Perimeter Anti-Theft Alarm - System Operation and Component Description

System Operation
System Diagram

Network Message Chart
IPC (instrument panel cluster) Network Input Messages

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<td>BCM (body control module)</td>
<td>Used by the IPC (instrument panel cluster) to sound the perimeter alarm chime during the 12-second delay.</td>
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BCM (body control module) Network Input Messages
Perimeter Alarm

The BCM (body control module) controls the operation of the perimeter alarm. It monitors inputs from the RKE (remote keyless entry) system, the passive entry system, the power door lock system, the door ajar status and the PATS (passive anti-theft system) to determine when to arm the perimeter alarm.

The BCM (body control module) monitors all of the door ajar inputs, the liftgate ajar input and the hood ajar input to determine when to activate the perimeter alarm. When the BCM (body control module) detects an input indicating an unauthorized entry into the vehicle, the BCM (body control module) activates the perimeter alarm by sounding the horn and flashing all the turn signals and interior courtesy lamps at regular intervals.

The BCM (body control module) monitors the RKE (remote keyless entry) system, the passive entry system, and the PATS (passive anti-theft system) to determine when to disarm the perimeter alarm.

A switch inhibit feature temporarily disables the door lock control switches and the liftgate release switch 20 seconds after the vehicle is electronically locked. For detailed information of the switch inhibit feature, Refer to: Handles, Locks, Latches and Entry Systems - System Operation and Component Description See: Keyless Entry > Components > System Operation and Component Description (501-14 Handles, Locks, Latches and Entry Systems, Description and Operation).

Additionally, there is a door lock LED (light emitting diode) indicator located on each door window sill. The indicators provide lock/unlock indication for each door. They illuminate when the door is locked and are off when the door is unlocked. For detailed information of the door lock LED (light emitting diode) indicators, Refer to: Handles, Locks, Latches and Entry Systems - System Operation and Component Description See: Keyless Entry > Components > System Operation and Component Description (501-14 Handles, Locks, Latches and Entry Systems, Description and Operation).

Visual and audible feedback is also provided when locking or unlocking the vehicle. For detailed information of the vehicle locking and unlocking feedback, Refer to: Handles, Locks, Latches and Entry Systems - System Operation and Component Description See: Keyless Entry > Components > System Operation and Component Description (501-14 Handles, Locks, Latches and Entry Systems, Description and Operation).

Arming The Perimeter Alarm

The perimeter alarm is ready to arm any time the ignition is off. The perimeter alarm pre-arms when any of the following actions are carried out:

- Pressing the lock button on a RKE (remote keyless entry) transmitter
- Pressing the door lock control switch to the lock position with a front door open, and then closing the door
- Touching the 7/8 and 9/0 buttons simultaneously on the keyless entry keypad
- Locking the vehicle with the passive entry feature

Once the system is pre-armed, there is a 20-second countdown before the perimeter alarm is armed. Each entry point to the vehicle (hood, door and liftgate) is armed separately and must be closed before that entry point begins the 20-second countdown to become armed. If all entry points are closed, the turn signals flash upon locking to indicate all entry points are entering the 20-second countdown.

Perimeter Alarm Activation

The perimeter alarm has a 12-second delay when the driver front door is opened without using a valid programmed RKE (remote keyless entry) transmitter, the keyless entry keypad or a passive key to unlock the vehicle. During the delay, a chime sounds. If the perimeter alarm is not disarmed within the 12-second delay, the alarm activates.

The perimeter alarm activates when any of the following actions are carried out:

- Opening the driver front door without using a valid programmed RKE (remote keyless entry) transmitter, the keyless entry keypad or a passive key to unlock the vehicle.
- Touching the 7/8 and 9/0 buttons simultaneously on the keyless entry keypad.
- Locking the vehicle with the passive entry feature.

Once the system is pre-armed, there is a 20-second countdown before the perimeter alarm is armed. Each entry point to the vehicle (hood, door and liftgate) is armed separately and must be closed before that entry point begins the 20-second countdown to become armed. If all entry points are closed, the turn signals flash upon locking to indicate all entry points are entering the 20-second countdown.
- Any other door, the trumage or the hood is opened without first receiving an electronic unlock command from the passive entry feature, the keyless entry keypad or a valid programmed RKE (remote keyless entry) transmitter.

- the BCM (body control module) detects an attempt by a diagnostic scan tool to establish communication on the CAN (controller area network).

The perimeter alarm only activates 10 times per arming cycle. After that, the alarm does not activate. To enable the perimeter alarm again, disarm the perimeter alarm and then arm it again.

**Disarming The Perimeter Alarm**

The perimeter alarm disarms when any of the following actions are carried out:

- Pressing the unlock button on a door lock control switch within the 20-second pre-arm
- The smart unlock feature activates within the initial 20-second pre-arm
- Pressing the unlock button on a valid programmed RKE (remote keyless entry) transmitter
- Pressing the liftgate release button on a programmed RKE (remote keyless entry) transmitter (this only disarms the liftgate entry point with the rest of the vehicle remaining armed)
- Using a valid programmed key to change the ignition to RUN
- Entering the correct vehicle unlock code on the keyless entry keypad
- Unlocking a front door or opening the liftgate using the passive entry feature

**CAN (controller area network) Protection Strategy**

When the perimeter alarm is armed, the BCM (body control module) monitors the CAN (controller area network). If a scan tool is connected to the DLC (data link connector) and an attempt is made to establish a session with the BCM (body control module), it activates the perimeter alarm.

Every time the BCM (body control module) detects an unauthorized access (alarm activates), all BCM (body control module) programming, PID (parameter identification) monitoring and self-test sessions are blocked for 10 minutes. At the end of the 10 minute time period, the traffic horn chirps to indicate the 1 minute of opportunity to communicate with the BCM (body control module) and program keys if none are available.


**Component Description**

**Door Latch**

The door ajar switch, the lock/unlock solenoid, door lock cylinder lock/unlock switches, and the lock/unlock status input switch are part of the door latch and not serviceable separately.

The door ajar switch is monitored by the BCM (body control module) and the primary function is for the courtesy lamps system.

Refer to: **Interior Lighting - System Operation and Component Description** See: Lighting and Horns > Components > System Operation and Component Description (417-02 Interior Lighting, Description and Operation).

The lock/unlock solenoid is controlled by the BCM (body control module) for locking and unlocking the door.

Refer to: **Handles, Locks, Latches and Entry Systems - System Operation and Component Description** See: Keyless Entry > Components > System Operation and Component Description (501-14 Handles, Locks, Latches and Entry Systems, Description and Operation).

The lock/unlock status input switch is used to illuminate the door lock status indicator.

Refer to: **Handles, Locks, Latches and Entry Systems - System Operation and Component Description** See: Keyless Entry > Components > System Operation and Component Description (501-14 Handles, Locks, Latches and Entry Systems, Description and Operation).

**Hood Latch**

The hood ajar switch is part of the hood latch and not serviceable separately.

**BCM (body control module)**

The BCM (body control module) controls the perimeter alarm.

The BCM (body control module) requires PMI (programmable module installation) when replaced. Additionally, at least 2 keys must be programmed and the parameter reset procedure carried out.