

METER

■ COMBINATION METER ASSEMBLY

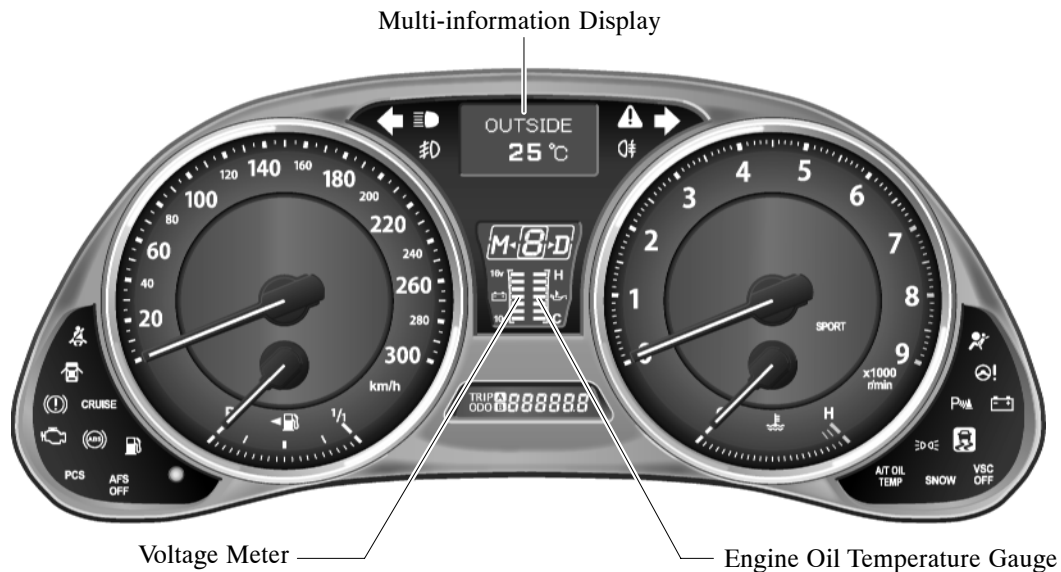
1. General

A combination meter assembly with an Optitron type display is used. The three-dimensional structure and aluminum meter rings produce a sporty feel.

- The combination meter assembly has the following features:

Feature	Outline
Fun to Drive	<ul style="list-style-type: none"> • A speedometer with a scale up to 300 km/h (190 mph) expresses the height of driving performance. • The speedometer and tachometer needles illuminate in blue, expressing individuality. • An illumination control which allows for anticipation of a pleasant drive is used. For details, see page BE-56.
Functionality	<ul style="list-style-type: none"> • Multi-information display that can display six modes (cruise information, warning, dynamic radar cruise control system display, LEXUS parking assist-sensor system display, multi-switch, diagnosis) is used. For details, see page BE-58. • An engine oil temperature gauge and voltage meter have been added, ensuring sports driving functionality. • Using the satellite switch in combination with the multi-switch mode allows them to act as a switch for the maximum of four systems, thus reducing the number of the switches equipped on the vehicle. For details, see page BE-64. • To encourage upshifting when in M position or when the paddles have been operated, an engine speed limit warning buzzer sounds when the maximum permitted engine speed is reached. For details, see page BE-66.
Ease of Operation	<ul style="list-style-type: none"> • In the cruise information mode, the display can be switched by using the DISP switch on the steering wheel. For details, see page BE-60. • In the multi-switch mode, the display can be switched by using the satellite switch (LH switch, ON/OFF switch, RH switch). For details, see page BE-64.
Reduce consumption of electrical energy	LEDs (Light Emitting Diodes) are used for warning lights and indicator lights.

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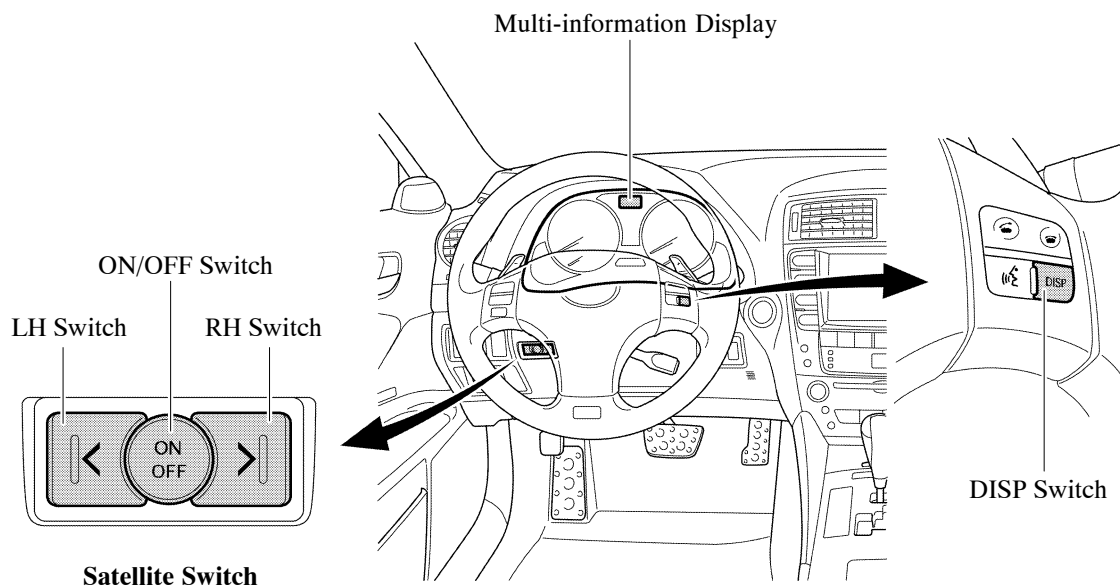
LHD Models

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RHD Models

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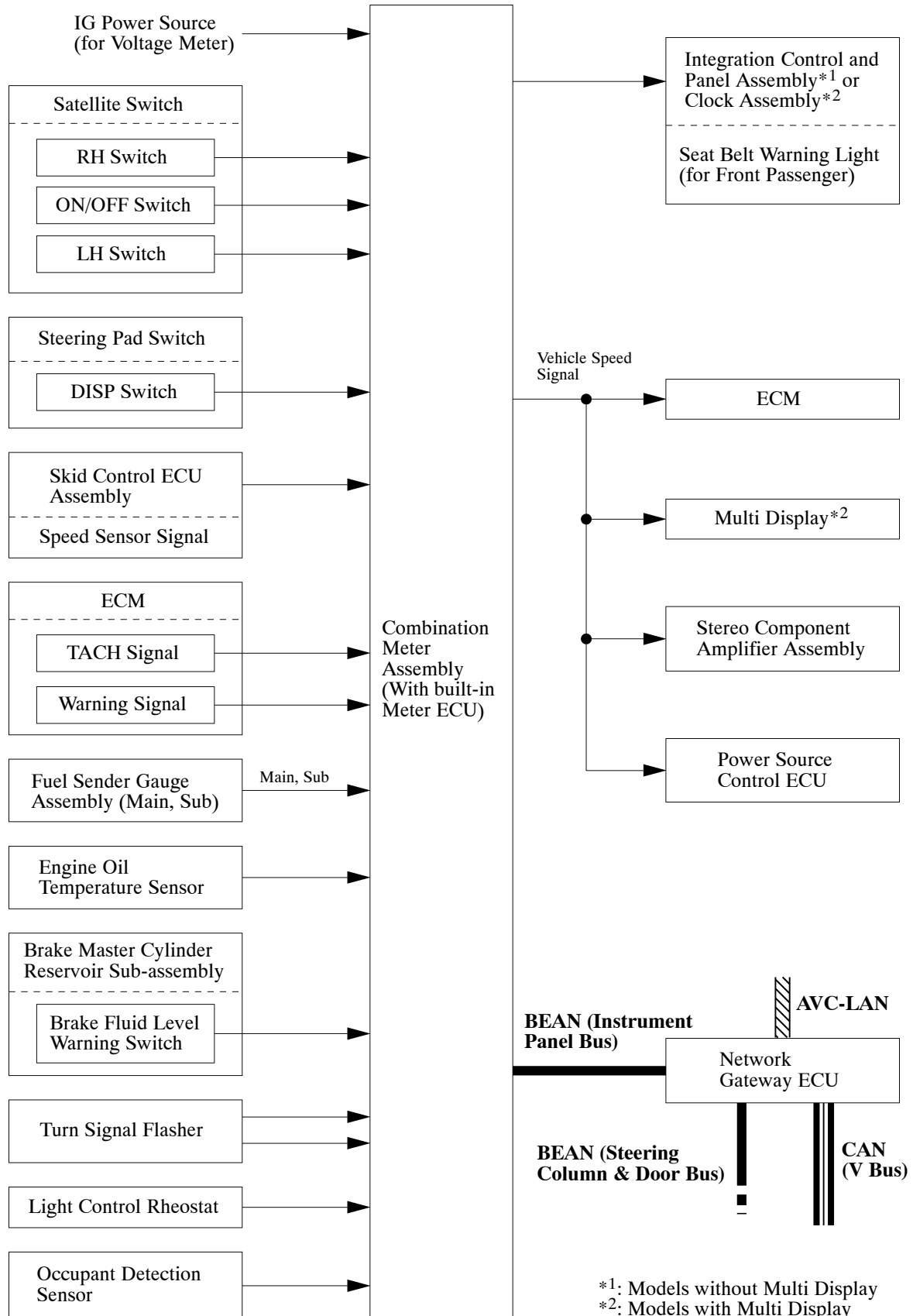


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Service Tip

If an LED malfunctions in the combination meter assembly, the combination meter assembly must be replaced. For details, see the LEXUS IS F Repair Manual (Pub. No. RM08E0E).

2. System Diagram



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► Input and output communication signals of the combination meter assembly ◀

Protocol	ECU	Input Signal	Output Signal
BEAN (Instrument Panel Bus)	Clearance Warning ECU Assembly* ¹	<ul style="list-style-type: none"> • Display Request Signal • Indicator Signal • Area Signals (Front LH, Front RH, Rear LH, Rear RH, Rear Center) • Warning Request Signal 	<ul style="list-style-type: none"> • ON/OFF Switch Signals • Vehicle Speed Signal
	Headlight Swivel ECU (AFS ECU)	<ul style="list-style-type: none"> • AFS OFF Indicator Signal • AFS Warning Signal 	<ul style="list-style-type: none"> • ON/OFF Switch Signals • Vehicle Speed Signal
	Air Conditioning Amplifier Assembly	Outside Temperature Signal	Vehicle Speed Signal
BEAN (Steering Column & Door Bus)	Main Body ECU RH (Cowl Side J/B RH)	<ul style="list-style-type: none"> • Courtesy Switch Signals (Except Hood) • Door Lock Detection Switch Signals • Intrusion Sensor Signal • Headlight Illuminate Signal • Taillight Illuminate Signal • HI Beam Signal • Front Fog Light Illuminate Signal • Rear Fog Light Illuminate Signal • ACC Signal • Dimmer Request Signal 	<ul style="list-style-type: none"> • ON/OFF Switch Signals • Vehicle Speed Signal • Rheostat Signal • Driving Distance Signal
	Main Body ECU LH (Cowl Side J/B LH)	-	<ul style="list-style-type: none"> • Rheostat Signal • Vehicle Speed Signal
	Power Window Regulator Master Switch Assembly	-	Vehicle Speed Signal
	Power Source Control ECU	Power Source Control ECU Information Signal	Vehicle Speed Signal
	Multiplex Network Body ECU (Front Controller)	<ul style="list-style-type: none"> • Washer Fluid Level Warning Signal • Hood Courtesy Switch Signal 	-
	Multiplex Tilt & Telescopic ECU	-	Vehicle Speed Signal
	Seat ECU (D)	-	Vehicle Speed Signal
	Seat ECU (P)	-	Vehicle Speed Signal
	Certification ECU (Smart Key ECU Assembly)	<ul style="list-style-type: none"> • Warning Signal • Steering Lock Signal 	Vehicle Speed Signal
	Sliding Roof Drive Gear Sub-assembly (Sliding Roof ECU)* ²	Warning Request Signal	Vehicle Speed Signal
	Rain Sensor	-	Vehicle Speed Signal

(Continued)

Protocol	ECU	Input Signal	Output Signal
CAN	ECM	<ul style="list-style-type: none"> • Water Temperature Signal • Shift Position Signals (P, R, N, D) • M Mode Indicator Signal • D Position (Fixed Range Mode) Indicator Signal • Current Gear Position Signal • Shift Range Position Signal • Fuel Injection Information Signal • Cruise Indicator Signal • Pattern Select Indicator Signals • Engine Oil Pressure Warning Signal • Low Engine Oil Level Warning Signal • ATF Temperature Warning Signal • Charge Warning Signal • Downshift Warning Signal • Warning Buzzer Signal • Target Detection Signal*³ • Target Approach Signal*³ • Distance Time Signal*³ • Warning Message Signals*³ 	Vehicle Speed Signal
	Skid Control ECU Assembly	<ul style="list-style-type: none"> • Brake System Warning Signal • SLIP Warning Signal • Parking Brake Switch Signal • ABS Warning Signal • VSC Warning Signal • PCS Warning Signal*⁴ • PCS Brake Assist Standby Signal*⁴ 	ON/OFF Switch Signals
	Center Airbag Sensor Assembly	<ul style="list-style-type: none"> • Seat Belt Buckle Switch Signal (for Driver) • SRS Warning Signal 	Vehicle Speed Signal
	Power Steering ECU Assembly	P/S Warning Signal	-
	Seat Belt Control ECU* ⁴	PCS Warning Signal	-
	Distance Control ECU Assembly * ³	Vehicle-to-vehicle Distance Information Signal	-
	Parking Assist ECU* ⁵	-	Vehicle Speed Signal

*1: For LEXUS Parking Assist-sensor System

*2: For Sliding Roof System

*3: For Dynamic Radar Cruise Control System

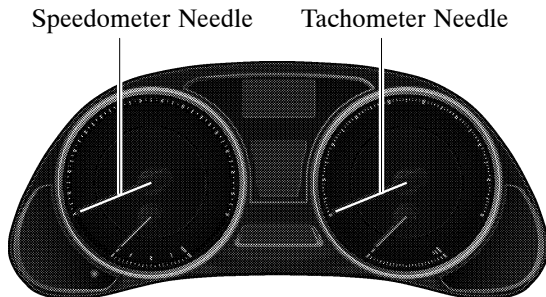
*4: For Pre-crash Safety System

*5: For Parking Assist Monitor System

3. Illumination Control

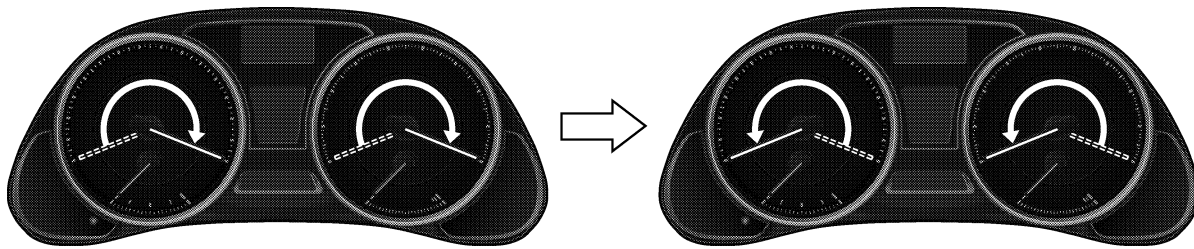
When the engine switch is turned on (IG), the illumination control operates as follows. However, all illumination other than the tachometer needle turns off while the engine is cranking.

- (1) The speedometer and tachometer needles light up.



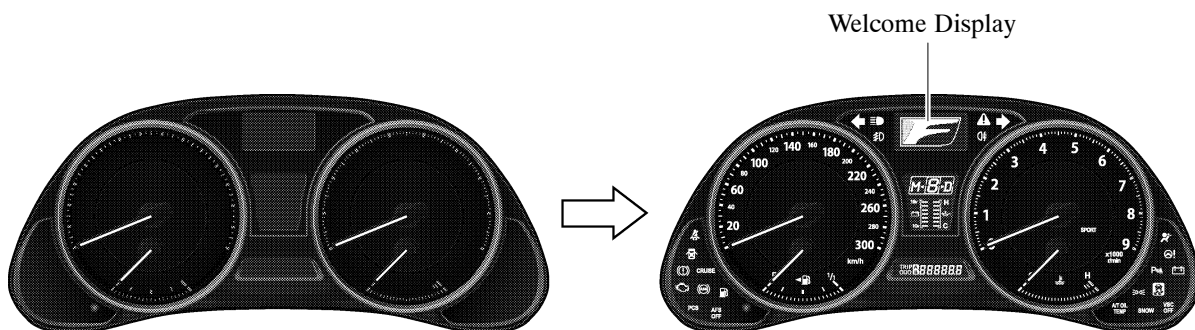
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- (2) These needles move to their maximum position and return to zero.



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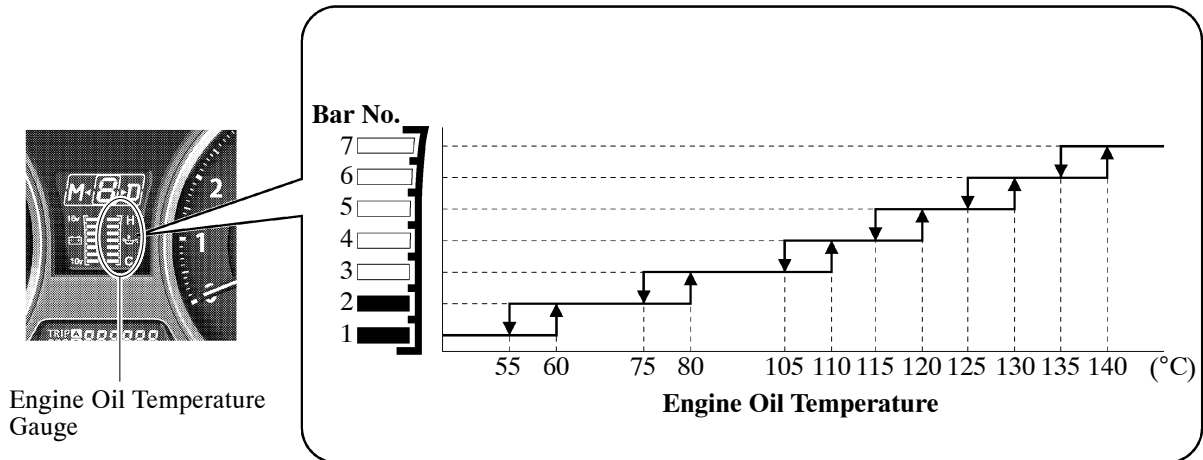
- (3) The fuel gauge and water temperature gauge needles light up.
- (4) The warning lights, indicator lights, LCD (Liquid Crystal Display), and meter panel illumination come on. At the same time, a welcome display is shown in the multi-information display.



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4. Engine Oil Temperature Gauge

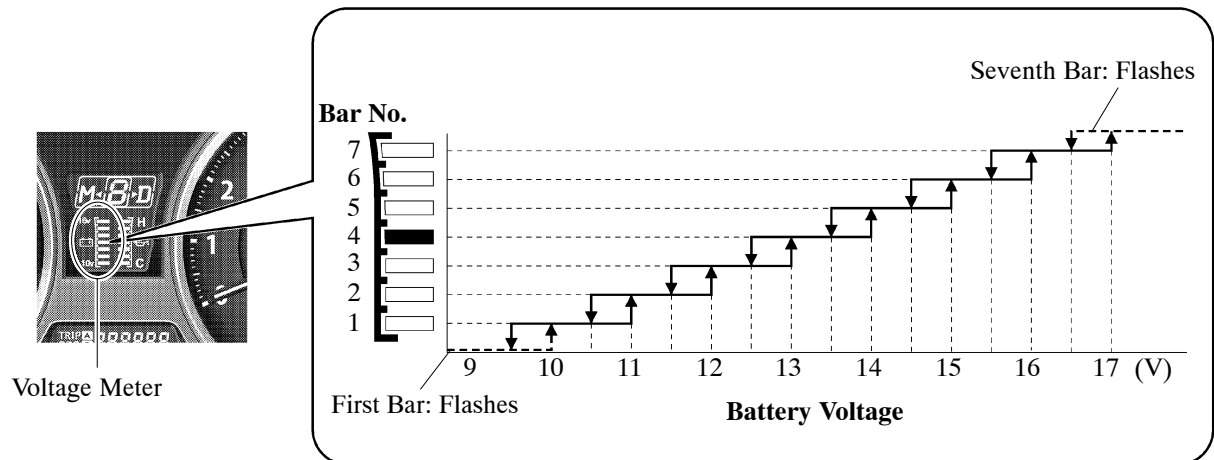
The engine oil temperature gauge displays the engine oil temperature using seven bars. The meter ECU calculates the engine oil temperature based on signals from the engine oil temperature sensor.



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5. Voltage Meter

The voltage meter displays the battery voltage using seven bars. If the battery voltage is too low, the first bar will flash to inform the driver. If the voltage is too high, the seventh bar will flash. When the engine switch is on (IG), the meter ECU determines the battery voltage based on the power source voltage supplied to it.



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6. Multi-information Display

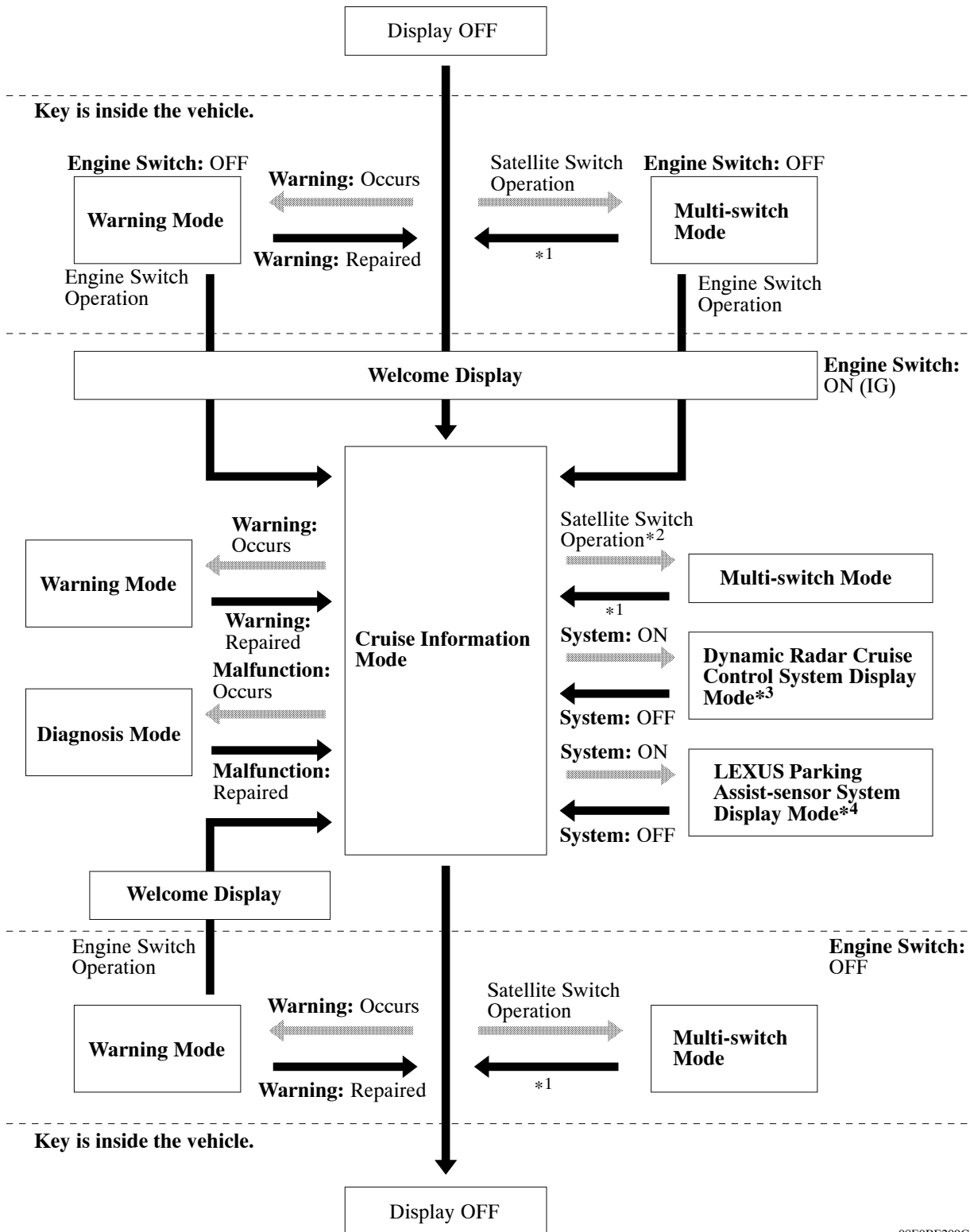
General

The multi-information display has six modes:

Mode	Outline
Cruise Information Mode (See page BE-60)	<ul style="list-style-type: none"> In the cruise information mode, seven types of information (Outside Temperature, Driving Range, Average Fuel Consumption, Average Fuel Consumption After Refueling, Current Fuel Consumption, Average Speed, and Gear Position) can be displayed. The display can be switched by using the DISP switch.
Warning Mode (See page BE-61)	The warning mode display will interrupt the multi-information display immediately when a warning occurs.
Multi-switch Mode (See page BE-64)	<ul style="list-style-type: none"> In the multi-switch mode, 4 switches (Intrusion Sensor ON/OFF, SONAR ON/OFF, AFS ON/OFF, PCS ON/OFF) can be displayed. The switches can be changed using the satellite switch (RH switch, ON/OFF switch, LH switch).
Dynamic Radar Cruise Control System Display Mode (See page BE-252)	Displays the operating condition of the dynamic radar cruise control System.
LEXUS Parking Assist-sensor System Display Mode (See page BE-130)	Displays the location of an obstacle and the approximate distance between the vehicle and the obstacle and displays malfunction warning messages about sensor freezing or presence of dirt on the sensors.
Diagnosis Mode	DTCs (Diagnostic Trouble Codes) for the brake control system (TRC and VSC) can be displayed.

The multi-information display modes can be switched as shown in the flow chart below:

Key is not inside the vehicle.



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*1: Automatically returns to the previous display 6 seconds after the satellite switch is operated, or returns to the previous display immediately if the DISP switch is operated.

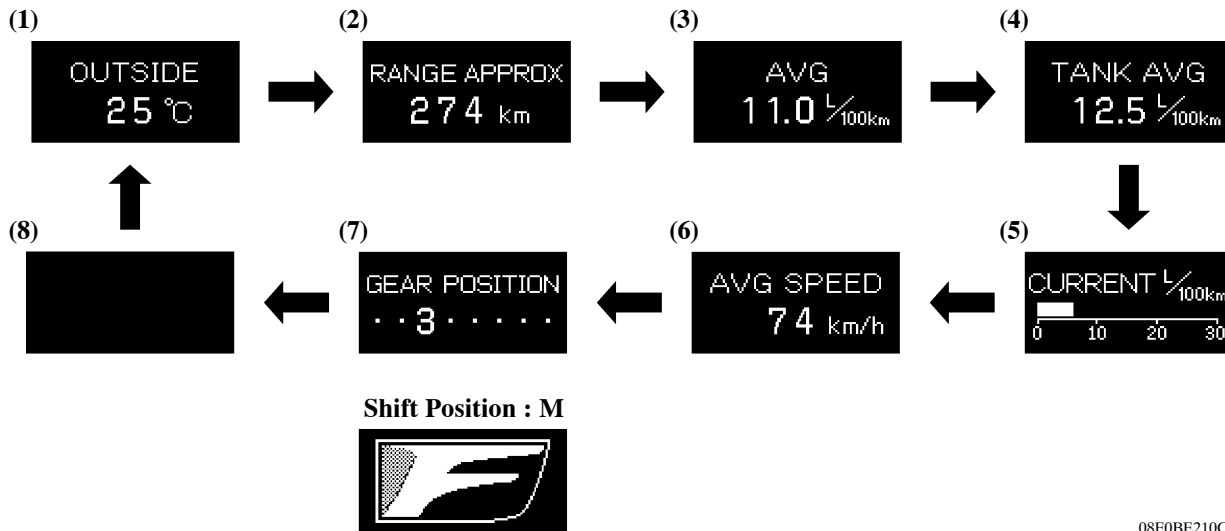
*2: Vehicle speed is 5 km/h (3 mph) or less. However, the SONAR switch will be displayed regardless of the vehicle speed.

*3: For details, see page BE-252.

*4: For details, see page BE-130.

Cruise Information Mode

The cruise information is displayed in the following order each time the DISP switch is pressed.



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Information		Outline
(1)	Outside Temperature	Displays outside temperature in accordance with the outside temperature sensor signal from the air conditioning amplifier assembly.
(2)	Driving Range	<ul style="list-style-type: none"> Displays a value that has been calculated by the meter ECU. When the engine switch is on (IG), the meter ECU calculates the range based on continuously monitoring and storing information on fuel consumption data, and the residual fuel volume. This display is updated every 1 km (0.6 mile).
(3)	Average Fuel Consumption	<ul style="list-style-type: none"> Displays a value that has been calculated by the combination meter, which is based on the distance driven and the fuel consumption volume (fuel injection signal from the No.1 cylinder). This display is updated every 10 seconds.
(4)	Average Fuel Consumption After Refueling	<ul style="list-style-type: none"> Displays a value that has been calculated by the meter ECU, which is based on the distance driven after refueling and the fuel consumption volume (fuel injection signal from the No.1 cylinder). The meter ECU determines that the vehicle has been refueled in accordance with the signal from the fuel sender gauge. This display is updated every 10 seconds.
(5)	Current Fuel Consumption	<ul style="list-style-type: none"> Displays a value that has been calculated by the meter ECU. When the engine switch is on (IG), the meter ECU calculates this value based on the distance driven and the fuel consumption volume (fuel injection signal from the No.1 cylinder). This display is updated every 0.5 seconds.
(6)	Average Speed	<ul style="list-style-type: none"> Calculates and displays the elapsed time since the engine start signal and vehicle speed signal were received by the meter ECU. This display is updated every 10 seconds.
(7)	Gear Position	<ul style="list-style-type: none"> The gear position currently in use is displayed as a number and the available shift range is displayed using dots. The above illustration shows that 8th range has been selected using the paddle switches and that the vehicle is in 3rd gear. (This display could also indicate that the shift lever is in the D position and that the vehicle is in 3rd gear.) The “F” symbol appears when the shift lever is in the M position.
























Warning Mode

When a warning is necessary, the warning display interrupts the multi-information display.










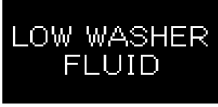

- The master warning light may illuminate or flash and the buzzer may sound depending on the item in the multi-information display.

Warning	Detail	Warning	Detail
  : Flashes Buzzer: Sounds 0140BE194C	The key is not inside the vehicle.	  : Flashes Buzzer: Sounds 0140BE195C	The driver door is opened with the shift lever in any position other than P.
  : Flashes 0140BE196C	Steering lock has not released within 3 seconds of pressing the engine switch.	  : Flashes Buzzer: Sounds 0140BE197C	Steering lock is malfunctioning.
 0140BE198C	The engine switch is changed from off to ACC twice with the brake pedal released.	  : Flashes Buzzer: Sounds 0140BE200C	Key battery is low.
 Buzzer: Sounds 07T0NF01C	Key battery is low.	 Buzzer: Sounds 07T0NF02C	Key battery is low.
  : Flashes Displayed for 8 sec. Buzzer: Sounds 0151BE73C	The sliding roof is open and the driver door is open.	  : Flashes Buzzer: Sounds 0140BE205C	Engine oil pressure is low.

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Warning	Detail	Warning	Detail
<div></div> <div></div> <div></div> <div></div> <div> : Flashes*</div> <div> : Illuminates</div> <div>Buzzer: Sounds*</div> <div>0140BE202C</div>	Any door is open. *: The vehicle having reached a speed of 5 km/h (3 mph).	<div></div> <div> : Flashes*</div> <div>Buzzer: Sounds*</div> <div>0140BE203C</div>	Engine hood is open. *: The vehicle having reached a speed of 5 km/h (3 mph).
		<div></div> <div> : Flashes*</div> <div> : Illuminates</div> <div>Buzzer: Sounds*</div> <div>0140BE204C</div>	Luggage compartment door is open. *: The vehicle having reached a speed of 5 km/h (3 mph).
<div></div> <div> : Flashes</div> <div>Buzzer: Sounds</div> <div>08E0BE211C</div>	Engine oil temperature is high.	<div></div> <div> : Illuminates</div> <div>Buzzer: Sounds</div> <div>0140BE207C</div>	LEXUS parking assist-sensor system is dirty or covered with ice.
<div></div> <div> : Illuminates</div> <div>Buzzer: Sounds</div> <div>Display flashes and then stays on continuously.</div> <div>0140BE208C</div>	A LEXUS parking assist-sensor system is malfunctioning.	<div></div> <div>CRUISE : Flashes</div> <div> : Illuminates</div> <div>Buzzer: Sounds</div> <div>0140BE209C</div>	Millimeter wave radar sensor is dirty or covered with ice.
<div></div> <div>CRUISE : Flashes</div> <div> : Illuminates</div> <div>Buzzer: Sounds</div> <div>0140BE210C</div>	Dynamic radar cruise control system is unable to judge vehicle-to vehicle distance.	<div></div> <div>CRUISE : Flashes</div> <div> : Illuminates</div> <div>Buzzer: Sounds</div> <div>0140BE211C</div>	Dynamic radar cruise control system is malfunctioning

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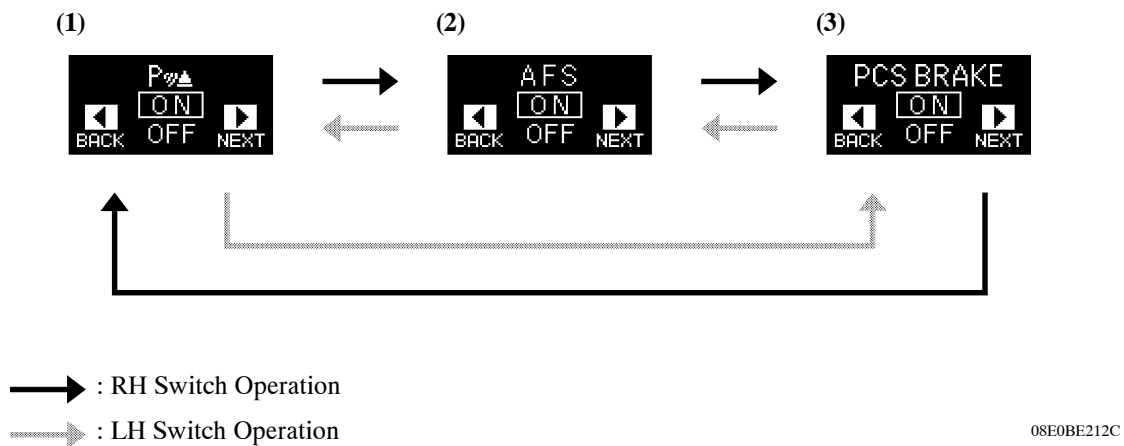
Warning	Detail	Warning	Detail
  : Flashes Buzzer: Sounds 0140BE206C	Parking brake is still engaged with the vehicle having reached a speed of 5 km/h (3 mph).	  : Illuminates 0140BE212C	TRC and VSC are malfunctioning.
 PCS : Flashes Buzzer: Sounds 08D0BE261C	Pre-crash safety system is not currently functional.	 PCS  : Illuminate Buzzer: Sounds 0140BE216C	Pre-crash safety system is malfunctioning.
  : Illuminates Buzzer: Sounds 0140BE214C	Engine oil level is low.	  : Illuminates Buzzer: Sounds 0140BE221C	Washer fluid level is low.

Multi-switch Mode

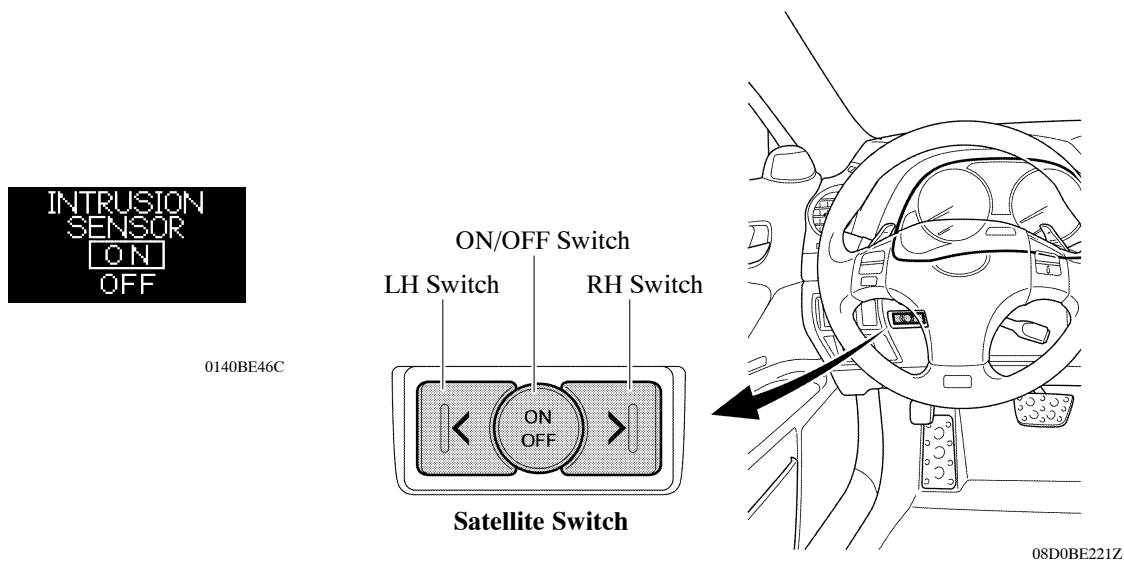
In the multi-switch mode, four different switch functions can be displayed and changed using the satellite switch (RH switch, ON/OFF switch, LH switch).

- When the engine switch is on (IG), three switch functions can be displayed. When the engine switch is off, one switch function can be displayed.
- When the engine switch is on (IG), and while driving at 5 km/h (3 mph) or less (or stopped), the switch function can be displayed. However, the SONAR switch can be displayed regardless of the vehicle speed.
- The switch functions displayed are changed in the order shown below using the satellite switch (RH switch, LH switch). The function can be set using the ON/OFF switch.
- The display automatically returns to the previous display 6 seconds after the satellite switch is operated. It will return to the previous display immediately if the DISP switch is operated.

► Engine switch: on (IG) ◀



► Engine switch: off ◀



7. Buzzer

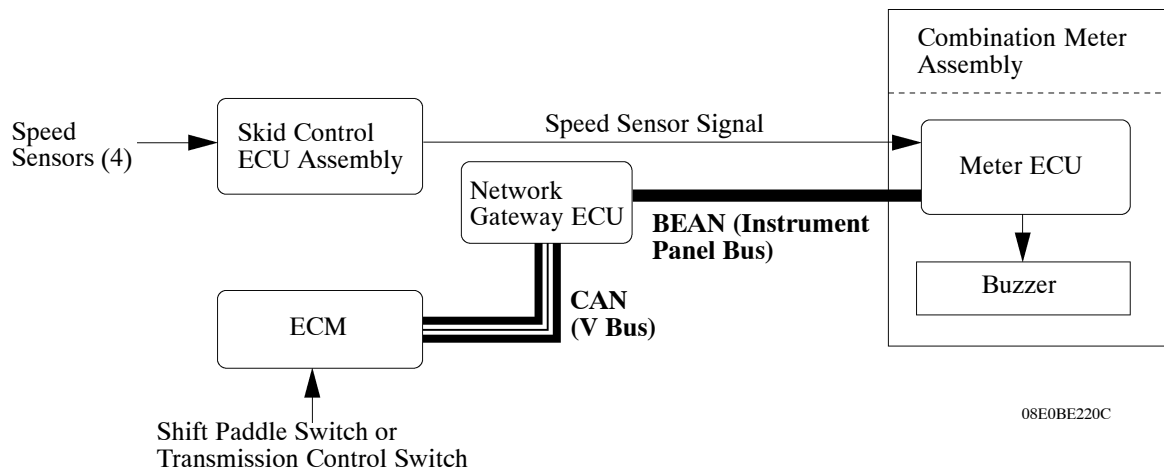
General

The table below shows the warning and reminder functions of the buzzer.

Function	Item
Warning	<ul style="list-style-type: none"> • Down shift warning • Engine speed limit warning • Multi-information display warning mode indication (See page BE-61) • Dynamic radar cruise control warning (See page BE-252) • Seat belt warning (See page BE-219)
Reminder	<ul style="list-style-type: none"> • Key reminder (See page BE-177) • Light reminder

Downshift Warning

When downshifting is attempted while driving at a vehicle speed at which downshifting is impossible, the buzzer sounds twice as a warning and the downshift is prohibited.

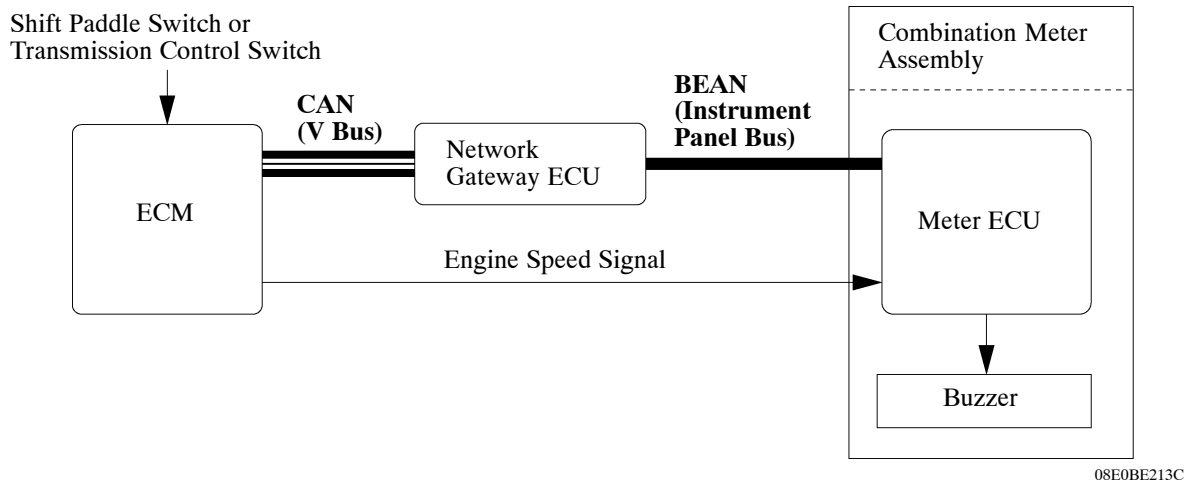


- The maximum speeds at which downshifting is possible are shown in the table below.

Shift Operation	Mode	
	D Position (Fixed Range Mode)	M Position (8-speed Sport Direct Shift Control)
7 → 6	255 to 265 km/h (158 to 165 mph)	255 to 265 km/h (158 to 165 mph)
6 → 5	205 to 214 km/h (127 to 133 mph)	220 to 230 km/h (137 to 143 mph)
5 → 4	171 to 180 km/h (106 to 112 mph)	185 to 194 km/h (115 to 121 mph)
4 → 3	133 to 140 km/h (83 to 87 mph)	147 to 165 km/h (91 to 103 mph)
3 → 2	71 to 78 km/h (44 to 48 mph)	102 to 130 km/h (63 to 81 mph)
2 → 1	38 to 44 km/h (24 to 27 mph)	38 to 57 km/h (24 to 35 mph)

Engine Speed Limit Warning

To encourage upshifting when in M position or when the paddles have been operated, an engine speed limit warning buzzer sounds once when the maximum permitted engine speed is reached. The maximum permitted engine speed is different for each gear.



- The maximum permitted engine speeds for each gear are shown in the table below.

Gear Position	Engine Speed (rpm)
1st	6200
2nd	6350
3rd	6400
4th	6450
5th to 8th	6550

Light Reminder

The light reminder is operated to prevent leaving the vehicle with the exterior lights on. When the following conditions are met, the meter ECU sounds the buzzer once.

- Light control switch is in the TAIL or HEAD position.
- Engine switch is off.
- Driver door is opened.

