminder<br>• Brake Buzzer |

**HINT:**

The buzzer function differs by vehicle specification.

(b) Multi-information Display

(1) The multi-information display can be switched by operating the DISP switch located on the steering pad switch assembly.

(2) The multi-information display indicates as follows:

| DISPLAY | OUTLINE*1 |
|---|---|
| Cruise Information | In the cruise information display, 6 types of information can be displayed:<br>• Current Fuel Consumption<br>• Average Fuel Consumption<br>• Average Vehicle Speed<br>• Cruising Range<br>• Outside Temperature<br>• ECO Driving Indicator Zone Display*2 |
| Water Temperature Gauge | The engine coolant temperature date are displayed with bar graph. |
| Customization*2 | The Eco Driving Indicator Light can be set up from this screen. The customization display is available only while the vehicle is stopped. If vehicle movement is detected during setup, the setup will be canceled automatically. |

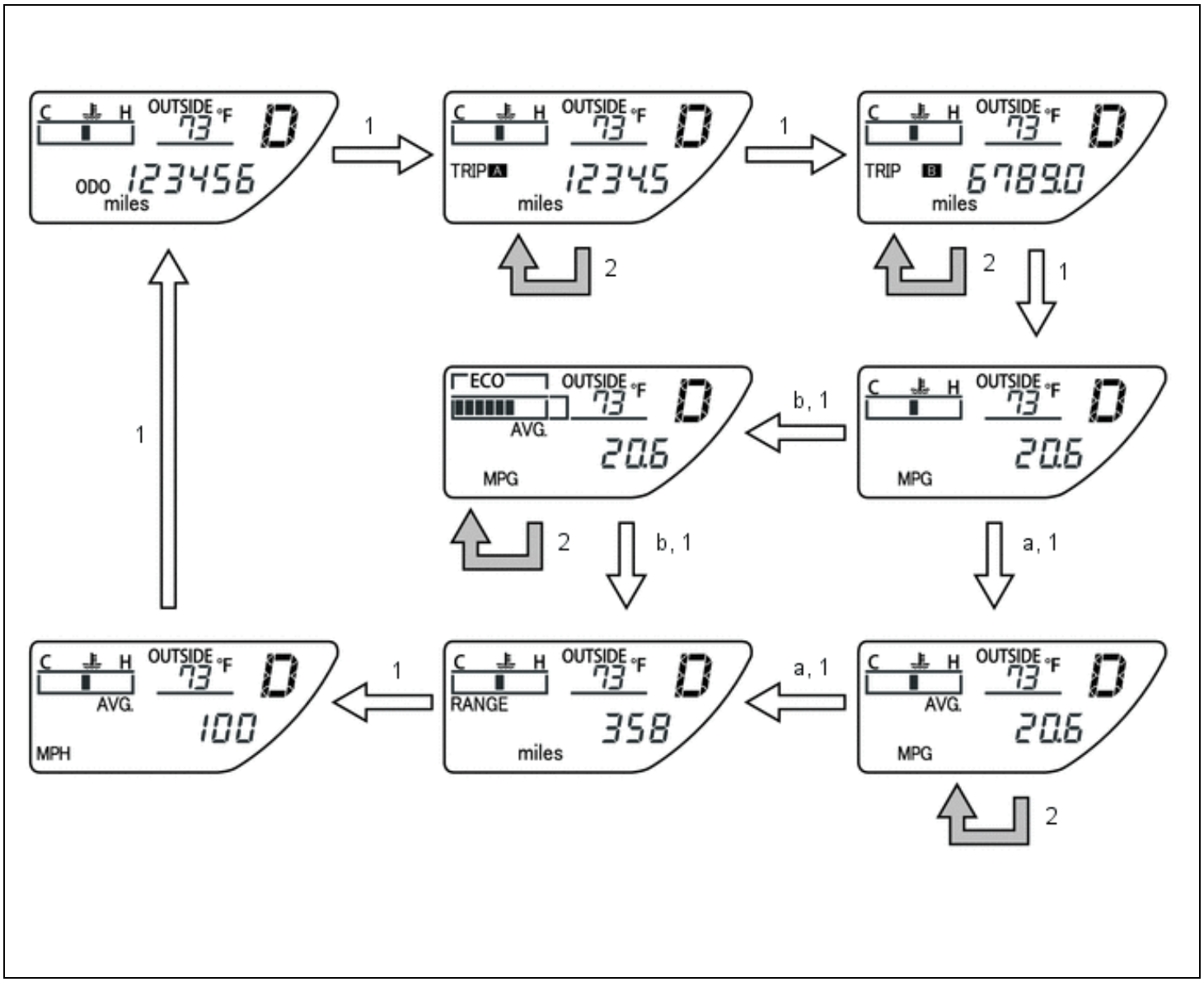
**HINT:**

*1: The items displayed differ by vehicle specification.

*2: When the ECO driving indicator zone display is selected by customization function.

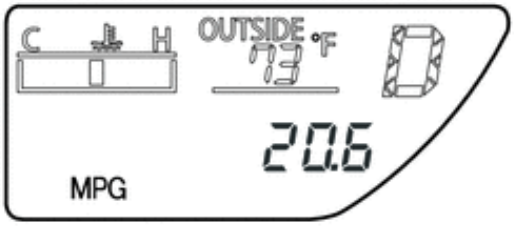
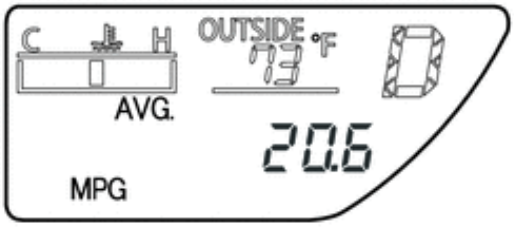
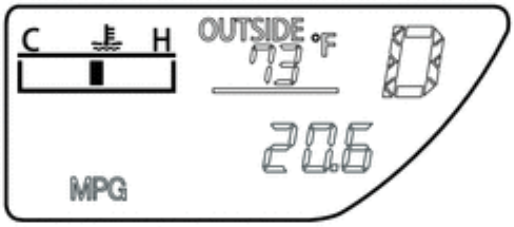
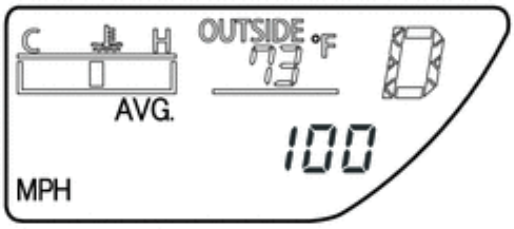
(3) Cruise Information Display

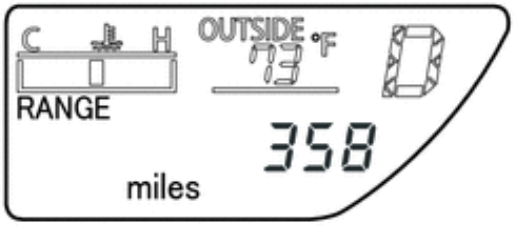
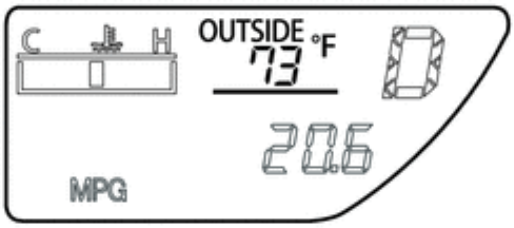
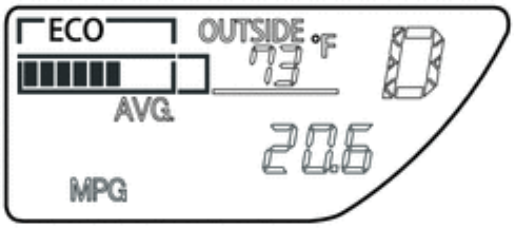
The cruise information display can be switched by operating the DISP switch. The counter can be reset by pressing and holding the DISP switch for 0.8 seconds or more.




| NO. | CONDITION |
|---|---|
| a | Standard display mode |
| b | Eco display mode |
| 1 | The DISP switch is operated for less than 0.8 seconds. |
| 2 | The DISP switch is operated for 0.8 seconds or more to reset. |

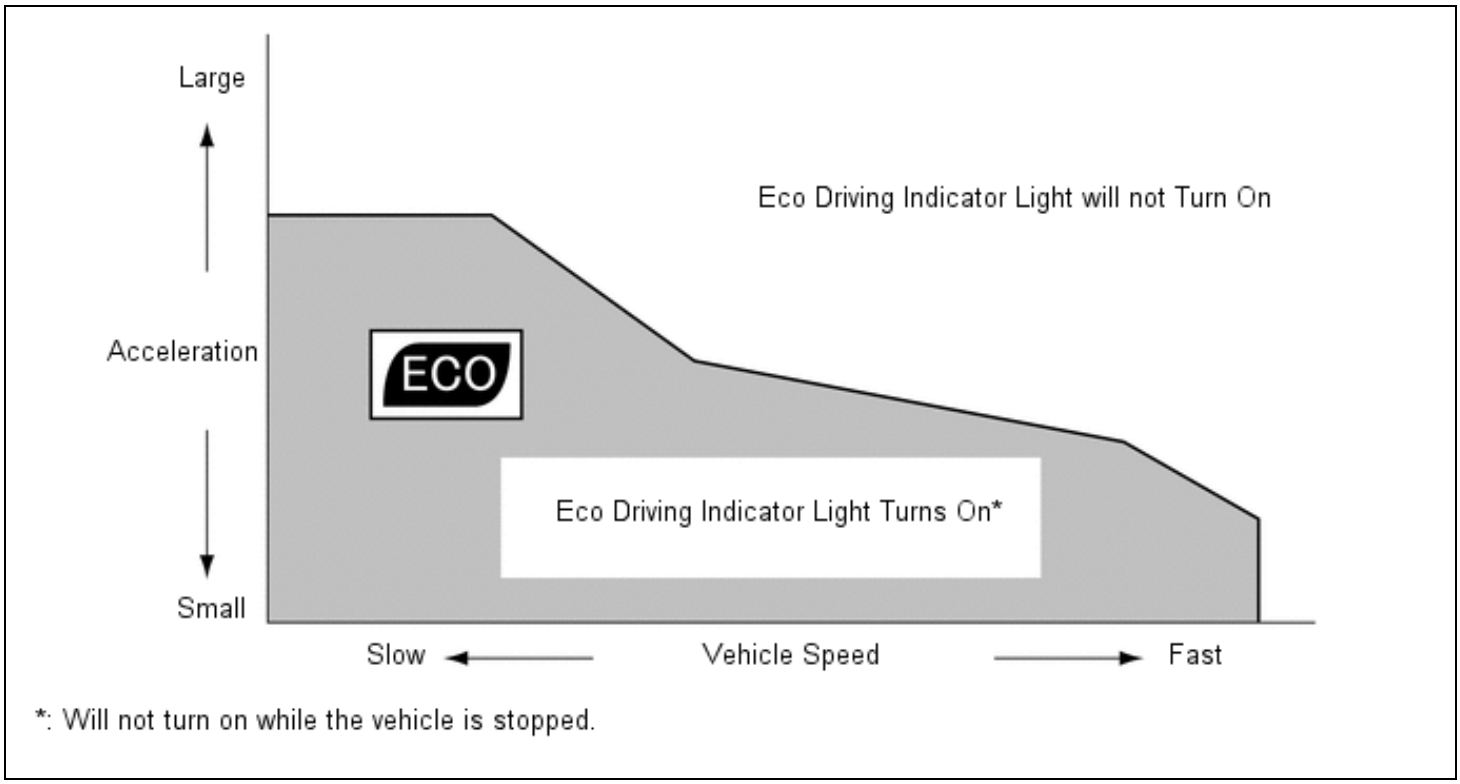
| DISPLAY | | OUTLINE |
|---|---|---|
| | | Displays the value that has been calculated by the meter ECU, which is |

| | | |
|---|---|---|
| Current Fuel Consumption |  | based on the driven distance and the fuel consumption volume (fuel injection amount signal from the ECM via CAN), provided that the ignition switch is turned ON. |
| Total Average Fuel Consumption |  | • Displays the value that has been calculated by the meter ECU, which is based on the driven distance and the fuel consumption volume (fuel injection amount signal from the ECM via CAN) since the counter was reset.<br>• The display updates every 10 seconds. |
| Water Temperature Gauge |  | The engine coolant temperature date are displayed with bar graph. |
| Average Vehicle Speed |  | • Displays the value that has been calculated by the meter ECU, which is based on the elapsed time and driven distance since the ignition switch was turned ON or since the counter was reset.<br>• The display updates every 10 seconds. |
| | | |

| | | |
|---|---|---|
| Cruising Range |  | Displays the value that has been calculated by the meter ECU, which is based on the fuel consumption data that the meter ECU continuously monitors and stores in its memory, and the residual fuel volume data, provided that the ignition switch is turned ON. |
| Outside Temperature |  | • Displays the outside temperature.<br>• The display updates every 3.84 second. |
| ECO Driving Indicator Zone Display |  | Eco driving ratio based on acceleration is shown with a bar graph. |

(c) Eco Driving Indicator

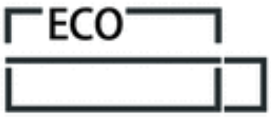
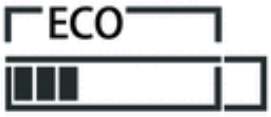
(1) The operating diagram of Eco Driving Indicator is as follows:




(2) When the ECM, using information (such as vehicle speed, accelerator pedal depressed volume, engine speed signal (engine RPM data), and so on), calculates that the vehicle is driven in an Eco-friendly manner, it turns on Eco Driving Indicator Light and shows the bar graph of ECO Driving Indicator Zone Display within Zone of Eco driving.

(3) When the ECM calculates that the acceleration exceeds Zone of Eco driving, it turns off Eco Driving Indicator Light and blinks the right side of ECO Driving Indicator Zone Display.

(4) The operation of Eco Driving Indicator is as follows:

| VEHICLE CONDITION | ECO DRIVING INDICATOR ZONE DISPLAY | ECO DRIVING INDICATOR LIGHT |
|---|---|---|
| Stopped |   | Turns off |
| ECO Driving |   | Turns on |
| Non-ECO Driving | | Turns off |

(5) Eco Driving Indicator can be deactivated in the following ways: Eco Driving Indicator Light can be

deactivated from Eco Driving Indicator Light customization display of the multi-information display.

(d) Front Seat Belt Warning Function

(1) When the ignition switch is ON, this system detects the condition of the seat belts based on the signals from the driver and front passenger seat belt buckle switches and the occupant detection sensor. And if the driver seat belt is unbuckled, the buzzer sounds 5 times.

(2) When the vehicle speed exceeds 20 km/h (12.4 mph), the buzzer sounds only 1 time to remind the fact that the seat belt is unbuckled. After 30 seconds, the buzzer sounds intermittently to emphasize the fact that the seat belt is unbuckled. After 9.6 seconds, the sound changes for emphasis. The sound continues for 20 seconds. Once a buzzer begins to sound, it will continue until the seat belt is buckled or the ignition switch is turned off.

**HINT:**

Upon receiving a request from a user who cannot wear a seat belt for a special reason, the buzzer warning can be canceled using the Techstraem. For details, refer to the Repair Manual.

(3) Occupant Detection Sensor

- The occupant detection sensors are installed on brackets connecting the seat rail and the seat frame. The resistance values of these sensors, which vary in accordance with the distortion that acts on the brackets, are output to the occupant detection ECU.
- The occupant detection ECU constantly monitors the weight on the front passenger seat, and makes a judgment in accordance with the signals from the occupant detection sensor and the state of the front passenger seat belt buckle switch.
- The occupant detection ECU transmits the signals to the center airbag sensor assemby.

## 3. FAIL-SAFE

(a) ECO Driving Indicator

(1) When any of the following conditions are met, Eco Driving Indicator Light is turned off and ECO Driving Indicator Zone Display is stopped:

- Engine Signal Malfunction
- CAN Signal Malfunction