

2007 Cadillac Escalade

2007 ACCESSORIES & EQUIPMENT Theft Deterrent - Avalanche, Escalade, Suburban, Tahoe & Yukon

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SCHEMATIC AND ROUTING DIAGRAMS

THEFT DETERRANT SYSTEM SCHEMATICS

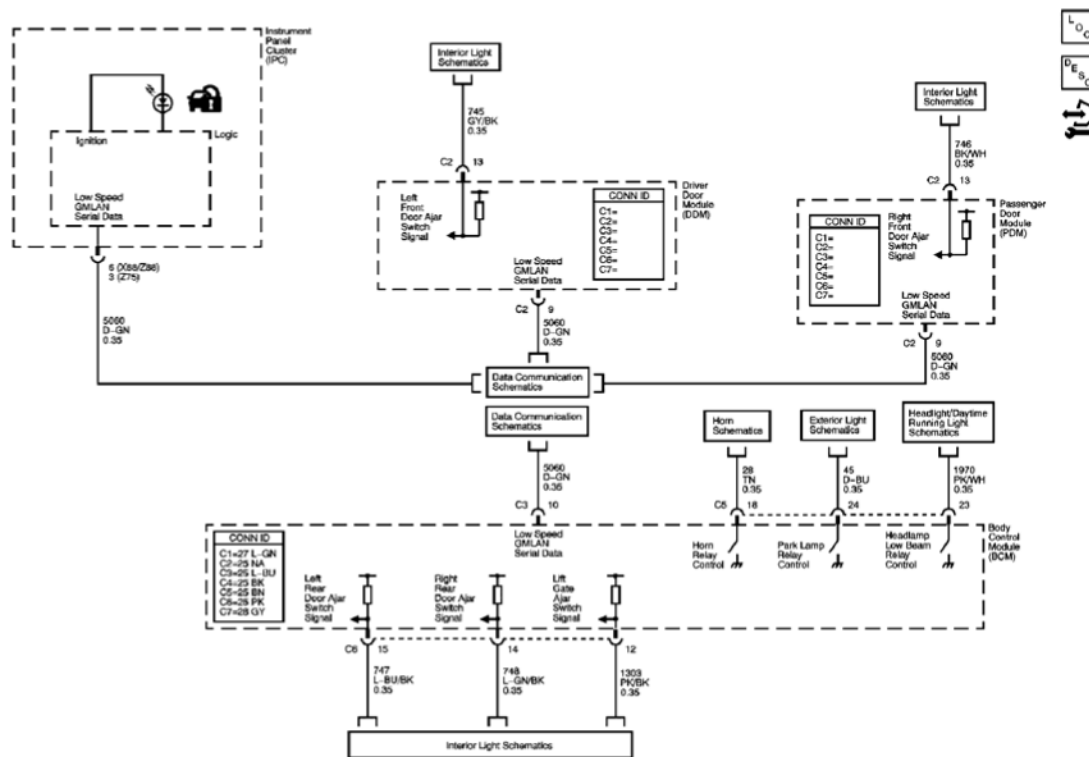


Fig. 1: Content Theft Deterrent Schematic
Courtesy of GENERAL MOTORS CORP.

DIAGNOSTIC INFORMATION AND PROCEDURES

SCAN TOOL DATA LIST

Scan Tool Data List

Scan Tool Parameter	Data List	Units Displayed	Typical Data Value
Operating Conditions: Ignition ON, Engine OFF, Hood Closed			
Rear Closure Ajar Switch	Body Rear End	Active/Inactive	Inactive
Left Rear Door Ajar Switch	Doors	Door Closed/Door Ajar	Door Closed
Right Rear Door Ajar Switch	Doors	Door Closed/Door Ajar	Door Closed

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CTD Status	Theft Data	Disarmed/Arm Delay/Armed/Alarm Active	Disarmed
Current CTD Trigger	Theft Data	None/Drvr. Door/Psgr. Door/LR Door/RR Door/Rear Closure/Hood/Ignition/Remote/Batt. Reconnect/Power Mode/Tamper	None
Driver Identification	Theft Data	Driver 1/Driver 2/Driver 3/Driver 4/Unknown	Varies
Hood Closed Switch	Theft Data	Active/Inactive	Active
Hood Open Switch	Theft Data	Active/Inactive	Inactive
Theft LED	Theft Data	On/Off	Off

SCAN TOOL DATA DEFINITIONS

CTD Status

The scan tool displays the current arming status of the content theft system.

Current CTD Trigger

The scan tool displays the current input which has cause a content theft alarm.

Driver Identification

The scan tool displays the driver which has disarmed the content theft system.

Left Rear Door Ajar Switch

The scan tool displays the current status of the left rear door ajar switch.

Hood Closed Switch

The scan tool displays the status of the hood closed portion of the hood ajar switch.

Hood Open Switch

The scan tool displays the status of the hood open portion of the hood ajar switch.

Rear Closure Ajar Switch

The scan tool displays the current status of the rear closure ajar switch.

Right Rear Door Ajar Switch

The scan tool displays the current status of the right rear door ajar switch.

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Theft LED

The scan tool displays the current status of the theft indicator as controlled by the content theft deterrent (CTD) system.

DIAGNOSTIC STARTING POINT - THEFT DETERRENT

Begin the system diagnosis with the **Diagnostic System Check - Vehicle** . The Diagnostic System Check will provide the following information:

- The identification of the control modules which command the system
- The ability of the control modules to communicate through the serial data circuit
- The identification of any stored diagnostic trouble codes (DTCs) and their status

The use of the Diagnostic System Check will identify the correct procedure for diagnosing the system and where the procedure is located.

SYMPTOMS - THEFT DETERRENT

IMPORTANT: The following steps must be completed before using the symptom tables.

1. Perform **Diagnostic System Check - Vehicle** in order to verify that all of the following are true:
 - There are no DTCs set.
 - The control modules can communicate via the serial data link.
2. Review the system operation in order to familiarize yourself with the system functions. Refer to the following **Content Theft Deterrent (CTD) Description and Operation**

Visual/Physical Inspection

- Inspect for aftermarket devices which could affect the operation of the Theft Deterrent System. Refer to **Checking Aftermarket Accessories** .
- Inspect the easily accessible or visible system components for obvious damage or conditions which could cause the symptom.

Intermittent

Faulty electrical connections or wiring may be the cause of intermittent conditions. Refer to **Testing for Intermittent Conditions and Poor Connections** .

Symptom List

Refer to a symptom diagnostic procedure from the following list in order to diagnose the symptom:

- **Content Theft Deterrent (CTD) Alarm Mode Inoperative**
- **Content Theft Deterrent (CTD) Does Not Disarm with Key Lock**

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- Horn Inoperative in Content Theft Deterrent (CTD) Alarm Mode
- Lights Inoperative in Content Theft Deterrent (CTD) Alarm Mode
- Security Indicator Inoperative

CONTENT THEFT DETERRENT (CTD) ALARM MODE INOPERATIVE

Content Theft Deterrent (CTD) Alarm Mode Inoperative

Step	Action	Yes	No
Schematic Reference: <u>Theft Deterrent System Schematics</u> DEFINITION: The content theft deterrent (CTD) system will not ARM or DISARM properly.			
1	Did you perform the Diagnostic System Check - Vehicle?	Go to Step 2	Go to <u>Diagnostic System Check - Vehicle</u>
2	1. Open the driver and passenger windows. 2. Unlock the doors using the power door lock switch or the keyless entry transmitter. 3. Remove the keys from the ignition. 4. Open the driver door. 5. Observe the courtesy lamps. Do the courtesy lamps illuminate?	Go to Step 3	Go to <u>Courtesy Lamps Inoperative</u>
3	1. Open the driver and passenger windows. 2. Unlock the doors using the power door lock switch or the keyless entry transmitter. 3. Remove the keys from the ignition. 4. Open the driver door. 5. Observe the theft light emitting diode (LED). Does the theft LED flash?	Go to Step 4	Go to <u>Security Indicator Inoperative</u>
4	1. Lock the vehicle using the power door lock switches or the keyless entry transmitter. 2. Observe the theft LED. Does the theft LED change from flashing to on steady?	Go to Step 5	Go to <u>Power Door Locks Inoperative (Front)</u>
5	1. Close all of the doors. IMPORTANT: Ensure that all the doors are closed. The Content Theft Deterrent System will not arm itself without all of the doors being closed.		

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	2. Observe the theft LED. Does the theft LED begin to flash slowly in about 30 seconds?	Go to Step 6	Go to <u>Courtesy Lamps Always On</u>
6	1. Reach in and unlock the driver door manually. 2. Open the driver door. Do all of the alarm mode functions activate-parking lights flash and horn pulses?	Go to Step 7	Go to Step 8
7	Disarm the CTD system by inserting the door key into the driver door lock cylinder and rotate it to the unlock position, then try the passenger door lock cylinder. Do all of the alarm mode functions stop?	Go to <u>Testing for Intermittent Conditions and Poor Connections</u>	Go to <u>Content Theft Deterrent (CTD) Does Not Disarm with Key Lock</u>
8	Do any of the alarm functions activate?	Go to Step 9	Go to <u>Courtesy Lamps Inoperative</u>
9	Do the horns pulse only?	Go to <u>Lights Inoperative in Content Theft Deterrent (CTD) Alarm Mode</u>	Go to <u>Horn Inoperative in Content Theft Deterrent (CTD) Alarm Mode</u>

CONTENT THEFT DETERRENT (CTD) DOES NOT DISARM WITH KEY LOCK

Content Theft Deterrent (CTD) Does Not Disarm with Key Lock

Step	Action	Yes	No
Schematic Reference: <u>Theft Deterrent System Schematics</u> Connector End View Reference: <u>Displays and Gages Connector End Views</u> DEFINITION: The content theft deterrent (CTD) system does not disarm when the vehicle is unlocked with the key.			
1	Did you perform the Diagnostic System Check - Vehicle?	Go to Step 2	Go to <u>Diagnostic System Check - Vehicle</u>
2	1. Turn ON the ignition. 2. With a scan tool, observe the door key switch parameter in the BCM data list. 3. Insert the ignition key into the driver door key cylinder. 4. Turn and hold the door key cylinder to the UNLOCK position. 5. Repeat the procedure for the passenger door lock cylinder.	Go to <u>Testing for Intermittent</u>	

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	Does the scan tool display ACTIVE when the key cylinders are held in the UNLOCK position?	<u>Conditions and Poor Connections</u>	Go to Step 3
3	Does the scan tool display INACTIVE when both the left door key cylinder and the right door key cylinder are held in the UNLOCK position?	Go to Step 4	Go to Step 6
4	Test the body control module (BCM) portion of the door key switch signal circuit for an open. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> . Did you find and correct the condition?	Go to Step 12	Go to Step 5
5	Inspect for a poor connection at the harness connector of the BCM. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> . Was a condition found and corrected?	Go to Step 12	Go to Step 11
6	1. Disconnect the one inoperative door key cylinder switch. 2. Connect a 3-amp fused jumper wire between the door key switch signal circuit of the inoperative door key cylinder switch and a good ground. 3. Observe the door key switch parameter on the scan tool. Does the scan tool display ACTIVE?	Go to Step 8	Go to Step 7
7	Repair the open in the appropriate door key switch portion of the door key switch signal circuit. Did you complete the repair?	Go to Step 12	-
8	1. Connect a 3-amp fused jumper wire between the door key switch signal circuit and the ground circuit. 2. Observe door key switch parameter on the scan tool. Does the scan tool display ACTIVE?	Go to Step 10	Go to Step 9
9	Repair the open in the ground circuit of the inoperative door key switch. Did you complete the repair?	Go to Step 12	-
10	Replace the inoperative door key switch. Refer to <u>Door Lock Cylinder Replacement</u> . Did you complete the replacement?	Go to Step 12	-
11	Replace the BCM. Refer to <u>Control Module References</u> for replacement, setup, and programming. Did you complete the replacement?	Go to Step 12	-
	1. Reconnect any connectors that were removed for testing. 2. Clear any DTCs that may have been set during this		

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12	procedure. 3. Attempt to arm the content theft deterrent (CTD) system. 4. Simulate an intrusion.		
	Did you correct the condition?	System OK	Go to <u>Diagnostic System Check - Vehicle</u>

HORN INOPERATIVE IN CONTENT THEFT DETERRENT (CTD) ALARM MODE

Horn Inoperative in Content Theft Deterrent (CTD) Alarm Mode

Step	Action	Yes	No
Schematic Reference: <u>Theft Deterrent System Schematics</u> Connector End View Reference: <u>Displays and Gages Connector End Views</u> DEFINITION: The horn does not sound when the content theft deterrent (CTD) system is in alarm mode.			
1	Did you perform the Diagnostic System Check - Vehicle?	Go to Step 2	Go to <u>Diagnostic System Check - Vehicle</u>
2	1. Install a scan tool. 2. Turn ON the ignition with the engine OFF. 3. With the scan tool, command the horn relay ON. Does the horn sound?	Go to <u>Testing for Intermittent Conditions and Poor Connections</u>	Go to Step 3
3	Press the horn switch on the steering wheel. Does the horn sound?	Go to Step 4	Go to <u>Horns Inoperative</u>
4	1. Disconnect the body control module (BCM) connector containing the horn relay control circuit. 2. With a fused jumper wire and appropriate terminal adapter, ground the horn relay control circuit. Does the horn sound?	Go to Step 6	Go to Step 5
5	Test the horn relay control circuit for an open or short to battery. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u>. Did you find and correct the condition?	Go to Step 8	Go to <u>Testing for Intermittent Conditions and Poor Connections</u>
6	Inspect for poor connections at the harness connector of the BCM. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u>. Did you find and correct the condition?	Go to Step 8	Go to Step 7
7	Replace the BCM. Refer to <u>Control Module References</u> for replacement, setup, and programming. Did you complete the replacement?	Go to Step 8	-
8	Operate the system in order to verify the repair. Did you correct the condition?	System OK	Go to Step 3

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LIGHTS INOPERATIVE IN CONTENT THEFT DETERRENT (CTD) ALARM MODE

Lights Inoperative in Content Theft Deterrent (CTD) Alarm Mode

Step	Action	Yes	No
Schematic Reference: <u>Theft Deterrent System Schematics</u> DEFINITION: The vehicle lights do not flash when the content theft deterrent (CTD) system is in alarm mode.			
1	Did you perform Diagnostic System Check - Vehicle?	Go to Step 2	Go to <u>Diagnostic System Check - Vehicle</u>
2	Perform one of the following to activate the content theft deterrent (CTD) alarm mode: • Operate the PANIC button on the keyless entry transmitter. • Complete the following steps: 1. Open the driver window. 2. Lock the vehicle using the power door lock switch. 3. Close all of the doors and wait at least 30 seconds. 4. Reach in and unlock the driver door manually. 5. Open the driver door. Do all of the alarm mode functions activate-lights flash and horn pulses?	Go to <u>Testing for Intermittent Conditions and Poor Connections</u>	Go to Step 3
3	Are only the parking lamps inoperative?	Go to <u>Park, License, and Tail Lamps Inoperative</u>	Go to <u>Content Theft Deterrent (CTD) Alarm Mode Inoperative</u>

SECURITY INDICATOR INOPERATIVE

Security Indicator Inoperative

Step	Action	Yes	No
Schematic Reference: <u>Theft Deterrent System Schematics</u> Connector End View Reference: <u>Displays and Gages Connector End Views</u>			
1	Did you perform the Diagnostic System Check - Vehicle?	Go to Step 2	Go to <u>Diagnostic System Check - Vehicle</u>
	1. Turn ON the ignition, with the engine OFF.	Go to <u>Testing for Electrical</u>	

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2	2. Observe the security indicator. Does the security indicator come ON for approximately 5 seconds and then turn OFF?	<u>Intermittents and Testing for Intermittent Conditions and Poor Connections</u>	Go to Step 3
3	Inspect for poor connections at the instrument panel cluster (IPC). Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> . Did you find and correct the condition?	Go to Step 5	Go to Step 4
4	Replace the IPC. Refer to <u>Control Module References</u> for replacement, setup, and programming. Did you complete the replacement?	Go to Step 5	-
5	Operate the system in order to verify the repair. Did you correct the condition?	System OK	Go to Step 2

REPAIR INSTRUCTIONS

THEFT DETERRENT MODULE REPLACEMENT

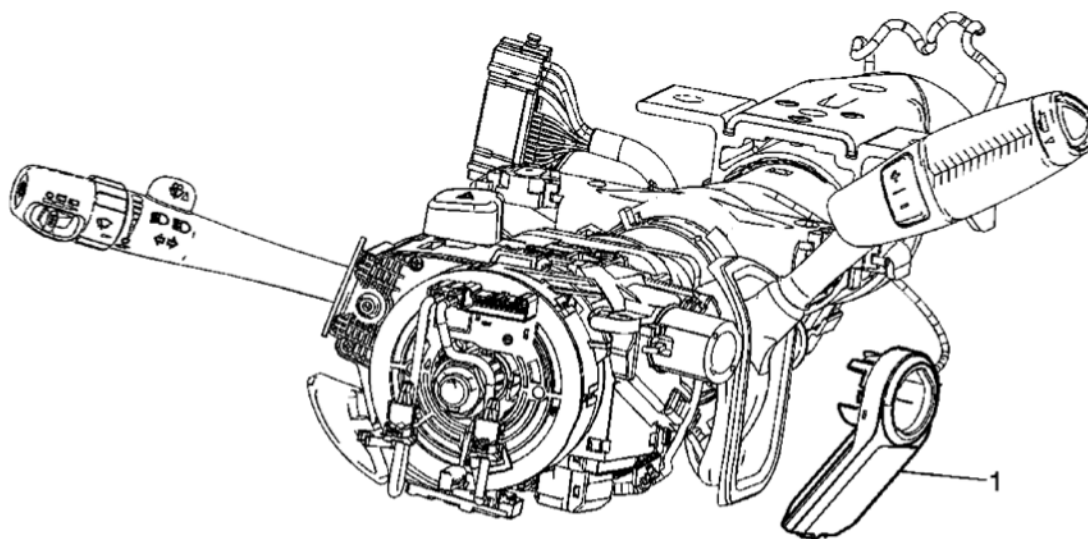


Fig. 2: View Of Theft Deterrent Module Assembly
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Theft Deterrent Module Replacement

Callout	Component Name
Preliminary Procedure	
1.	Disable the SIR. Refer to SIR Disabling and Enabling .

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2. Remove the ignition cylinder. Refer to **Ignition Lock Cylinder Replacement** .
3. Program the theft deterrent control module after replacement. Refer to **Control Module References** .

1

Theft Deterrent Module Assembly

Tip: Pull out away from lock cylinder case and disconnect the electrical connector.

DESCRIPTION AND OPERATION

CONTENT THEFT DETERRENT (CTD) DESCRIPTION AND OPERATION

The content theft deterrent (CTD) system, when armed, is designed to deter vehicle content theft by pulsing the horns and exterior lamps for approximately 30 seconds when an unauthorized vehicle entry is detected. However, the CTD System does not affect engine starting.

An unauthorized entry can be any of the following with the CTD System armed:

- When the rear compartment has been opened without the use of the keyless entry system.
- When any door is opened without first being unlocked using the keyless entry transmitter.
- When the driver door is opened without being first unlocked using the driver door cylinder.

The components of the system are:

- The body control module
- The door ajar switches
- The driver door key cylinder switch
- The rear compartment lid ajar switch

Arming the CTD System

IMPORTANT: The content theft deterrent (CTD) system can be armed with the windows or sunroof open.

Use the following procedure in order to arm the system:

1. Turn OFF the ignition.
2. Exit the vehicle.

IMPORTANT: The system is not armed if the doors are locked manually. The keyless entry transmitter or the door lock switch must be used to arm the CTD system.

With a vehicle door open, lock the doors by pressing the LOCK button on the keyless entry transmitter or by pressing the LOCK button on the door lock switch. The system will begin the arm sequence when all

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doors are closed. The CTD system transition to the arm delay state when the final door is closed. The security indicator will illuminate steady when in the arm delay state.

If the keyless entry transmitter LOCK button is pressed after the vehicle doors have been closed, the system will transition directly to the arm delay state with the indicator on steady.

3. The system will arm approximately 30 seconds from the time that the system has entered the arm delay state. When the security indicator transitions to flashing slowly, the system is armed.

Alternately, if the LOCK button on the keyless entry transmitter is pressed a second time, the system will arm immediately, bypassing the 30 second delay.

Locking The Vehicle Without Arming The CTD System

Locking the vehicle may be accomplished without arming the content theft deterrent (CTD) system by locking the vehicle by using the manual door locks.

Disarming an Armed System/Silencing an Alarm

If system arming has occurred, it must be disarmed.

IMPORTANT: Manually unlocking the doors does not disable the content theft deterrent (CTD) armed mode. Also, disconnecting the battery or pulling fuses does not disable the armed mode, as the body control module (BCM) stores the CTD status in memory.

To disarm the CTD system perform one of the following:

- Press the UNLOCK button on the keyless entry transmitter.
- Unlock the driver door using the door key cylinder.
- Insert a valid key into the ignition and start the vehicle.

CTD Circuit Description

The following is a description of each component used in the content theft deterrent (CTD) system:

Body Control Module (BCM)

The CTD system is an internal function of the body control module (BCM) which utilizes serial data and various switch inputs to perform CTD functions. When the BCM detects an unauthorized entry, it activates the horns and exterior lamps for 30 seconds. Following the 30-second alarm period is a 10-second time-out. The system will then re-arm.

Door Ajar Switches

The CTD system uses the door ajar switches as a status indicator to activate the alarm. The BCM receives the status of the front door ajar switches based on serial data messages from the Driver Door Module (DDM) and

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Passenger Door Module (PDM). The rear door ajar switches are monitored via a discrete input from each door ajar switch. If the BCM receives a ground signal from a door ajar switch when the CTD system is armed, the BCM activates the alarm.

Rear Compartment Lid Ajar Switch

The CTD system uses the rear compartment lid ajar switch as a status indicator to activate the alarm. The rear compartment lid ajar switch is monitored via a discrete input from the switch. If the BCM receives a ground signal from the lid ajar switch when the CTD system is armed, the BCM activates the alarm.

Driver Door Cylinder Switch

The CTD system uses the driver door cylinder switch as a means to disarm the CTD system. When the driver door key cylinder is rotated, the driver door cylinder switch is closed. The driver door cylinder switch is monitored by the DDM. With the driver door cylinder switch closed, a ground signal is seen on the Driver Door Key Switch Signal circuit. The DDM will then send a serial data message to the BCM indicating that a valid key has been used to rotate the driver door cylinder and the CTD system should be disarmed.

Inputs

The BCM monitors the following inputs:

- The door LOCK/UNLOCK switch; a serial data message from the DDM
- The driver and passenger door ajar switches; both a serial data message from the DDM/PDM and a discrete input
- The rear compartment lid ajar switch; a discrete input to the BCM
- Driver door cylinder switch; a serial data message from the DDM
- The keyless entry transmitter LOCK/UNLOCK buttons; a serial data message from the RCDLR
- The Vehicle Theft Deterrent (VTD) status-The BCM uses the VTD status for disarming the system or silencing and alarm when the correct vehicle key is used to start the vehicle

Outputs

The BCM controls the following:

- The horn relay
- The exterior lights