

Component Procedures: Driver/Vehicle Information Display

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Driver Information Center

In the lower middle of the instrument cluster, an additional display is installed. Its task is to give additional information, such as an odometer, select gear or error codes/warning messages. Refer to Indicator/Warning Message Description and Operation

There are 4 switch functions for the driver information center :

- Menu
- Set
- Up
- Down

Menu

The Menu switch is used to navigate between the Vehicle Information Menu and the Trip/Fuel Information Menu.

Cycle through the following vehicle parameters by successive pressing of the Menu switch.

Up and Down

The Up and the Down switches are used to navigate within the menus. Cycle through the following menu parameters by successive pressing of the Down switch.

Vehicle Information Menu

- Units Menu
- Tire Pressure Menu
- Remaining Oil Life
- Coolant Temperature
- Speed Warning
- Compass

Trip/Fuel Information Menu

- Trip 1
- Trip 2
- Fuel Range
- Average Fuel Economy
- Instantaneous Fuel Economy
- Average Vehicle Speed
- Timer

Trip 1/2

The trip odometer 1 or 2 can be accessed through the driver information center switch Up/Down function.

Driver Information Center Trip Display Range

Metric US

TRIP 1 #####.##km #####.##miles

TRIP 2 #####.##km #####.##miles

Information Menu

Fuel Range

This message indicates the estimated distance that the vehicle can travel under the current fuel economy and fuel level conditions since the last battery connection to the instrument cluster. Fuel Range is calculated using the equation: $\text{Fuel Range} = \text{Range Distance} / \text{Range Fuel Used}$.

- Range Distance = The accumulated distance travelled since the last reset of this value
- Fuel Used = The accumulated fuel delivered since the last reset of this value

The engine control module (ECM) sends the fuel range value to the instrument cluster. The instrument cluster receives a GMLAN message with fuel information. The fuel range value is retained during ignition OFF and can be changed between Metric and US units by accessing the driver information center Units menu. The Fuel Range display cannot be reset. LOW is displayed when fuel range is below a predetermined value.

Average Fuel Economy

Average fuel economy is calculated using the equation: $\text{Average Fuel Economy} = \text{Distance} / \text{Fuel}$.

- Distance = The accumulated distance travelled since the last reset of this value
- Fuel = The accumulated fuel consumption since the last reset of this value

The ECM sends the average fuel economy GMLAN message to the instrument cluster. The value of this mode is retained during ignition OFF and can be changed between Metric and US units by selecting from the driver information center options menu.

Instantaneous Fuel Economy

The ECM sends the instantaneous fuel economy GMLAN message to the instrument cluster. The value of this mode can be changed between Metric and US units by selecting from the driver information center options menu.

Average Vehicle Speed

Average speed is calculated using the equation: Average Speed = Average Speed Distance/Average Speed Time.

- Ignition ON = The accumulated ignition on time since the last reset of this value

Outside Air Temperature

The outside air temperature can be accessed through the driver information center Trip/Fuel switch function.

The driver information center shows the outside air temperature as a damped value. The time and rate of the temperature update is based on an algorithm in the instrument cluster. Factors such as last temperature reading, current temperature reading, length of time the vehicle was off, current vehicle speed, and the distance driven effect when the displayed temperature is updated. To get the vehicle to display the most accurate temperature faster, drive the vehicle. Constant moving traffic will update the display to the correct temperature more quickly than stop and go traffic.

Timer

The timer records elapsed time starting from activation. When the driver information center displays the timer, pressing the Set/Reset switch for longer than 1 s the driver information center resets the timer.

Pressing the Set/Reset button on the driver information center switch for approximately 1 s starts and stops the timer. The driver information center displays the timer in one of the following formats:

The driver information center displays the timer in the following format: XX: XX:XX:

The first XX represents hours elapsed, the second XX represents minutes elapsed, and the third XX represents seconds elapsed. The maximum range of the timer is 99 h, 59 min, and 59 s. After the maximum range is reached, the timer displays zeros in all positions. (00:00:00).

Units Menu

The unit mode is used to toggle between Metric and US units and can be accessed through the driver information center Menu switch and the driver information center Set switch.

Tire Pressure Monitor

The instrument cluster receives a GMLAN message from the tire pressure monitoring system for front and rear tire pressure data. The driver information center will display the pressure for each of the front and rear tires. When a tire with low air pressure is present, the driver information center displays a warning, CHECK XX TIRE PRESSURE.

Oil Life Remaining

The ECM sends the oil life remaining percentage to the instrument cluster via a GMLAN message. The instrument panel cluster receives a GMLAN message indicating the engine oil life remaining. The driver information center displays the current percentage of the GM Oil Life System as determined by the ECM. When the oil life remaining percentage drops below 5%, the driver information center displays CHANGE ENGINE OIL SOON. When the engine oil is changed, reset the GM Oil Life System. Refer to GM Oil Life System Resetting .

Compass

The vehicle may have a compass display on the Driver Information Center. The compass receives its heading and other information from the Global Positioning System (GPS) antenna . If applicable, the GPS antenna is located with the telematics communication interface control module. For GPS diagnostic information refer to OnStar Global Positioning System (GPS) Data Not Current or Inaccurate .

Odometer

The instrument cluster displays the vehicle odometer in the driver information center. The ECM send a distance rolling count message on GMLAN to the body control module (BCM). The BCM uses this information to calculate the vehicle odometer. This odometer value is then sent to the instrument cluster on GMLAN. The instrument cluster does not calculate the odometer. The odometer displays miles or kilometers as selected in the Units menu.

The odometer value is stored in multiple modules. The instrument cluster is a secondary storage module for the odometer, while the BCM is the primary storage and accumulator.

In addition to storing the odometer value for the vehicle, the instrument cluster and the BCM store the VIN.

Software checks are performed to ensure these modules, and their stored odometer information, can not be move or transferred between different vehicles.

If the VINs do not match, the instrument cluster will go into an error mode and display “----” (dashes). If the VIN mismatch exists over a calibrated distance, the instrument cluster will “lock” the odometer display and only show dashes, even if the VIN mismatch is subsequently correct. The only way to clear or “unlock” the instrument cluster is to perform a BCM programming event using SPS.

Gear Indication

If the vehicle is equipped with an automatic transmission the driver information center displays the actual gear . The instrument cluster receives a GMLAN message with actual gear information from the automatic transmission module.

Park Assist Menu

If the parallel parking assistant is activate, the parallel parking assist menu is displayed in the driver

information center. The driver information center displays the current state of the parallel parking assist until the instrument cluster receives a message indicating otherwise.

Language

The driver information center is capable of displaying in different languages, corresponding to the radio language settings. The instrument cluster receives a GMLAN message with language information from the radio. This message is only sent one time, after a new language is selected. To set the language, see the owners manual.

The vehicle may have a compass in the driver information center. The communication interface module receives information from a specific GPS antenna located on the outside of the vehicle. The GPS antenna is connected to the communication interface module via a shielded coaxial cable. The antenna cable also provides a path for DC current for powering the antenna. The instrument cluster communicates with the communication interface module via serial data.