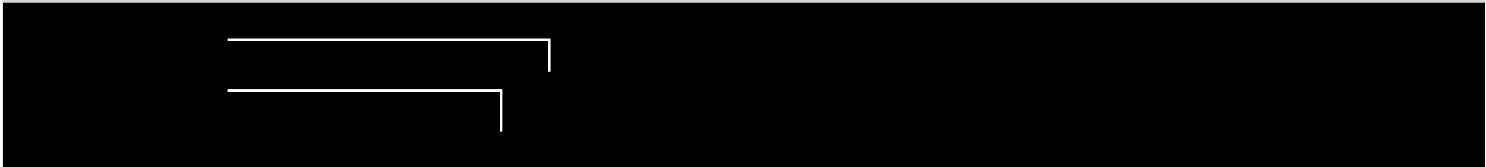


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2011 FORD F-150 Super Crew OEM Service and Repair Workshop Manual

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Perimeter Anti-Theft Alarm - Component Location

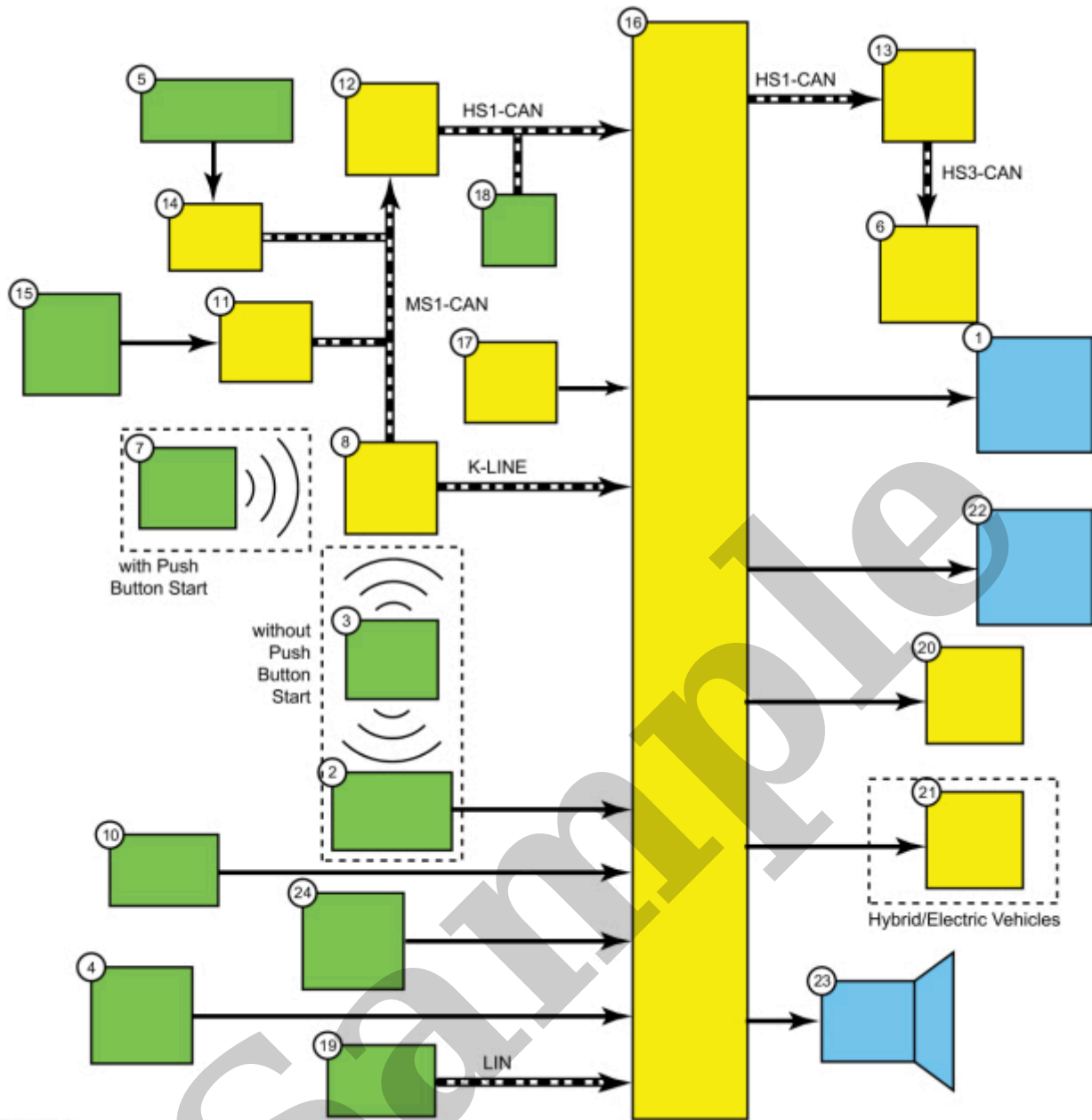
<i>419-01A Perimeter Anti-Theft Alarm</i>	<i>2022 F-150</i>
<i>Description and Operation</i>	<i>Procedure revision date: 10/1/2020</i>

Perimeter Anti-Theft Alarm - Component Location

Sample

Sample

Sample



E375506

Item	Description
1	Turn Signals
2	PATS (passive anti-theft system) Transceiver
3	IKT (integrated keyhead transmitter)
4	Hood Ajar Switch
5	Right Door Lock Control Switch

Broadcast Message	Originating Module	Message Purpose
Perimeter alarm chime request	BCM (body control module)	Used by the IPC (instrument panel cluster) to sound the perimeter alarm chime during the 12-second delay.

BCM (body control module) Network Input Messages

Broadcast Message	Originating Module	Message Purpose
RKE data	RTM (radio transceiver module)	Used by the BCM (body control module) to arm/disarm the perimeter alarm or to activate/deactivate the panic alarm.
Driver door lock switch status	DDM (driver door module)	Used by the BCM (body control module) to arm the perimeter alarm.
Passenger door lock switch status	PDM (passenger door module)	Used by the BCM (body control module) to arm the perimeter alarm.
Trailer connection status	TRM (trailer module)	Used by the BCM (body control module) to arm the perimeter alarm.

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 (if equipped), the power door lock system, the TRM (trailer module), the PATS (passive anti-theft system) and the ignition status to determine when to arm the perimeter alarm.

The BCM (body control module) monitors all of the door ajar switches, the hood ajar switch, the TRM (trailer module) (if equipped), the intrusion sensor, the CAN (controller area network) and the ignition status to determine when to activate the perimeter alarm. When the BCM (body control module) detects an input indicating an unauthorized entry into the vehicle or a trailer that became disconnected, 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 (if equipped), 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 tailgate release switch 20 seconds after the vehicle is electronically locked. For detailed information of the switch inhibit feature,

Disarming The Perimeter Alarm

The perimeter alarm disarms when any of the following occur:

- 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
- Using a valid programmed key to change the ignition to RUN
- Entering the correct vehicle unlock code on the keyless entry keypad (if equipped)
- Unlocking a front door or opening the tailgate using the passive entry feature (if equipped)

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 horn chirps to indicate the 1 minute of opportunity to communicate with the BCM (body control module) and program keys if none are available.

Refer to: [Anti-Theft Key Programming - Scan Tool](#)

(419-01B Passive Anti-Theft System (PATS) - Vehicles With: Keyed Ignition, General Procedures).

Component Description

Door Ajar Switch

The door ajar switch is a single pole switch monitored by the BCM (body control module). The primary function of the door ajar switch is to operate the courtesy lamps system.

Refer to: [Interior Lighting - System Operation and Component Description](#)

(417-02 Interior Lighting, Description and Operation).

Hood Ajar Switch

The hood ajar switch is a single pole switch integrated into the hood latch that is normally closed when the hood is closed. When the hood is opened, the hood ajar switch opens to indicate an open hood.

The BCM (body control module) sends a signal to the hood ajar switch and, based on the input, the BCM (body control module) determines if the hood is open or closed.

Intrusion Sensor

Perimeter Anti-Theft Alarm

419-01A Perimeter Anti-Theft Alarm	2022 F-150
Diagnosis and Testing	Procedure revision date: 09/29/2022

Perimeter Anti-Theft Alarm

Diagnostic Trouble Code (DTC) Chart

Diagnostics in this manual assume a certain skill level and knowledge of Ford-specific diagnostic practices.

REFER to: [Diagnostic Methods](#)

(100-00 General Information, Description and Operation).

Diagnostic Trouble Code Chart

Module	DTC (diagnostic trouble code)	Description	Action
BCM (body control module)	B109F:01	Intrusion Sensor Module: General Electrical Failure	GO to Pinpoint Test E
BCM (body control module)	B109F:02	Intrusion Sensor Module: General Signal Failure	GO to Pinpoint Test E
BCM (body control module)	B109F:08	Intrusion Sensor Module: Bus Signal / Message Failure	GO to Pinpoint Test E
BCM (body control module)	B109F:49	Intrusion Sensor Module: Internal Electric Failure	GO to Pinpoint Test F
BCM (body control module)	B109F:55	Intrusion Sensor Module: Not Configured	GO to Pinpoint Test G

Diagnostics in this manual assume a certain skill level and knowledge of Ford-specific diagnostic practices.
 Diagnostics in this manual assume a certain skill level and knowledge of Ford-specific diagnostic practices.

REFER to: [Diagnostic Methods](#)

(100-00 General Information, Description and Operation).

Symptom Chart

Condition	Actions
No horn output during alarm activation	<ul style="list-style-type: none"> DIAGNOSE the inoperative horn REFER to: Horn(413-06 Horn, Diagnosis and Testing). REFER to: Horn - Vehicles With: Active Steering(413-06 Horn, Diagnosis and Testing).
The alarm system does not activate from an unauthorized entry at the hood	<ul style="list-style-type: none"> GO to Pinpoint Test A
The alarm system does not activate from an unauthorized entry at a door	<ul style="list-style-type: none"> DIAGNOSE the courtesy lamps not illuminating when a door is open. REFER to: Interior Lighting (417-02 Interior Lighting - Anti-Theft Alarm, Interior Sensor) .
The alarm system does not arm or no turn signals flash confirmation	<ul style="list-style-type: none"> GO to Pinpoint Test B
False alarm activation	<ul style="list-style-type: none"> GO to Pinpoint Test D
The alarm system does not activate from the intrusion sensor	<ul style="list-style-type: none"> GO to Pinpoint Test E
The alarm system does not activate from the trailer module	<ul style="list-style-type: none"> GO to Pinpoint Test H

Pinpoint Tests

PINPOINT TEST A : THE ALARM SYSTEM DOES NOT ACTIVATE FROM AN UNAUTHORIZED ENTRY AT THE HOOD

Refer to Wiring Diagrams Cell 117for schematic and connector information.

No	GO to A2
-----------	--------------------------

A2 CHECK THE HOOD AJAR SWITCH INPUT CIRCUIT FOR A SHORT TO GROUND

- Ignition OFF.
- Disconnect BCM (body control module) C2280F .
- Gasoline and hybrid vehicles, measure:

Positive Lead	Measurement / Action	Negative Lead
C127-2	Ω	Ground

- Electric vehicle, measure:

Positive Lead	Measurement / Action	Negative Lead
C1858 -5	Ω	Ground

Is the resistance greater than 10,000 ohms?

Yes	GO to A3
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No	REPAIR the circuit.
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A3 CHECK FOR CORRECT BCM (BODY CONTROL MODULE) OPERATION

- Disconnect and inspect **all** BCM (body control module) connectors.
- Repair:
 - corrosion (install new connector or terminals – clean module pins)