
Instrument Cluster Description and Operation

Displays Test

Certain instrument panel cluster (IPC) features are tested when the ignition is turned on in order to verify the features are working properly. The following occurs at key up:

- The air bag indicator flashes 7 times (not IPC controlled).
- The ABS indicator illuminates briefly.
- The battery indicator illuminates briefly.
- The brake indicator illuminates briefly.
- The coolant temperature indicator illuminates briefly.
- The cruise engage indicator illuminates briefly.
- The engine oil pressure indicator illuminates briefly.
- The malfunction indicator lamp (MIL) illuminates briefly (not IPC controlled).
- The seat belt indicator illuminates for 70 seconds or until the driver seat belt is latched (not IPC controlled).
- The security indicator illuminates briefly.
- The tire pressure low indicator illuminates briefly.
- The vehicle dynamics caution (VDC) indicator illuminates briefly.
- All segments of the driver information center (DIC) illuminate briefly.
- All odometer segments illuminate briefly.
- The PRNDL segment illuminates briefly.

Indicators and Warning Messages

Refer to [Indicator/Warning Message Description and Operation](#) , [Data Link Communications Description and Operation](#) , and [Body Control System Description and Operation](#).

Engine Coolant Temperature Gage

The instrument panel cluster (IPC) displays the engine coolant temperature as determined by the engine control module (ECM). The IPC receives a GMLAN message from the ECM indicating the engine coolant temperature. The engine coolant temperature gage defaults to 60°C (140°F) or below if:

- The ECM detects a malfunction in the engine coolant temperature sensor circuit.
- The IPC detects a loss of serial data communications with the ECM.
- The body control module (BCM) detects a loss of serial data communications with the ECM.

Fuel Gage

The instrument panel cluster (IPC) displays the fuel level as determined by the ECM. The IPC

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receives a serial data message from the ECM indicating the fuel level percent. The fuel gage defaults to empty if:

- The ECM detects a malfunction in the fuel level sensor circuit.
- The IPC detects a loss of serial data communications with the ECM

When the fuel level is less than a pre-determined value, the low fuel indicator illuminates in the IPC.

Odometer

The vehicle odometer is calculated and stored electronically in the instrument panel cluster (IPC). The IPC contains a season odometer and trip odometer A or B. Momentarily press the DIC trip/fuel button on the IPC in order to toggle between the season odometer and the trip odometer. Press the DIC set/reset button for greater than 0.25 seconds, while the trip odometer is displayed, in order to reset the trip odometer. The IPC displays the vehicle mileage and trip mileage as determined by the IPC. The IPC calculates the mileage based on the serial data vehicle speed information from the ECM. The odometer will display 'error' if an internal IPC memory failure is detected. The odometer displays either miles or kilometers and can be set through the personalization programming menu in the DIC.

PRNDL Display

The IPC displays the selected gear position as determined by the ECM. The IPC receives a serial data message from the ECM indicating the gear position. The PRNDL display blanks if:

- The ECM detects a malfunction in the transmission range switch circuit.
- The IPC detects a loss of serial data communications with the ECM.

Speedometer

The IPC displays the vehicle speed as determined by the ECM. The IPC calculates the mileage based on the serial data vehicle speed information from the ECM. The speedometer defaults to 0 km/h (0 mph) if the IPC detects a loss of serial data communications with the ECM.

Tachometer

The IPC displays the engine speed as determined by the ECM. The IPC receives a serial data message from the ECM indicating the engine speed. The tachometer will default to 0 RPM if:

- The ECM detects a malfunction in the engine speed sensor circuit.
- The IPC detects a loss of serial data communications with the ECM.

Battery Gage

The instrument panel cluster (IPC) displays the voltage as determined by the regulated voltage control (RVC). The IPC receives a serial data message from the BCM indicating the battery voltage. When the engine is ON, the gage should be between 10-16 volts. The gage will default to 0 volts if the IPC detects a loss of communication with the BCM.