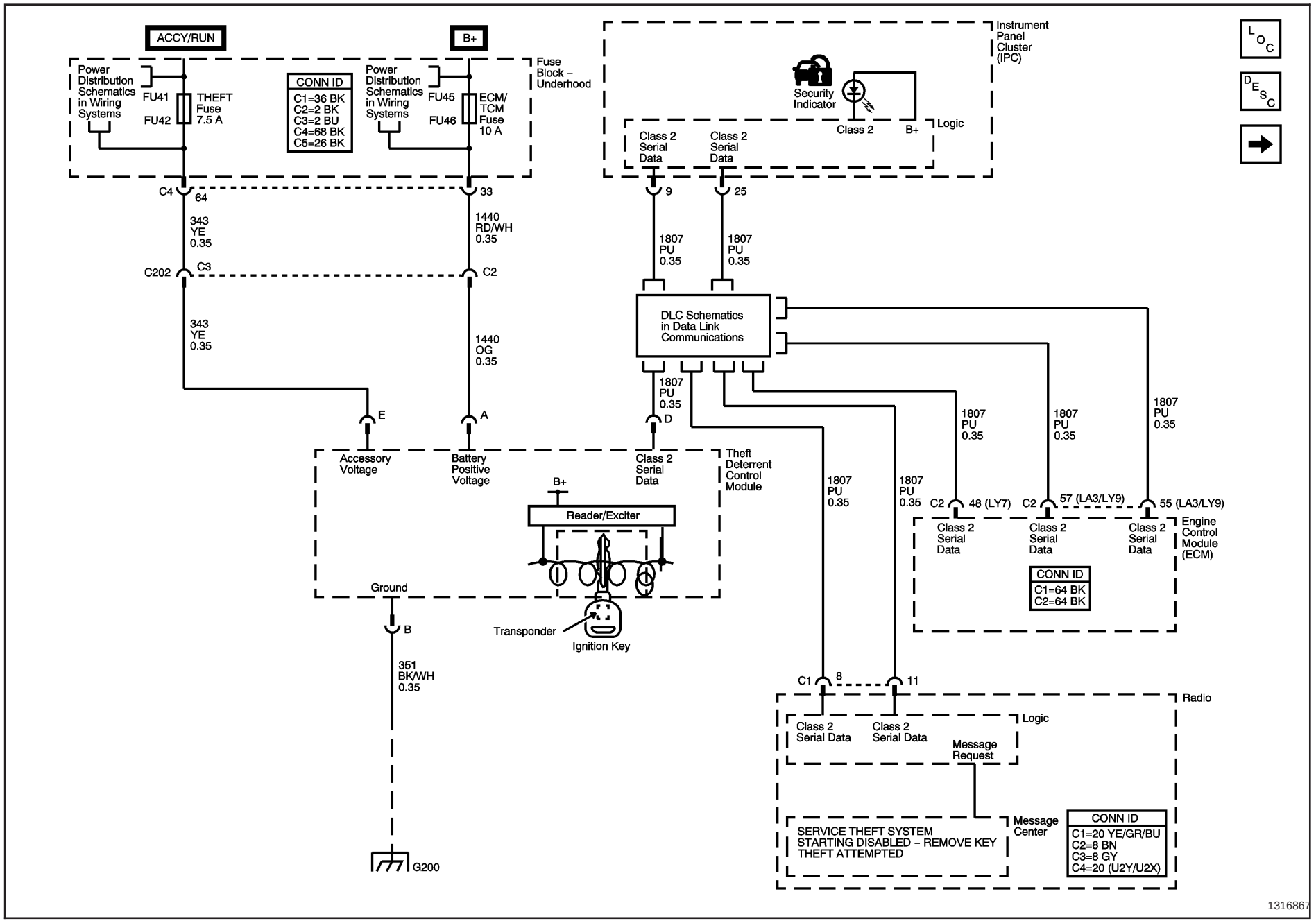
Theft Deterrent

Schematic and Routing Diagrams

Theft Deterrent System Schematics (Theft Deterrent Control Module Power, Ground, Serial Data and Indicator)

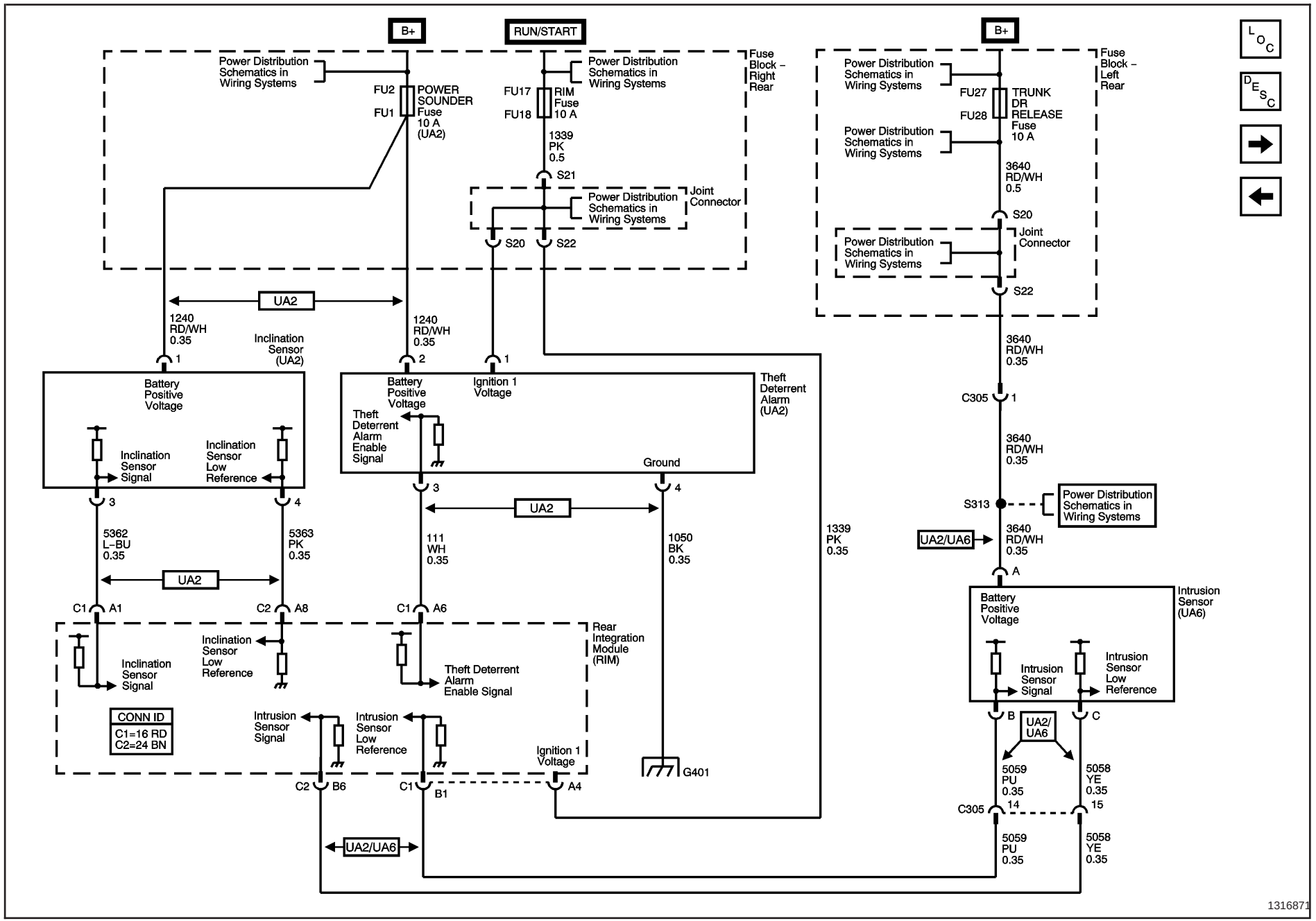
SIE-ID = 1227616 SIO-ID = 1226386 LMD = 03-jun-2003



Theft Deterrent System Schematics (Theft Deterrent Alarm, Intrusion Sensor and Inclination Sensor — Export w/ UA2)

SIE-ID = 1227616

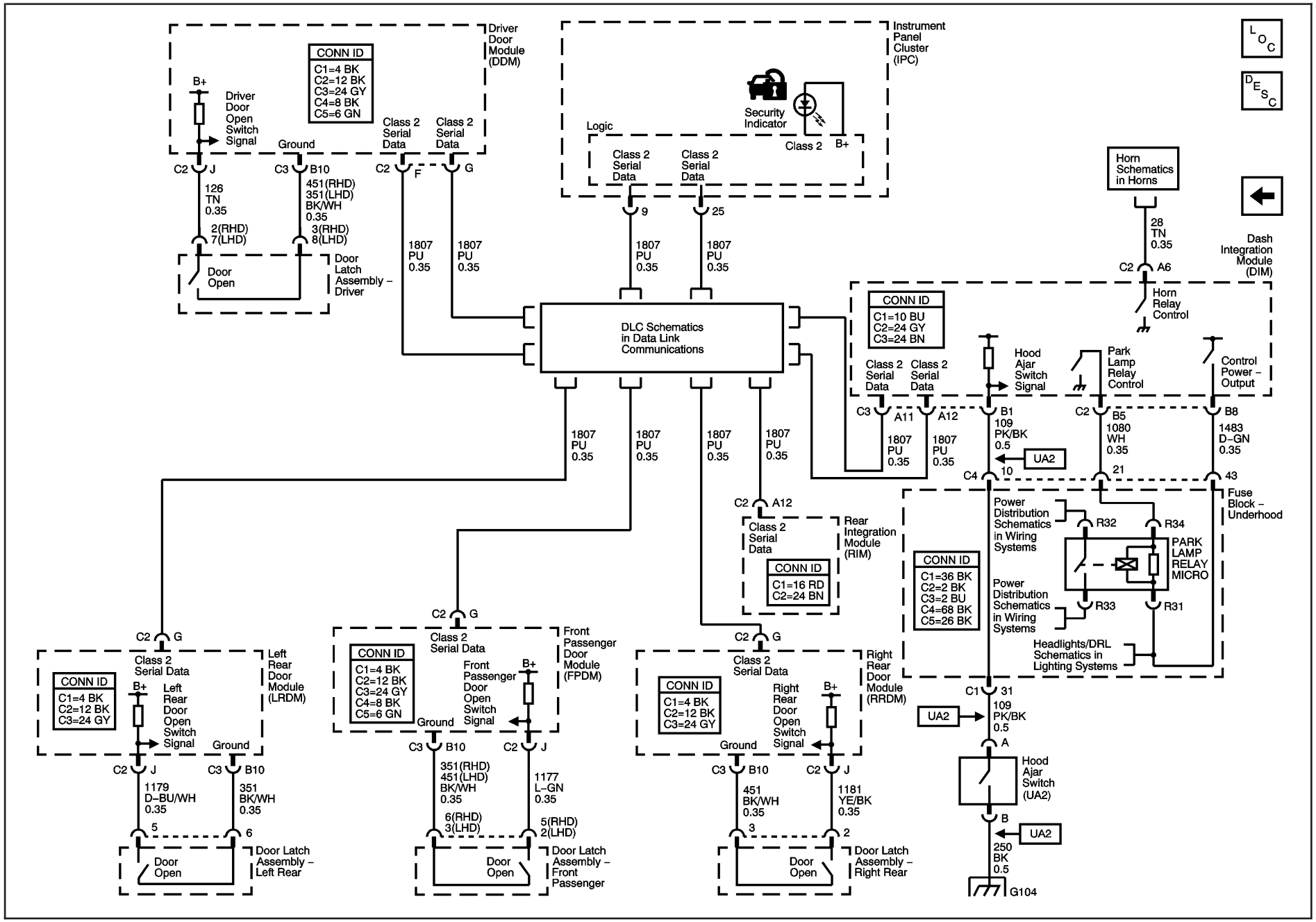
SIO-ID = 1226397 LMD = 03-jun-2003



1316871

Theft Deterrent System Schematics (Door Modules, Serial Data and Indicator)

SIE-ID = 1227616 SIO-ID = 1226479 LMD = 03-jun-2003



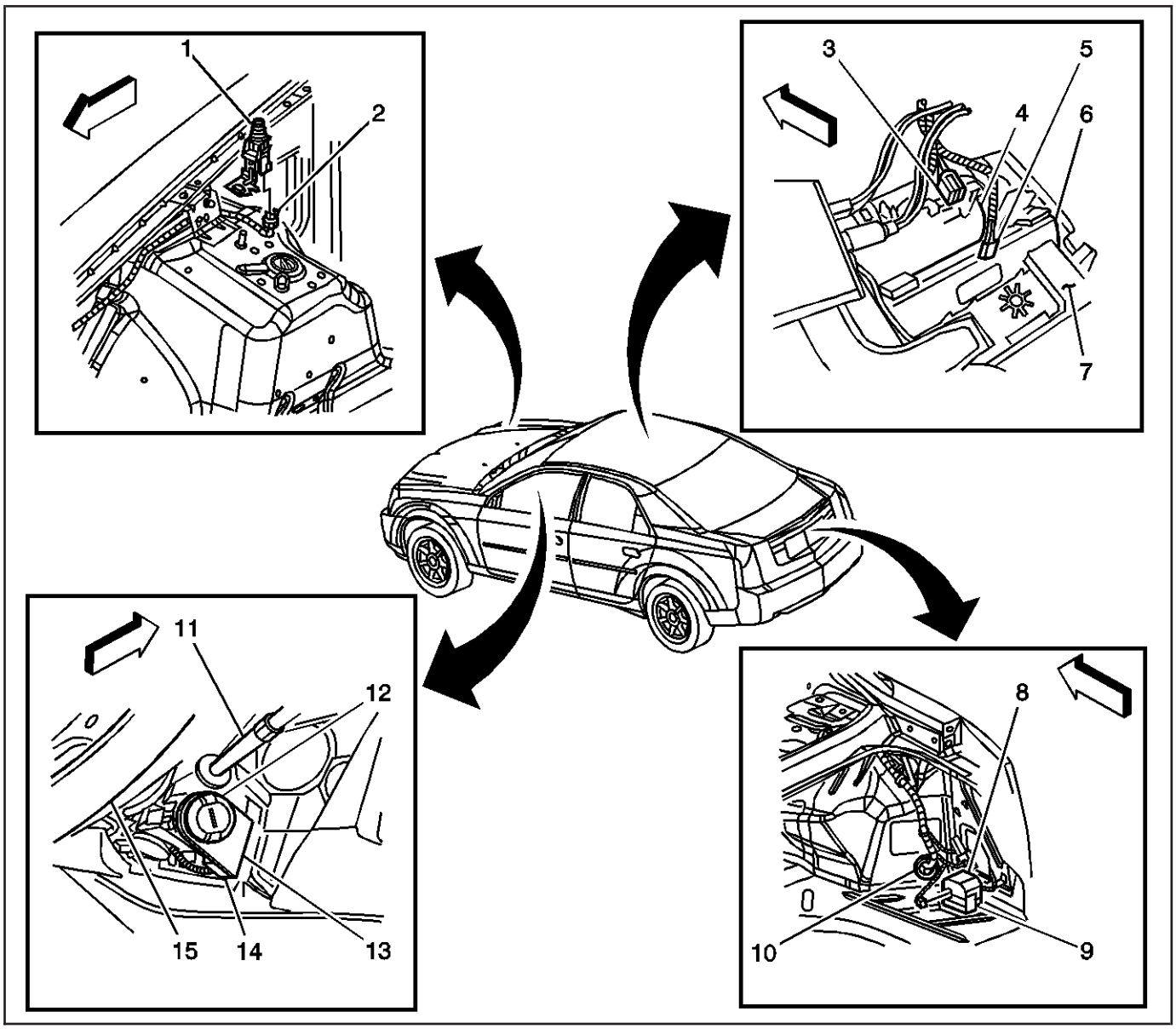
1316887

Component Locator

Theft Deterrent System Component Views

SIE-ID = 1228034 Owner = jsumme01 LMD = 05-aug-2003 LMB = jsumme01

Theft Deterrent Sub-System **SIO-ID = 809494 LMD = 05-aug-2003**



801465

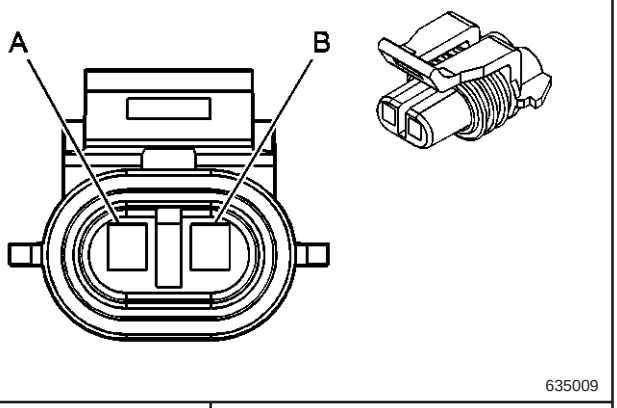
Legend

(1) Hood Ajar Switch (Export w/UA2)
(2) Hood Ajar Switch Connector (Export w/UA2)
(3) Dome Lamp Connector
(4) Dome Lamp
(5) Intrusion Sensor Connector (Export w/UA2)
(6) Intrusion Sensor (Export w/UA2)
(7) Headliner
(8) Theft Deterrent Alarm (Export w/UA2)
(9) Inclination Sensor (Export w/UA2)
(10) P400, P401 on Left Side
(11) Windshield Wiper/Washer Switch
(12) Ignition Lock Solenoid
(13) Theft Deterrent Control Module
(14) Theft Deterrent Control Module Connector
(15) Steering Wheel

Theft Deterrent System Connector End Views

SIE-ID = 1228036 Owner = jsumme01 LMD = 29-sep-2003 LMB = jsumme01

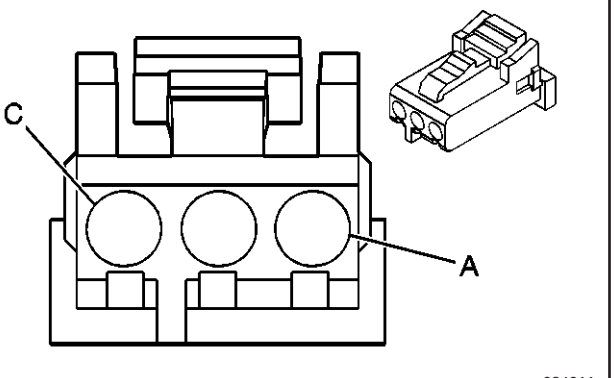
Hood Ajar Switch (Export w/UA2)



635009

Connector Part Information	• 12052641 • 2-Way F Metri-Pack 150 Series (BK)		
Pin	**Wire Color**	**Circuit Number**	**Function**
A	PK/BK	109	Hood Ajar Switch Signal
B	BK	250	Ground

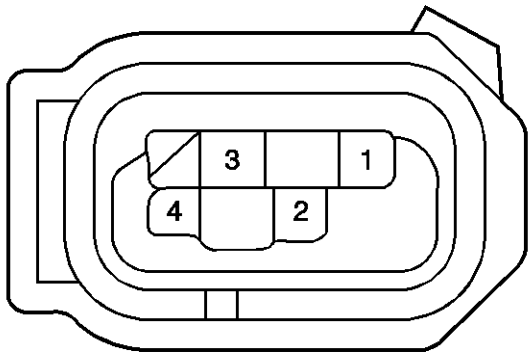
Intrusion Sensor (Export w/UA2/UA6)



684911

Connector Part Information	• 15326747 • 3-Way F Micro-Pack (BK)		
Pin	**Wire Color**	**Circuit Number**	**Function**
A	RD/WH	3640	Battery Positive Voltage
B	PU	5059	Intrusion Sensor Alarm On Signal
C	YE	5058	Intrusion Sensor Armed Signal

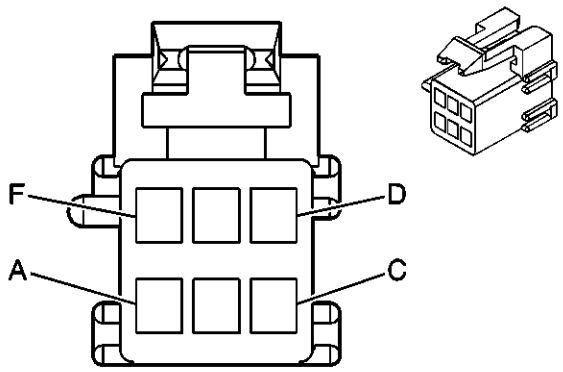
Theft Deterrent Alarm (Export w/UA2)



810084

Connector Part Information	• 1-967640-1 • 4-Way F Weather Pack (BK)		
Pin	**Wire Color**	**Circuit Number**	**Function**
1	PK	1339	Ignition 1 Voltage
2	RD/WH	1240	Battery Positive Voltage
3	WH	111	Theft Deterrent Alarm Enable Signal
4	BK	1050	Ground

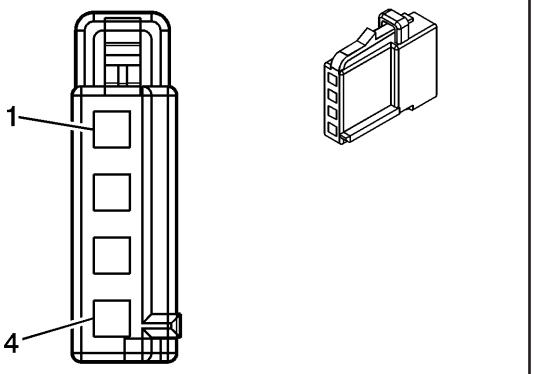
Theft Deterrent Control Module



40422

Connector Part Information	• 12064762 • 6-Way F Metri-Pack 150 Series (GY)		
Pin	**Wire Color**	**Circuit Number**	**Function**
A	OG	1440	Battery Positive Voltage
B	BK/WH	351	Ground
C	—	—	Not Used
D	PU	1807	Class 2 Serial Data
E	YE	343	Accessory Voltage
F	—	—	Not Used

Inclination Sensor (Export w/UA2)



894390

Connector Part Information		• **15324229** • **4-Way F Metri-Pack 150 Packard (BK)**	
Pin	**Wire Color**	**Circuit Number**	**Function**
1	RD/WH	1240	Battery Positive Voltage
2	—	—	Not Used
3	L-BU	5362	Inclination Sensor Signal
4	PK	5363	Inclination Sensor Low Reference

Diagnostic Information and Procedures

Diagnostic Starting Point - Theft Deterrent

SIE-ID = 629936 Owner = mgastm01 LMD = 14-jul-2000 LMB = tdedvu01

Begin the system diagnosis with the *Diagnostic System Check - Theft Deterrent on page 11-8*. The Diagnostic System Check will provide the following information:

- The identification of the control module(s) which command the system
- The ability of the control module(s) 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.

Diagnostic System Check - Theft Deterrent

SIE-ID = 1232694 Owner = bdrend01 LMD = 30-apr-2003 LMB = bdrend01

Test Description

The numbers below refer to the step numbers on the diagnostic table.

2. Lack of communication may be due to a partial malfunction of the serial data circuit or due to a total malfunction of the serial data circuit. The specified procedure will determine the particular condition.
3. The symptoms list in Symptoms will determine the correct diagnostic procedure to use.
4. The presence of DTCs which begin with “U” indicate some other module is not communicating. The specified procedure will compile all the available information before tests are performed.
5. The presence of DTC P0601, P0602, P0603, P0604, P0606 or P1621 indicates an internal fault in the engine control module (ECM).
6. The presence of DTC B1000, B1004, B1007, or B1009 indicates an internal module fault.

Diagnostic System Check - Theft Deterrent

Step	Action	Yes	No
Schematic Reference: *Theft Deterrent System Schematics on page 11-2*			
1	Install a scan tool. Does the scan tool power up?	Go to *Step 2*	Go to *Scan Tool Does Not Power Up on page 8-27* in Data Link Communications
2	1. Turn ON the ignition, with the engine OFF. 2. Attempt to establish communication with the following modules: • Driver Door Module (DDM) • Driver Door Switch Assembly (DDSA) • Left Rear Door Module (LRDM) • Front Passenger Door Module (FPDM) • Right Rear Door Module (RRDM) • Dash Integration Module (DIM) • Engine Control Module (ECM) • Rear Integration Module (RIM) • Theft Deterrent Control Module • Instrument Panel Cluster (IPC) Does the scan tool communicate with all of the listed control modules?	Go to *Step 3*	Go to *Data Link References on page 8-37* in Data Link Communications
3	Select the display DTC function on the scan tool for the following modules: • Driver Door Module (DDM) • Driver Door Switch Assembly (DDSA) • Left Rear Door Module (LRDM) • Front Passenger Door Module (FPDM) • Right Rear Door Module (RRDM) • Dash Integration Module (DIM) • Engine Control Module (ECM) • Rear Integration Module (RIM) • Theft Deterrent Control Module • Instrument Panel Cluster (IPC) Does the scan tool display any DTCs?	Go to *Step 4*	Go to *Symptoms - Theft Deterrent on page 11-33*

Diagnostic System Check - Theft Deterrent (cont'd)

Step	Action	Yes	No
4	Does the scan tool display any DTCs which begin with a ″U″?	Go to *Scan Tool Does Not Communicate with Class 2 Device on page 8-28* in Data Link Communications	Go to *Step 5*
5	Does the scan tool display DTC P0601, P0602, P0603, P0604, P0606 or P1621?	Go to *Diagnostic Trouble Code (DTC) List on page 6-53* in Engine Controls - 2.6L and 3.2L or *Diagnostic Trouble Code (DTC) List on page 6-68* in Engine Controls - 3.6L or *Diagnostic Trouble Code (DTC) List on page 6-62* in Engine Controls - 5.7L	Go to *Step 6*
6	Does the scan tool display DTC B1000, B1004, B1007 or B1009?	Go to *Diagnostic Trouble Code (DTC) List on page 8-15* in Body Control System	Go to *Step 7*
7	Does the scan tool display DTC B1327 or B1328?	Go to *Diagnostic Trouble Code (DTC) List on page 6-13* in Engine Electrical	Go to *Diagnostic Trouble Code (DTC) List on page 11-14*

Scan Tool Output Controls

SIE-ID = 883139 Owner = rgrave01 LMD = 11-jul-2002 LMB = hlogan01

Dash Integration Module (DIM)

Scan Tool Output Control	Additional Menu Selection(s)	Description
ASM Part A	Set Options	This function allows you to enable or disable the Alarm Siren Module (ASM).
ASM Part B	Set Options	This function allows you to enable or disable the Alarm Siren Module (ASM).
Horn Relay	Output Control	The DIM actuates the horn relay for 5 seconds when you select ON. The horn should sound for 5 seconds.
Inclination Sensor Part A	Set Options	This function allows you to enable or disable the Inclination Sensor.
Inclination Sensor Part B	Set Options	This function allows you to enable or disable the Inclination Sensor.
Intrusion Sensor Part A	Set Options	This Function allows you to enable or disable the Intrusion Sensor.
Intrusion Sensor Part B	Set Options	This Function allows you to enable or disable the Intrusion Sensor.
Lighting For Theft	Output Control	The DIM turns the theft Lighting ON or OFF for 5 seconds.
Point Of Sale	Set Options	This function allows you to control the theft options on the vehicle, by designating the country which the vehicle will be operated in.
Universal Theft Deterrent	Set Options	This function allows you to turn the Content Theft Deterrent (CTD) ON or OFF, and to change the alarm options.

Instrument Panel Cluster (IPC)

Scan Tool Output Control	Additional Menu Selections	Description
Display(s) Test	Output Control	The scan tool displays Commanded State: None, On, or Off. This function allows you to command all segments of the IPC display ON or OFF, for 5 seconds.

Rear Integration Module (RIM)

Scan Tool Output Control	Additional Menu Selections	Description
Intrusion Sensor	Output Controls	The scan tool displays Commanded State: None, On, or Off. This function allows you to command the intrusion sensor ON or OFF, for 5 seconds.

Scan Tool Data List

SIE-ID = 763253 Owner = bdrend01 LMD = 03-may-2002 LMB = tdedvu01

Dash Integration Module (DIM)

Scan Tool Parameter	Data List	Units Displayed	Typical Data Value
Operating Conditions: Ignition ON, Engine OFF			
Hood Ajar Switch	Inputs	On/Off	Off
Horn (Except SWC)	Outputs	On/Off	Off
Park Lamp Relay	Outputs	On/Off	Off
Theft Lighting	Outputs	On/Off	Off

Driver Door Module (DDM)

Scan Tool Parameter	Data List	Units Displayed	Typical Data Value
Operating Conditions: Ignition ON, Engine OFF			
Key Cylinder Unlock	Inputs	Idle/Lock/Unlock	Idle

Engine Control Module (ECM)

Scan Tool Parameter	Data List	Units Displayed	Typical Data Value
Operating Conditions: Ignition ON, Engine OFF			
Auto Learn Mode Active	Engine Data 3	Yes/No	No
ECM in VTD Fail Enable	Engine Data 3	Yes/No	No
Export Mode	Engine Data 3	On/Off	Off
Fuel Continue	Engine Data 3	Yes/No	Yes
Fuel Disable Timeout	Engine Data 3	Yes/No	No
Password Learning Enabled	Engine Data 3	On/Off	Off
VTD Fuel Disable Until Ignition Off	Engine Data 3	Yes/No	No

Rear Integration Module (RIM)

Scan Tool Parameter	Data List	Units Displayed	Typical Data Value
Operating Conditions: Ignition ON, Engine OFF			
ASM Signal	Input/Output	Transmitted/Not Transmitted	Not Transmitted
ASM State	Input/Output	Disarm/Arm	Disarm
Battery Reconnect	CTD Alarm Triggers	On/Off	Off
CTD State	CTD Alarm Triggers	Ignition On/Ignition & Door/Ignition & Lock/Standby/Open/Locked/Arm Pending/Armed/Warn Away/Alarm	Varies
Driver Door Jamb Sw.	CTD Alarm Triggers	On/Off	Off

Rear Integration Module (RIM) (cont'd)

Scan Tool Parameter	Data List	Units Displayed	Typical Data Value
Operating Conditions: Ignition ON, Engine OFF			
Hood Ajar Switch	CTD Alarm Triggers	On/Off	Off
Intrusion Sensor	CTD Alarm Triggers	On/Off	Off
Intrusion Sensor	Input/Output	OK/Active	OK
Intrusion Sensor Valid	CTD Alarm Triggers	Valid/Invalid	Valid
Left Rear Door Jamb Sw.	CTD Alarm Triggers	On/Off	Off
Pass. Door Jamb Sw.	CTD Alarm Triggers	On/Off	Off
Power Mode Change	CTD Alarm Triggers	On/Off	Off
Rt. Rear Door Jamb Sw.	CTD Alarm Triggers	On/Off	Off
Triggers Per Theft Cycle	CTD Alarm Triggers	Numeric	0
Trunk Ajar Switch	Input/Output	On/Off	Off
Trunk Ajar Switch Active	CTD Alarm Triggers	Yes/No	No
Trunk Disarm Switch	Inputs	OK/Disarm	OK

Vehicle Theft Deterrent

Scan Tool Parameter	Data List	Units Displayed	Typical Data Value
Operating Conditions: Ignition ON, Engine OFF			
8 Digit GM Part Number	ID Information	Numeric	Varies
Auto Learn Counter	Learn Key Data	Counts	Varies
Auto Learn Timer	Learn Key Data	Minutes	0–10
Battery Voltage	Data	Volts	Varies
Calibration ID	ID Information	Numeric	Varies
Dash Mode	Data	On/Off	Off
Export Mode	Data	On/Off	Off
First Key Flag	Learn Key Data	On/Off	Off
Fuel Continue	Learn Key Data	Yes/No	Yes
Fuel Disable Ignition Off	Learn Key Data	Yes/No	No
Ignition Counter	Data	Counts	Varies
Ignition Voltage	Data	Volts	Varies
Julian Date of Build	ID Information	Numeric	Varies
Manufacturers Enable Counter	Data	Counts	0
Master Keys Learned	Learn Key Data	Counts	2
No. of Learned Key Codes	Learn Key Data	Counts	2
PROM ID	ID Information	Numeric	Varies
Report Password	Data	On/Off	Off
Start Disabled	Data	Yes/No	No
Tamper Flag	Data	On/Off	Off
Two Good Keys Flag	Learn Key Data	On/Off	Off
Valet Flag	Data	On/Off	Off
VTD Fail Enable	Data	On/Off	Off

Vehicle Theft Deterrent (cont'd)

Scan Tool Parameter	Data List	Units Displayed	Typical Data Value
Operating Conditions: Ignition ON, Engine OFF			
VTD States	Data	Ignition/Normal Decision/Learn First Key/Tamper/Monitor Key/Fail Enable/Seedkey Lrn Pend/Seedkey Learn/Auto Learn Pend/Auto Learn/Wakeup/Learn More Keys/No Coded Key/Check Second Key/Auto Lrn Done/Vin Check/Vin Timer	Monitor Key
Year Module Built	ID Information	Numeric	Varies

Scan Tool Data Definitions

SIE-ID = 883011 Owner = bdrend01 LMD = 03-may-2002 LMB = tdedvu01

8 Digit GM Part Number: The scan tool displays the 8 Digit GM Part Number. The scan tool displays the part number of the control module.

ASM Signal: The scan tool displays Transmitted/Not Transmitted. Transmitted indicates that the Content Theft Deterrent (CTD) system is in alarm mode, and that the alarm signal has been transmitted to the Alarm Siren Module (ASM).

ASM State: The scan tool displays Arm/Disarm. Arm indicates that the CTD system is armed, and that the ASM is enabled.

Auto. Learn Counter: The scan tool displays 0 – 3. The scan tool displays the current state of the Auto. Learn Timer Counter. The Auto. Learn Counter must Increment a total of three times in order for the relearn procedure to be complete.

Auto Learn Mode Active: The scan tool displays Yes/No. The scan tool displays Yes when the VTD system is in auto learn mode.

Auto. Learn Timer Status: The scan tool displays:00 Sec. - 10:00 Min. The scan tool displays the current state of the Auto. Learn Timer which increments in 10 second intervals. The Auto. Learn Timer must time out three times in order for the relearn procedure to be complete.

Battery Reconnect: The scan tool displays On/Off. When the module senses a battery reconnect the scan tool displays On.

Battery Voltage: The scan tool displays 0–30 volts. The scan tool displays the current battery voltage input.

Calibration ID: The scan tool displays the Calibration ID. Display indicates the calibration ID of the VTD systems module.

CTD State: The scan tool displays Ignition 1/Ignition Door/Ignition Lock/Stanby/Open/Locked/Arm Pending/Armed/Warn Away/Alarm. The scan tool displays the current state of the CTD system.

Dash Mode: The scan tool displays On/Off. The scan tool displays On when the vehicle is equipped with a dash mounted ignition switch. The scan tool displays OFF when the vehicle is equipped with a column mounted ignition switch.

Driver Door Jamb Sw.: The scan tool displays On/Off. Display indicates the current state of the driver door jamb switch. On indicates the door is open and Off indicates the door is closed.

ECM in VTD Fail Enable: The scan tool displays Yes/No. The scan tool displays Yes when the ECM has lost communications with the VTD system while the engine was running.

Export Mode: The scan tool displays On/Off. The scan tool displays On when the VTD system is configured as export. The scan tool displays Off when the VTD system is configured as domestic.

First Key Flag: The scan tool displays On/Off. The scan tool displays On when the VTD system is ready to learn the first key transponder value.

Fuel Continue: The scan tool displays Yes/No. The scan tool displays YES when the theft deterrent module has read a valid key and is sending it's fuel continue password via the serial data circuit. The scan tool displays NO when the theft deterrent module has read an invalid key and is sending it's fuel disable password via the serial data circuit

Fuel Disable Ignition Off: The scan tool displays Yes/No. The scan tool displays YES when the theft deterrent control module has disabled vehicle starting for the current ignition cycle. The scan tool displays NO when the theft deterrent control module has enable normal operation.

Fuel Disable Timeout: The scan tool displays Yes/No. The scan tool displays Yes when the VTD system disables sending the fuel continue password.

Hood Ajar Switch: The scan tool displays On/Off. Display indicates the current state of the hood ajar switch only when the CTD system is in the armed mode. On indicates the hood ajar switch was active when the CTD was in the armed mode.

Hood Jamb Switch: The scan tool displays On/Off. Display indicates the current state of the hood ajar

switch. On indicates that the hood is either open or ajar and off indicates the hood is closed.

Horn (Except SWC): The scan tool displays On/Off. The scan tool displays the commanded state of the horn relay.

Ignition Counter: The scan tool displays 0 – 99. The module counts each time the ignition is cycled from ON to OFF.

Ignition Voltage: The scan tool displays 0 – 18. The scan tool displays the current ignition voltage.

Intrusion Sensor: In the CTD Alarm Triggers data list, the scan tool displays On/Off. On indicates that the CTD system entered alarm mode as a result of a signal from the intrusion sensor.

Intrusion Sensor: In the Input/Ouotput data list, the scan tool displays OK/Active. OK indicates that no motion is detected by the intrusion sensor. Active indicates that motion is currently detected by the intrusion sensor.

Intrusion Sensor Valid: The scan tool displays Valid/Invalid. Valid indicates that the intrusion sensor is enabled, and is sending a valid signal to the CTD system.

Julian Date of Build: The scan tool displays the Julian Date of Build. Display indicates the date the module was built.

Key Cylinder Unlock: The scan tool displays On/Off. The scan tool displays On when the door key cylinder is rotated to the unlock position.

Left Rear Door Jamb Sw.: The scan tool displays On/Off. Display indicates the current status of the left rear door jamb switch. On indicates the door is open and off indicates the door is closed.

Manufactures Enable Counter: The scan tool displays 0–255. The Manufactures Enable Counter is cleared prior to leaving the assembly plant. This data value is for use at the assembly plant only.

Master Keys Learned: The scan tool displays 0 – 10. The scan tool displays the number of learned master keys.

No. of Learned Key Codes: The scan tool displays 1–10. The scan tool displays the number of transponder values learned by the VTD system.

Park Lamp Relay: The scan tool displays On/Off. The scan tool displays the commanded state of the Park lamp relay.

Password Learning Enabled: The scan tool displays On/Off. The scan tool displays On when the VTD system is in the password learn state.

Pass. Door Jamb Sw.: The scan tool displays On/Off. Display indicates the current state of the passenger door jamb switch. On indicates the door is open and Off indicates the door is closed.

Power Mode Change: The scan tool displays On/Off. The scan tool displays On when the power source has changed from ON, IGN or RAP.

PROM ID: The scan tool displays the PROM ID. The scan tool displays the 4 digit internal PROM ID of the module.

Rt. Rear Door Jamb Sw.: The scan tool displays On/Off. Display indicates the current state of the right rear door jamb switch. On indicates the door is open and Off indicates the door is closed.

Report Password: The scan tool displays On/Off. The scan tool displays On when the VTD system has sent its fuel continue password via the serial data circuit.

Theft Lighting: The scan tool displays On/Off. Displays indicates the commanded state of the hazard relay. The scan tool displays On when the hazard relay is grounded and Off when hazard relay is not grounded.

Triggers Per Theft Cycle: The scan tool displays 0 – 10. This number indicates the number of times the CTD system was triggered during the last arming cycle.

Trunk Ajar Switch: The scan tool displays On/Off. Display indicates the current state of the trunk ajar switch only when the CTD system is in the armed mode. On indicates the trunk ajar switch was active when the CTD was in the armed mode.

Trunk Ajar Switch Active: The scan tool displays On/Off. Display indicates the current state of the trunk ajar switch only when the CTD system is in the armed mode. On indicates the trunk ajar switch was active when the CTD was in the armed mode.

Trunk Disarm Switch: The scan tool displays OK/Disarm. The scan tool displays Disarm when the trunk lock cylinder is rotated to the unlock position.

Two Good Keys Flag: The scan tool displays On/Off. The scan tool displays On when the VTD system has read a second learned transponder value within 10 seconds of switching OFF the ignition after reading another learned transponder value. Two good keys are required to perform the quick key learn procedure on export configured VTD systems.

Valet Flag: The scan tool displays On/Off. The scan tool displays On when the VTD system has read the key transponder being used is coded as a valet key.

VTD Fail Enable: The scan tool displays On/Off. The scan tool displays On when the VTD system was in the monitor key state and lost communications with the key transponder.

VTD Fuel Disable Until Ignition Off: The scan tool displays Yes/No. The scan tool displays Yes when the PCM has received the fuel disable password from the VTD system. This indicates the PCM will not allow fuel delivery until the ignition is switched off prior to another start attempt.

VTD States: The scan tool displays Ignition/Normal Decision/Learn First key/Tamper/Monitor Key/Fail Enable/Seedkey Lrn Pend/Seedkey Learn/Auto Learn Pend/Auto Learn/Wakeup/Learn More Keys/No Coded Key/Check Second Key/Auto Lrn Done/Vin Check/Vin Timer. The scan tool displays Ignition when the ignition is switched from ON to OFF for longer than 10 seconds.The scan tool displays Normal

Decision when the ignition is On and the VTD system has read a learned key transponder value. The scan tool displays Learn First Key when the ignition is ON and the VTD system is ready to learn the first key transponder value. The scan tool displays Tamper when the ignition is ON and the VTD system has read a key transponder value that is NOT a learned value. The scan tool displays Monitor Key when the ignition is ON and the VTD system is operating normally. The scan tool displays Fail Enable when the ignition is ON and the VTD system was in the Monitor Key state and lost communications with the key transponder. The scan tool displays Seedkey Lrn Pend when the ignition is ON and the VTD system 10–minute learn timer has not expired. The scan tool displays Seedkey Learn when the ignition is ON and the VTD system 10–minute learn timer has expired. The scan tool displays Auto Learn Pend when the VTD system auto learn counter has not incremented 3 successful times during the 30–minute learn procedure. The scan tool displays Auto Learn when the ignition is ON and the 30–minute learn procedure was completed successfully. The scan tool displays Wakeup when the ignition is switched from OFF to ON and the VTD system is asleep. The scan tool displays Learn More Keys when the VTD system has read the required number of transponder values to perform the adding keys procedure. The scan tool displays No Coded Key when the ignition is ON and the VTD system is unable to read a key transponder value. The scan tool displays Check Second Key when the ignition is switched from ON to OFF after the VTD system has read a learned key transponder value. The scan tool displays Auto Lrn Done when the VTD system has learned at least one key transponder value and has exited the 30–minute learn procedure. The scan tool displays VIN Check when power has been lost and then restored to the VTD system. The VTD system checks the VIN stored in internal memory with the VIN stored in the VIN master internal memory to insure it matches. The scan tool displays VIN Timer when the ignition is ON and the VTD system has confirmed the VIN stored in internal memory matches the VIN master. The VIN Timer will run for a programmable length of time, typically 10 minutes. The VIN Timer must time out before the VTD system can exit to the normal decision state.

Year Module Built: The scan tool displays the year the module was built.

SIE-ID = 1232696 Owner = bdrend01 LMD = 10-mar-2003 LMB = bdrend01

Diagnostic Trouble Code (DTC) List

DTC	Diagnostic Procedure	Module(s)
Important: Unless otherwise directed by the Diagnostic System Check diagnose all Bxxxx Codes prior to diagnosing any Pxxxx codes.		
B1015	*DTC B1015 on page 11-15*	VTD
B1016	*DTC B1016 on page 11-17*	VTD
B3031	*DTC B3031 on page 11-19*	VTD
B3055	*DTC B3055 on page 11-20*	VTD
B3060	*DTC B3060 on page 11-22*	VTD
B3069	*DTC B3064 or B3069 on page 8-59* in Doors	Door Modules
B3935	*DTC B3935 on page 11-24*	VTD
B3976	*DTC B3976 on page 11-26*	VTD
P1629	*DTC P1629 on page 11-29*	ECM
P1630	*DTC P1630 on page 11-31*	ECM
P1631	*DTC P1631 on page 11-32*	ECM
Pxxxx	Pxxxx other ECM DTCs Refer to *Diagnostic Trouble Code (DTC) List on page 6-53* in Engine Controls 2.6L and 3.2L or *Diagnostic Trouble Code (DTC) List on page 6-68* in Engine Controls - 3.6L or *Diagnostic Trouble Code (DTC) List on page 6-62* in Engine Controls - 5.7L	ECM

DTC B1015

SIE-ID = 884225 Owner = bdrend01 LMD = 10-mar-2003 LMB = bdrend01

SIO-ID = 884215 LMD = 02-may-2002

Circuit Description

After a loss of battery power has been restored the theft deterrent control module will perform a check on the stored vehicle identification number (VIN). If the VIN is CORRECT, the theft deterrent control module will run the VIN Timer for a programmable length of time, typically 10 minutes. The theft deterrent control module will send a message via the serial data circuit to the instrument panel cluster (IPC) to illuminate the SECURITY indicator. After the VIN Timer has timed out, the security indicator will turn OFF. If the VIN is INCORRECT, the theft deterrent control module will send the fuel disable password to the ECM via the serial data circuit. The VTD system considers this to be a tamper and will not allow the vehicle to start. The theft deterrent control module will send a message via the serial data circuit to the instrument panel cluster (IPC) to flash the SECURITY indicator.

SIO-ID = 673053 LMD = 11-oct-2000

Conditions for Running the DTC

The ignition is ON.

SIO-ID = 884220 LMD = 11-jun-2002

Conditions for Setting the DTC

- The VIN check flag of the theft deterrent control module is true.
- The theft deterrent control module has determined that the battery has been reconnected after a disconnect.

SIO-ID = 884195 LMD = 02-may-2002

Action Taken When the DTC Sets

- The vehicle will not start.
- The theft deterrent control module sends the fuel disable message via the serial data circuit to the ECM.
- The theft deterrent control module will run the VIN Timer for a programmable length of time, typically 10 minutes.
- The theft deterrent control module sends a message to the instrument panel cluster (IPC) to illuminate the SECURITY indicator.

SIO-ID = 884217 LMD = 11-jun-2002

Conditions for Clearing the MIL/DTC

- The Theft Deterrent control module clears the current DTC when the correct VIN information is present.
- The DTC can be cleared by using a scan tool.

SIO-ID = 884222 LMD = 02-may-2002

Diagnostic Aids

The VIN information is stored during the Setup New VTD Module procedure on a GM SPO replacement part. When the manufactures enable counter (MEC) is equal to 0 the VIN information cannot be changed.

SIO-ID = 883954 LMD = 11-jun-2002

Test Description

The number below refers to the step number on the diagnostic table:

2. If DTC B1015 or B1016 are set as a current code, the VIN information was either incorrectly stored or not stored. The VIN information is stored during the Setup New VTD Module procedure on a GM SPO replacement part. When either the Setup New VTD Module procedure has been performed or when the manufactures enable counter (MEC) is equal to 0 the VIN information cannot be changed.

DTC B1015

Step	Action	Yes	No
Schematic Reference: *Theft Deterrent System Schematics on page 11-2* **Connector End View Reference:** *Theft Deterrent System Connector End Views on page 11-6*			
1	Did you perform the Theft Deterrent Diagnostic System Check?	Go to *Step 2*	Go to *Diagnostic System Check - Theft Deterrent on page 11-8*

DTC B1015 (cont'd)

Step	Action	Yes	No
2	**Important:** If a 10 Minute or 30 Minute Re-Learn Procedure is perform, all keys not learned at that time will be erased and will not be recognized. Perform the Adding Keys procedure on all keys or instruct the customer how to perform the Adding Keys procedure. Refer to *Adding Keys (Domestic) on page 11-48* or *Adding Keys (Export) on page 11-48*. 1. Replace the theft deterrent control module. Refer to *Theft Deterrent Control Module Replacement on page 11-44*. 2. With a scan tool, perform the Set Up New VTD Module procedure in the Vehicle Theft Deterrent, Special Functions data list. 3. Perform the Programming Theft Deterrent System Components procedure. Refer to *Programming Theft Deterrent System Components on page 11-48*. Did you complete the replacement?	Go to *Step 3*	—
3	1. Use a scan tool in order to clear the DTCs 2. Attempt to start the vehicle. Does the DTC reset?	Go to *Step 2*	System OK

DTC B1016

SIE-ID = 884227 Owner = bdrend01 LMD = 02-may-2002 LMB = bdrend01

SIO-ID = 884215 LMD = 02-may-2002

Circuit Description

After a loss of battery power has been restored the theft deterrent control module will perform a check on the stored vehicle identification number (VIN). If the VIN is CORRECT, the theft deterrent control module will run the VIN Timer for a programmable length of time, typically 10 minutes. The theft deterrent control module will send a message via the serial data circuit to the instrument panel cluster (IPC) to illuminate the SECURITY indicator. After the VIN Timer has timed out, the security indicator will turn OFF. If the VIN is INCORRECT, the theft deterrent control module will send the fuel disable password to the ECM via the serial data circuit. The VTD system considers this to be a tamper and will not allow the vehicle to start. The theft deterrent control module will send a message via the serial data circuit to the instrument panel cluster (IPC) to flash the SECURITY indicator.

SIO-ID = 673053 LMD = 11-oct-2000

Conditions for Running the DTC

The ignition is ON.

SIO-ID = 884220 LMD = 11-jun-2002

Conditions for Setting the DTC

- The VIN check flag of the theft deterrent control module is true.
- The theft deterrent control module has determined that the battery has been reconnected after a disconnect.

SIO-ID = 884209 LMD = 02-may-2002

Action Taken When the DTC Sets

- The vehicle will not start.
- The theft deterrent control module sends the fuel disable message via the serial data circuit to the ECM.
- The theft deterrent control module sends a message to the instrument panel cluster (IPC) to flash the SECURITY indicator.

SIO-ID = 884217 LMD = 11-jun-2002

Conditions for Clearing the MIL/DTC

- The Theft Deterrent control module clears the current DTC when the correct VIN information is present.
- The DTC can be cleared by using a scan tool.

SIO-ID = 884222 LMD = 02-may-2002

Diagnostic Aids

The VIN information is stored during the Setup New VTD Module procedure on a GM SPO replacement part. When the manufactures enable counter (MEC) is equal to 0 the VIN information cannot be changed.

SIO-ID = 883954 LMD = 11-jun-2002

Test Description

The number below refers to the step number on the diagnostic table:

2. If DTC B1015 or B1016 are set as a current code, the VIN information was either incorrectly stored or not stored. The VIN information is stored during the Setup New VTD Module procedure on a GM SPO replacement part. When either the Setup New VTD Module procedure has been performed or when the manufactures enable counter (MEC) is equal to 0 the VIN information cannot be changed.

DTC B1016

Step	Action	Yes	No
Schematic Reference: *Theft Deterrent System Schematics on page 11-2* **Connector End View Reference:** *Theft Deterrent System Connector End Views on page 11-6*			
1	Did you perform the Theft Deterrent Diagnostic System Check?	Go to *Step 2*	Go to *Diagnostic System Check - Theft Deterrent on page 11-8*

DTC B1016 (cont'd)

Step	Action	Yes	No
2	**Important:** If a 10 Minute or 30 Minute Re-Learn Procedure is perform, all keys not learned at that time will be erased and will not be recognized. Perform the Adding Keys procedure on all keys or instruct the customer how to perform the Adding Keys procedure. Refer to *Adding Keys (Domestic) on page 11-48* or *Adding Keys (Export) on page 11-48*. 1. Replace the theft deterrent control module. Refer to *Theft Deterrent Control Module Replacement on page 11-44*. 2. With a scan tool, perform the Set Up New VTD Module procedure in the Vehicle Theft Deterrent, Special Functions data list. 3. Perform the Programming Theft Deterrent System Components procedure. Refer to *Programming Theft Deterrent System Components on page 11-48*. Did you complete the replacement?	Go to *Step 3*	—
3	1. Use a scan tool in order to clear the DTCs 2. Attempt to start the vehicle. Does the DTC reset?	Go to *Step 2*	System OK

DTC B3031

SIE-ID = 763041 Owner = bdrend01 LMD = 19-oct-2001 LMB = bdrend01
SIO-ID = 678950 LMD = 22-dec-2000

Circuit Description

The theft deterrent control module checks memory to see if the Learn Coded Key setting is on. If so, the theft deterrent control module sets this DTC.

SIO-ID = 686382 LMD = 20-sep-2000

Conditions for Running the DTC

The ignition is ON.

SIO-ID = 678954 LMD = 11-jan-2001

Conditions for Setting the DTC

If the Learn Coded Key setting is on, the theft deterrent control module sets this DTC.

SIO-ID = 678960 LMD = 22-dec-2000

Action Taken When the DTC Sets

The theft deterrent control module will learn the key code. The security indicator will be illuminated for this DTC.

SIO-ID = 679032 LMD = 22-dec-2000

Conditions for Clearing the MIL/DTC

The theft deterrent control module clears the current status of the DTC when it does not see the Learn Coded Key setting as on. The DTC will still be retrieved as current until the ignition switch is cycled. The DTC will become a history DTC at that time.

SIO-ID = 679033 LMD = 26-feb-2003

Test Description

The number below refers to the step number on the diagnostic table.

2. To set this code, a key with a working transponder was read by the theft deterrent control module. For that key to operate the vehicle a 10 minute or 30 minute Re-Learn Procedure must be performed.

DTC B3031

Step	Action	Yes	No
Schematic Reference: *Theft Deterrent System Schematics on page 11-2* **Connector End View Reference:** *Theft Deterrent System Connector End Views on page 11-6*			
1	Did you perform the Theft Deterrent Diagnostic System Check?	Go to *Step 2*	Go to *Diagnostic System Check - Theft Deterrent on page 11-8*
2	**Important:** If a 10 Minute or 30 Minute Re-Learn Procedure is performed, all keys not learned at that time will be erased and will not be recognized. Perform the Adding Keys procedure on all keys or instruct the customer how to perform the Adding Keys procedure. Refer to *Adding Keys (Domestic) on page 11-48* or *Adding Keys (Export) on page 11-48*. Perform the Programming Theft Deterrent System Components procedure. Refer to *Programming Theft Deterrent System Components on page 11-48*. Is the procedure complete?	Go to *Step 3*	—
3	1. Use the scan tool in order to clear the DTCs. 2. Operate the vehicle within the Conditions for Running the DTC as specified in the supporting text. Does the DTC reset?	Go to *Step 2*	System OK

DTC B3055

SIE-ID = 826868 Owner = bdrend01 LMD = 30-apr-2002 LMB = bdrend01

SIO-ID = 883137 LMD = 30-apr-2002

Circuit Description

When an ignition key is inserted into the ignition lock cylinder and the ignition is switched ON, the transponder embedded in the head of the key is energized by the exciter coils surrounding the ignition lock cylinder. The energized transponder transmits a signal that contains its unique value, which is received by the theft deterrent control module. The theft deterrent control module then compares this value to a value stored in memory, learned key code. If the value is correct the theft deterrent control module sends a random generated number to the transponder, this is called a challenge. Both the transponder and the theft deterrent control module perform a calculation on the challenge, if the calculations match the theft deterrent control module sends the fuel enable password via the class 2 serial data circuit to the engine control module (ECM). If either the transponders unique value or the calculation to the challenge is incorrect the theft deterrent control module will send the fuel disable password to the ECM via the class 2 serial data circuit.

SIO-ID = 822042 LMD = 26-sep-2001

Conditions for Running the DTC

The ignition switch is in the ON position and the battery voltage is greater than 9.0 volts.

SIO-ID = 820039 LMD = 10-sep-2001

Condition for Setting the DTC

The theft deterrent control module is unable to measure the ignition key transponder value. This may be due to a damaged or missing transponder, a non Passkey III+ (PK3+) key, or a damaged exciter.

SIO-ID = 821954 LMD = 30-apr-2002

Action Taken When the DTC Sets

- The vehicle will not start.
- The theft deterrent control module sends a message via the serial data circuit to the radio to display SERVICE THEFT SYSTEM.
- The theft deterrent control module sends a message via the serial data circuit to the instrument panel cluster (IPC) to illuminate the SECURITY indicator.

SIO-ID = 668640 LMD = 19-sep-2001

Conditions for Clearing the MIL/DTC

- The theft deterrent control module clears the current status of the DTC when it senses a valid, memorized, transponder value from the ignition key.
- The DTC can be cleared by using a scan tool.

SIO-ID = 822031 LMD = 02-may-2002

Test Description

The numbers below refer to the step numbers on the diagnostic table:

2. Verifies the condition for setting DTC B3055 is current.
3. The key must be a Passkey III+ (PK3+) transponder key with an operating transponder for the system to work.
4. The only method to confirm whether the transponder in the key or the theft deterrent control module is malfunctioning is to try a alternative component in the system. The vehicle was delivered with 2 keys.
5. The possibility is unlikely that more than one key will be defective. If all keys do not work, the theft deterrent control module must be malfunctioning.
7. If a new key must be tried, the key must have the proper mechanical cut and the theft deterrent control module must “learn” the transponder value.
8. If only one key was available for the vehicle and the replacement key does not work, the theft deterrent control module must be malfunctioning.

DTC B3055

Step	Action	Yes	No
Schematic Reference: *Theft Deterrent System Schematics on page 11-2* **Connector End View Reference:** *Theft Deterrent System Connector End Views on page 11-6*			
1	Did you perform the Theft Deterrent Diagnostic System Check?	Go to *Step 2*	Go to *Diagnostic System Check - Theft Deterrent on page 11-8*
2	Is DTC B3055 set as a current code?	Go to *Step 3*	Go to *Testing for Intermittent and Poor Connections on page 8-14* in Wiring Systems
3	Inspect the vehicle’s key for damage to the molded head and for PK3+ embossed on the shank. Is the head of the key damaged or missing the PK3+ embossing?	Go to *Step 7*	Go to *Step 4*

DTC B3055 (cont'd)

Step	Action	Yes	No
4	Are more than one of the vehicles keys available?	Go to *Step 5*	Go to *Step 7*
5	1. Attempt to start the vehicle using all of the vehicle's available keys. 2. Using a scan tool, observe for any theft deterrent control module DTCs. Do any of the available keys start the vehicle?	Go to *Step 6*	Go to *Step 9*
6	Do all of the available keys cause DTC B3055 to set?	Go to *Step 9*	Go to *Step 7*
7	**Important:** Two learned master keys are required to perform the Adding Keys procedure on export vehicles with option code (UA2 OR Z49) 1. Replace the damaged/inoperative/suspect key. 2. Copy the mechanical cut of the available key on a passkey III+ (PK3+) replacement key. 3. Perform the Adding Keys procedure if a learned master key is available. Refer to *Adding Keys (Domestic) on page 11-48* or *Adding Keys (Export) on page 11-48*. If a learned master key is not available. Refer to *Replacing Keys on page 11-48*. Did you complete the replacement?	Go to *Step 9*	—
8	Does the replacement key cause DTC B3055 to set?	Go to *Step 9*	Go to *Step 10*
9	**Important:** If a 10 Minute or 30 Minute Re-Learn Procedure is perform, all keys not learned at that time will be erased and will not be recognized. Perform the Adding Keys procedure on all keys or instruct the customer how to perform the Adding Keys procedure. Refer to *Adding Keys (Domestic) on page 11-48* or *Adding Keys (Export) on page 11-48*. 1. Replace the theft deterrent control module. Refer to *Theft Deterrent Control Module Replacement on page 11-44*. 2. With a scan tool, perform the Set Up New VTD Module procedure in the Vehicle Theft Deterrent, Special Functions data list. 3. Perform the Programming Theft Deterrent System Components procedure. Refer to *Programming Theft Deterrent System Components on page 11-48*. Did you complete the replacement?	Go to *Step 10*	—
10	1. Use a scan tool in order to clear the DTCs 2. Attempt to start the vehicle. Does the DTC reset?	Go to *Step 2*	System OK

DTC B3060

SIE-ID = 822077 Owner = bdrend01 LMD = 30-apr-2002 LMB = bdrend01
SIO-ID = 883137 LMD = 30-apr-2002

Circuit Description

When an ignition key is inserted into the ignition lock cylinder and the ignition is switched ON, the transponder embedded in the head of the key is energized by the exciter coils surrounding the ignition lock cylinder. The energized transponder transmits a signal that contains its unique value, which is received by the theft deterrent control module. The theft deterrent control module then compares this value to a value stored in memory, learned key code. If the value is correct the theft deterrent control module sends a random generated number to the transponder, this is called a challenge. Both the transponder and the theft deterrent control module perform a calculation on the challenge, if the calculations match the theft deterrent control module sends the fuel enable password via the class 2 serial data circuit to the engine control module (ECM). If either the transponders unique value or the calculation to the challenge is incorrect the theft deterrent control module will send the fuel disable password to the ECM via the class 2 serial data circuit.

SIO-ID = 822042 LMD = 26-sep-2001

Conditions for Running the DTC

The ignition switch is in the ON position and the battery voltage is greater than 9.0 volts.

SIO-ID = 668598 LMD = 19-sep-2001

Conditions for Setting the DTC

If the transponder value from the ignition key does not match the one stored in memory, the theft deterrent control module sets this DTC. This DTC indicates the use of a key with a transponder value that has not been learned by the theft deterrent control module. The vehicle theft deterrent (VTD) system considers this to be a theft attempt.

SIO-ID = 821955 LMD = 30-apr-2002

Action Taken When the DTC Sets

- The vehicle will not start.
- The theft deterrent control module sends a message via the serial data circuit to the radio to display STARTING DISABLED REMOVE KEY.
- The theft deterrent control module sends a message via the serial data circuit to the instrument panel cluster (IPC) to flash the SECURITY indicator.

SIO-ID = 668640 LMD = 19-sep-2001

Conditions for Clearing the MIL/DTC

- The theft deterrent control module clears the current status of the DTC when it senses a valid, memorized, transponder value from the ignition key.
- The DTC can be cleared by using a scan tool.

SIO-ID = 822033 LMD = 02-may-2002

Test Description

The numbers below refer to the step numbers on the diagnostic table.

2. Verifies the condition for setting DTC B3060 is current.
4. The only method to determine which re-learn procedure to perform.
5. To set this DTC, a key with a working transponder that is not learned was read by the theft deterrent control module. For that key to operate the vehicle and one or more learned keys are available, perform the Adding Keys procedure.
6. To set this DTC, a key with a working transponder that is not learned was read by the theft deterrent control module. For that key to operate the vehicle, a 10 Minute Re-Learn Procedure or 30 Minute Re-Learn Procedure must be performed.

DTC B3060

Step	Action	Yes	No
Schematic Reference: *Theft Deterrent System Schematics on page 11-2* **Connector End View Reference:** *Theft Deterrent System Connector End Views on page 11-6*			
1	Did you perform the Theft Deterrent Diagnostic System Check?	Go to *Step 2*	Go to *Diagnostic System Check - Theft Deterrent on page 11-8*
2	Is DTC B3060 set as a current code?	Go to *Step 3*	Go to *Testing for Intermittent and Poor Connections on page 8-14* in Wiring Systems
3	Are more than one of the vehicle's keys available?	Go to *Step 4*	Go to *Step 6*
4	Attempt to start the vehicle using all of the vehicle's available master keys. Do any of the available master keys start the vehicle?	Go to *Step 5*	Go to *Step 6*

DTC B3060 (cont'd)

Step	Action	Yes	No
5	**Important:** Two learned master keys are required to perform the Adding Keys procedure on export vehicles with option code (UA2 OR Z49). If only one learned master key is avalable then the Replacing Keys procedure will need to be performed. Refer to *Replacing Keys on page 11-48*. With a learned master key perform the Adding Keys procedure on the suspect key. Refer to *Adding Keys (Domestic) on page 11-48* or *Adding Keys (Export) on page 11-48*. Is the procedure complete?	Go to *Step 7*	—
6	**Important:** If a 10 Minute or 30 Minute Re-Learn Procedure is performed, all keys not learned at that time will be erased and will not be recognized. Perform the Adding Keys procedure on all keys or instruct the customer how to perform the Adding Keys procedure. Refer to *Adding Keys (Domestic) on page 11-48* or *Adding Keys (Export) on page 11-48*. Perform the Programming Theft Deterrent System Components procedure. Refer to *Programming Theft Deterrent System Components on page 11-48*. Is the procedure complete?	Go to *Step 7*	—
7	1. Use the scan tool in order to clear the DTCs. 2. Operate the vehicle within the Conditions for Running the DTC as specified in the supporting text. Does the DTC reset?	Go to *Step 2*	System OK

DTC B3935

SIE-ID = 822160 Owner = bdrend01 LMD = 30-apr-2002 LMB = bdrend01

SIO-ID = 883137 LMD = 30-apr-2002

Circuit Description

When an ignition key is inserted into the ignition lock cylinder and the ignition is switched ON, the transponder embedded in the head of the key is energized by the exciter coils surrounding the ignition lock cylinder. The energized transponder transmits a signal that contains its unique value, which is received by the theft deterrent control module. The theft deterrent control module then compares this value to a value stored in memory, learned key code. If the value is correct the theft deterrent control module sends a random generated number to the transponder, this is called a challenge. Both the transponder and the theft deterrent control module perform a calculation on the challenge, if the calculations match the theft deterrent control module sends the fuel enable password via the class 2 serial data circuit to the engine control module (ECM). If either the transponders unique value or the calculation to the challenge is incorrect the theft deterrent control module will send the fuel disable password to the ECM via the class 2 serial data circuit.

SIO-ID = 822042 LMD = 26-sep-2001

Conditions for Running the DTC

The ignition switch is in the ON position and the battery voltage is greater than 9.0 volts.

SIO-ID = 821120 LMD = 25-mar-2002

Conditions for Setting the DTC

- The transponder value matches the value stored in the theft deterrent control modules memory.
- The transponders calculation on the challenge from the theft deterrent control module does not match the theft deterrent control modules calculation.

SIO-ID = 821955 LMD = 30-apr-2002

Action Taken When the DTC Sets

- The vehicle will not start.
- The theft deterrent control module sends a message via the serial data circuit to the radio to display STARTING DISABLED REMOVE KEY.
- The theft deterrent control module sends a message via the serial data circuit to the instrument panel cluster (IPC) to flash the SECURITY indicator.

SIO-ID = 821138 LMD = 03-jan-2002

Conditions for Clearing the MIL/DTC

- The theft deterrent control module clears the current status of the DTC when the transponders calculation on the challenge matches the theft deterrent control modules calculation.
- The DTC can be cleared by using a scan tool.

SIO-ID = 822159 LMD = 02-may-2002

Test Description

The numbers below refer to the step numbers on the diagnostic table:

2. Verifies the conditions for setting DTC B3055 or B3060 are not current.
3. If a new key must be tried, the key must have the proper mechanical cut and the theft deterrent control module must “learn” the transponder value.
4. If the replacement key does not work, the theft deterrent control module must be malfunctioning.

DTC B3935

Step	Action	Yes	No
Schematic Reference: *Theft Deterrent System Schematics on page 11-2* **Connector End View Reference:** *Theft Deterrent System Connector End Views on page 11-6*			
1	Did you perform the Theft Deterrent Diagnostic System Check?	Go to *Step 2*	Go to *Diagnostic System Check - Theft Deterrent on page 11-8*
2	Is DTC B3055 or B3060 set as a current code?	Go to *DTC B3055 on page 11-20* or *DTC B3060 on page 11-22*	Go to *Step 3*

DTC B3935 (cont'd)

Step	Action	Yes	No
3	**Important:** Two learned master keys are required to perform the Adding Keys procedure on export vehicles with option code (UA2 OR Z49) 1. Replace the suspect key. 2. Copy the mechanical cut of the available key on a pass key III+ (PK3+) replacement key. 3. Perform the Adding Keys procedure if a learned master key is available. Refer to *Adding Keys (Domestic) on page 11-48* or *Adding Keys (Export) on page 11-48*. If the required number of learned master keys are not available. Refer to *Replacing Keys on page 11-48*. Did you complete the replacement?	Go to *Step 4*	—
4	Does the replacement key cause DTC B3935 to set?	Go to *Step 5*	Go to *Step 6*
5	**Important:** If a 10 Minute or 30 Minute Re-Learn Procedure is perform, all keys not learned at that time will be erased and will not be recognized. Perform the Adding Keys procedure on all keys or instruct the customer how to perform the Adding Keys procedure. Refer to *Adding Keys (Domestic) on page 11-48* or *Adding Keys (Export) on page 11-48*. 1. Replace the theft deterrent control module. Refer to *Theft Deterrent Control Module Replacement on page 11-44*. 2. With a scan tool, perform the Set Up New VTD Module procedure in the Vehicle Theft Deterrent, Special Functions data list. 3. Perform the Programming Theft Deterrent System Components procedure. Refer to *Programming Theft Deterrent System Components on page 11-48*. Did you complete the replacement?	Go to *Step 6*	—
6	1. Use a scan tool in order to clear the DTCs 2. Attempt to start the vehicle. Does the DTC reset?	Go to *Step 2*	System OK

DTC B3976

SIE-ID = 883363 Owner = bdrend01 LMD = 30-apr-2002 LMB = bdrend01
SIO-ID = 822162 LMD = 26-sep-2001

Circuit Description

When the theft deterrent control module is in the learn coded key mode or learn more keys mode and the crypt valet mode is enabled the theft deterrent control module checks the passkey III plus key to insure it has been configured as a master key or a valet key.

SIO-ID = 822163 LMD = 26-sep-2001

Condition for Running the DTC

- The ignition switch is in the ON position.
- The theft deterrent control module is in the learn coded key mode or learn more keys mode.
- The crypt valet mode is enabled in the theft deterrent control module.

SIO-ID = 822164 LMD = 30-apr-2002

Conditions for Setting the DTC

The theft deterrent control module has determined that the passkey III+ (PK3+) key has not been configured as a master key or a valet key.

SIO-ID = 821954 LMD = 30-apr-2002

Action Taken When the DTC Sets

- The vehicle will not start.
- The theft deterrent control module sends a message via the serial data circuit to the radio to display SERVICE THEFT SYSTEM.
- The theft deterrent control module sends a message via the serial data circuit to the instrument panel cluster (IPC) to illuminate the SECURITY indicator.

SIO-ID = 883244 LMD = 11-jun-2002

Conditions for Clearing the MIL/DTC

- The Theft Deterrent control module clears the current DTC when the condition for setting is not present and the ignition is cycled from OFF to ON.
- The DTC can be cleared by using a scan tool.

SIO-ID = 883351 LMD = 02-may-2002

Test Description

The numbers below refer to the step numbers on the diagnostic table:

2. Verifies the conditions for setting DTC B3055 or B3060 are not current.
3. The key must have the proper mechanical cut and the theft deterrent control module must “learn” the transponder value.

DTC B3976

Step	Action	Yes	No
Schematic Reference: *Theft Deterrent System Schematics on page 11-2* **Connector End View Reference:** *Theft Deterrent System Connector End Views on page 11-6*			
1	Did you perform the Theft Deterrent Diagnostic System Check?	Go to *Step 2*	Go to *Diagnostic System Check - Theft Deterrent on page 11-8*
2	Is DTC B3055 or B3060 set as a current code?	Go to *DTC B3055 on page 11-20* or *DTC B3060 on page 11-22*	Go to *Step 3*
3	**Important:** Two learned master keys are required to perform the Adding Keys procedure on export vehicles with option code (UA2 OR Z49) 1. Replace the suspect key. 2. Copy the mechanical cut of the available key on a pass key III+ (PK3+) replacement key. 3. Perform the Adding Keys procedure if a learned master key is available. Refer to *Adding Keys (Domestic) on page 11-48* or *Adding Keys (Export) on page 11-48*. If the required number of learned master keys are not available. Refer to *Replacing Keys on page 11-48*. Did you complete the replacement?	Go to *Step 4*	—
4	1. Use a scan tool in order to clear the DTCs 2. Attempt to start the vehicle. Does the DTC reset?	Go to *Step 2*	System OK

DTC P1626

SIE-ID = 1250534 Owner = bdrend01 LMD = 07-mar-2003 LMB = bdrend01

Circuit Description

The theft deterrent control module sends the fuel enable password to the engine control module (ECM) via the serial data circuit. The ECM verifies the fuel enable password received matches the password stored in memory. If the fuel enable password is correct, the ECM enables the starting and fuel delivery systems. When replacing a ECM with a GM SPO replacement part, the new ECM will learn the incoming fuel enable password immediately upon receipt.

Conditions for Running the DTC

The ignition is on.

Conditions for Setting the DTC

The ECM has not received the fuel enable password from the theft deterrent control module within 1 second or the ECM is no longer receiving the fuel enable password from the theft deterrent control module.

Action Taken When the DTC Sets

- The vehicle will not start.
- The instrument panel cluster (IPC) will illuminate the SECURITY indicator.
- The ECM will not illuminate the malfunction indicator lamp (MIL).

Conditions for Clearing the MIL/DTC

- A history DTC will clear after 40 consecutive warm-up cycles have occurred without a malfunction.
- The DTC can be cleared by using a scan tool.

Test Description

The numbers below refer to the step numbers on the diagnostic table.

2. Verifies if the condition for setting DTC B3060 is current.
3. To set this code, The ECM has not received the fuel enable password from the theft deterrent control module within 1 second or the ECM is no longer receiving the fuel enable password from the theft deterrent control module.
5. If the ECM resets the DTC after the programming theft deterrent system components procedure has been performed, the theft deterrent control module is malfunctioning.

DTC P1626

Step	Action	Yes	No
Schematic Reference: *Theft Deterrent System Schematics on page 11-2* **Connector End View Reference:** *Theft Deterrent System Connector End Views on page 11-6*			
1	Did you perform the Theft Deterrent Diagnostic System Check?	Go to *Step 2*	Go to *Diagnostic System Check - Theft Deterrent on page 11-8*
2	Is DTC B3060 set as a current code?	Go to DTC B3060	Go to *Step 3*
3	**Important:** If a 10 Minute or 30 Minute Re-Learn Procedure is performed, all keys not learned at that time will be erased and will not be recognized. Perform the Adding Keys procedure on all keys or instruct the customer how to perform the Adding Keys procedure. Refer to *Adding Keys (Domestic) on page 11-48* or *Adding Keys (Export) on page 11-48*. Perform the Programming Theft Deterrent System Components procedure. Refer to *Programming Theft Deterrent System Components on page 11-48*. Is the procedure complete?	Go to *Step 4*	—
4	1. Use the scan tool in order to clear the DTCs. 2. Operate the vehicle within the Conditions for Running the DTC as specified in the supporting text. Does the DTC reset?	Go to *Step 5*	System OK

DTC P1626 (cont'd)

Step	Action	Yes	No
5	**Important:** If a 10 Minute or 30 Minute Re-Learn Procedure is performed, all keys not learned at that time will be erased and will not be recognized. Perform the Adding Keys procedure on all keys or instruct the customer how to perform the Adding Keys procedure. Refer to *Adding Keys (Domestic) on page 11-48* or *Adding Keys (Export) on page 11-48*. 1. Replace the theft deterrent control module. Refer to *Theft Deterrent Control Module Replacement on page 11-44*. 2. Perform the programming theft deterrent system components procedure. Refer to *Programming Theft Deterrent System Components on page 11-48*. Is the replacement complete?	Go to *Step 6*	—
6	1. Use the scan tool in order to clear the DTCs. 2. Operate the vehicle within the Conditions for Running the DTC as specified in the supporting text. Does the DTC reset?	Go to *Step 2*	System OK

DTC P1629

SIE-ID = 883920 Owner = bdrend01 LMD = 18-jun-2002 LMB = bdrend01

SIO-ID = 883748 LMD = 07-mar-2003

Circuit Description

The theft deterrent control module sends the fuel enable password to the engine control module (ECM) via the serial data circuit. The ECM verifies the fuel enable password received matches the password stored in memory. If the fuel conitnue password is correct, the ECM enables the starting and fuel delivery systems. When replacing a ECM with a GM SPO replacement part, the new ECM will learn the incoming fuel enable password immediately upon receipt.

SIO-ID = 673053 LMD = 11-oct-2000

Conditions for Running the DTC

The ignition is ON.

SIO-ID = 894404 LMD = 18-jun-2002

Conditions for Setting the DTC

The engine control module (ECM) has not received the fuel enable password from the theft deterrent control module within 1 second.

SIO-ID = 883909 LMD = 01-may-2002

Actions Taken When the DTC Sets

- The vehicle will not start.
- The instrument panel cluster (IPC) will illuminate the SECURITY indicator.
- The ECM will not illuminate the malfunction indicator lamp (MIL).

SIO-ID = 673072 LMD = 13-dec-2000

Conditions for Clearing the MIL/DTC

- A history DTC will clear after 40 consecutive warm-up cycles have occurred without a malfunction.
- The DTC can be cleared by using a scan tool.

SIO-ID = 883743 LMD = 01-may-2002

Diagnostic Aids

A GM SPO replacement engine control module (ECM) is in a functional state to learn the password from the theft deterrent control module. If the theft deterrent control module is replaced, the ECM must be placed in password learning mode to relearn the new password. Once learned, the password becomes permanent information that remains in the ECM. The loss of ECM battery or ignition voltage does not affect the programmed password information. Refer to *Programming Theft Deterrent System Components on page 11-48*.

SIO-ID = 822932 LMD = 12-nov-2002

Test Description

The numbers below refer to the step numbers on the diagnostic table.

2. Verifies if the condition for setting DTC B3060 is current.
3. To set this code, the password that the ECM has learned does not agree with the password being received from the theft deterrent control module or the ECM did not received the password from the theft deterrent control module. This condition can occur if the theft deterrent control module has been replaced and the Programming Theft Deterrent System Components procedure has not been performed.
5. If the ECM resets the DTC after the programming theft deterrent system components procedure has been performed, the theft deterrent control module is malfunctioning.

DTC P1629

Step	Action	Yes	No
Schematic Reference: *Theft Deterrent System Schematics on page 11-2* **Connector End View Reference:** *Theft Deterrent System Connector End Views on page 11-6*			
1	Did you perform the Theft Deterrent Diagnostic System Check?	Go to *Step 2*	Go to *Diagnostic System Check - Theft Deterrent on page 11-8*
2	Is DTC B3060 set as a current code?	Go to *DTC B3060 on page 11-22*	Go to *Step 3*
3	**Important:** If a 10 Minute or 30 Minute Re-Learn Procedure is performed, all keys not learned at that time will be erased and will not be recognized. Perform the Adding Keys procedure on all keys or instruct the customer how to perform the Adding Keys procedure. Refer to *Adding Keys (Domestic) on page 11-48* or *Adding Keys (Export) on page 11-48*. Perform the Programming Theft Deterrent System Components procedure. Refer to *Programming Theft Deterrent System Components on page 11-48*. Is the procedure complete?	Go to *Step 4*	—

DTC P1629 (cont'd)

Step	Action	Yes	No
4	1. Use the scan tool in order to clear the DTCs. 2. Operate the vehicle within the Conditions for Running the DTC as specified in the supporting text. Does the DTC reset?	Go to *Step 5*	System OK
5	**Important:** If a 10 Minute or 30 Minute Re-Learn Procedure is performed, all keys not learned at that time will be erased and will not be recognized. Perform the Adding Keys procedure on all keys or instruct the customer how to perform the Adding Keys procedure. Refer to. 1. Replace the theft deterrent control module. Refer to *Theft Deterrent Control Module Replacement on page 11-44*. 2. Perform the programming theft deterrent system components procedure. Refer to *Programming Theft Deterrent System Components on page 11-48*. Is the replacement complete?	Go to *Step 6*	—
6	1. Use the scan tool in order to clear the DTCs. 2. Operate the vehicle within the Conditions for Running the DTC as specified in the supporting text. Does the DTC reset?	Go to *Step 2*	System OK

DTC P1630

SIE-ID = 883915 Owner = bdrend01 LMD = 01-may-2002 LMB = bdrend01
SIO-ID = 883736 LMD = 07-mar-2003

Circuit Description

The theft deterrent control module sends the fuel enable password to the engine control module (ECM) via the serial data circuit. The ECM verifies the fuel enable password received matches the password stored in memory. If the fuel conitnue password is correct, the ECM enables the starting and fuel delivery systems. When replacing a ECM with a GM SPO replacement part, the new ECM will learn the incoming fuel enable password immediately upon receipt. DTC P1630 is an informational code indicating the ECM is ready to learn the fuel enable password.

SIO-ID = 673053 LMD = 11-oct-2000

Conditions for Running the DTC

The ignition is ON.

SIO-ID = 883733 LMD = 01-may-2002

Conditions for Setting the DTC

The engine control module (ECM) remains in theft deterrent password learn mode for more than 2 seconds.

SIO-ID = 883911 LMD = 01-may-2002

Actions Taken When the DTC Sets

- The engine control module (ECM) sends a serial data message to the instrument panel cluster (IPC) to illuminate the SECURITY indicator.
- The ECM will not illuminate the malfunction indicator lamp (MIL).

SIO-ID = 673072 LMD = 13-dec-2000

Conditions for Clearing the MIL/DTC

- A history DTC will clear after 40 consecutive warm-up cycles have occurred without a malfunction.
- The DTC can be cleared by using a scan tool.

SIO-ID = 883743 LMD = 01-may-2002

Diagnostic Aids

A GM SPO replacement engine control module (ECM) is in a functional state to learn the password from the theft deterrent control module. If the theft deterrent control module is replaced, the ECM must be placed in password learning mode to relearn the new password. Once learned, the password becomes permanent information that remains in the ECM. The loss of ECM battery or ignition voltage does not affect the programmed password information. Refer to *Programming Theft Deterrent System Components on page 11-48*.

SIO-ID = 686379 LMD = 24-apr-2002

DTC P1630

Step	Action	Yes	No
Schematic Reference: *Theft Deterrent System Schematics on page 11-2* **Connector End View Reference:** *Theft Deterrent System Connector End Views on page 11-6*			
1	Did you perform the Theft Deterrent Diagnostic System Check?	Go to *Programming Theft Deterrent System Components on page 11-48*	Go to *Diagnostic System Check - Theft Deterrent on page 11-8*

DTC P1631

SIE-ID = 883918 Owner = bdrend01 LMD = 01-may-2002 LMB = bdrend01

SIO-ID = 883748 LMD = 07-mar-2003

Circuit Description

The theft deterrent control module sends the fuel enable password to the engine control module (ECM) via the serial data circuit. The ECM verifies the fuel enable password received matches the password stored in memory. If the fuel conitnue password is correct, the ECM enables the starting and fuel delivery systems. When replacing a ECM with a GM SPO replacement part, the new ECM will learn the incoming fuel enable password immediately upon receipt.

SIO-ID = 673053 LMD = 11-oct-2000

Conditions for Running the DTC

The ignition is ON.

SIO-ID = 883724 LMD = 01-may-2002

Conditions for Setting the DTC

The engine control module (ECM) receives a incorrect password from the theft deterrent deterrent control module.

SIO-ID = 883909 LMD = 01-may-2002

Actions Taken When the DTC Sets

- The vehicle will not start.
- The instrument panel cluster (IPC) will illuminate the SECURITY indicator.
- The ECM will not illuminate the malfunction indicator lamp (MIL).

SIO-ID = 673072 LMD = 13-dec-2000

Conditions for Clearing the MIL/DTC

- A history DTC will clear after 40 consecutive warm-up cycles have occurred without a malfunction.
- The DTC can be cleared by using a scan tool.

SIO-ID = 883743 LMD = 01-may-2002

Diagnostic Aids

A GM SPO replacement engine control module (ECM) is in a functional state to learn the password from the theft deterrent control module. If the theft deterrent control module is replaced, the ECM must be placed in password learning mode to relearn the new password. Once learned, the password becomes permanent information that remains in the ECM. The loss of ECM battery or ignition voltage does not affect the programmed password information. Refer to *Programming Theft Deterrent System Components on page 11-48*.

SIO-ID = 822932 LMD = 12-nov-2002

Test Description

The numbers below refer to the step numbers on the diagnostic table.

2. Verifies if the condition for setting DTC B3060 is current.
3. To set this code, the password that the ECM has learned does not agree with the password being received from the theft deterrent control module or the ECM did not received the password from the theft deterrent control module. This condition can occur if the theft deterrent control module has been replaced and the Programming Theft Deterrent System Components procedure has not been performed.
5. If the ECM resets the DTC after the programming theft deterrent system components procedure has been performed, the theft deterrent control module is malfunctioning.

DTC P1631

Step	Action	Yes	No
Schematic Reference: *Theft Deterrent System Schematics on page 11-2* **Connector End View Reference:** *Theft Deterrent System Connector End Views on page 11-6*			
1	Did you perform the Theft Deterrent Diagnostic System Check?	Go to *Step 2*	Go to *Diagnostic System Check - Theft Deterrent on page 11-8*
2	Is DTC B3060 set as a current code?	Go to *DTC B3060 on page 11-22*	Go to *Step 3*
3	**Important:** If a 10 Minute or 30 Minute Re-Learn Procedure is performed, all keys not learned at that time will be erased and will not be recognized. Perform the Adding Keys procedure on all keys or instruct the customer how to perform the Adding Keys procedure. Refer to *Adding Keys (Domestic) on page 11-48* or *Adding Keys (Export) on page 11-48*. Perform the Programming Theft Deterrent System Components procedure. Refer to *Programming Theft Deterrent System Components on page 11-48*. Is the procedure complete?	Go to *Step 4*	—

DTC P1631 (cont'd)

Step	Action	Yes	No
4	1. Use the scan tool in order to clear the DTCs. 2. Operate the vehicle within the Conditions for Running the DTC as specified in the supporting text. Does the DTC reset?	Go to *Step 5*	System OK
5	**Important:** If a 10 Minute or 30 Minute Re-Learn Procedure is performed, all keys not learned at that time will be erased and will not be recognized. Perform the Adding Keys procedure on all keys or instruct the customer how to perform the Adding Keys procedure. Refer to. 1. Replace the theft deterrent control module. Refer to *Theft Deterrent Control Module Replacement on page 11-44*. 2. Perform the programming theft deterrent system components procedure. Refer to *Programming Theft Deterrent System Components on page 11-48*. Is the replacement complete?	Go to *Step 6*	—
6	1. Use the scan tool in order to clear the DTCs. 2. Operate the vehicle within the Conditions for Running the DTC as specified in the supporting text. Does the DTC reset?	Go to *Step 2*	System OK

Symptoms - Theft Deterrent

SIE-ID = 763045 Owner = rgrave01 LMD = 03-may-2002 LMB = rgrave01

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

1. Perform the *Diagnostic System Check - Theft Deterrent on page 11-8* before using the Symptom Tables in order to verify that all of the following are true:
   - There are no DTCs set.
   - The control module(s) can communicate via the serial data link.
2. Review the theft systems description and operation in order to familiarize yourself with the system functions. Refer to:
   - *Theft Systems Description and Operation on page 11-51*
   - *Content Theft Deterrent (CTD) Description and Operation on page 11-51*
   - *Vehicle Theft Deterrent (VTD) Description and Operation on page 11-53*

Visual/Physical Inspection

- Inspect for aftermarket accessories which could affect the operation of the theft system. Refer to *Checking Aftermarket Accessories on page 8-10* in Wiring Systems.
- Inspect the easily accessible or visible system components for obvious damage or conditions which could cause the symptom.
- Inspect the ignition key for "PK3" stamped on the shank.
- Inspect the PASS-Key®III key head for damage.

Intermittent

Faulty electrical connections or wiring may be the cause of intermittent conditions. Refer to *Testing for Intermittent and Poor Connections on page 8-14* in Wiring Systems.

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 on page 11-33*
- *Content Theft Deterrent (CTD) Does Not Disarm with Key Lock on page 11-36*
- *Horn Inoperative in Content Theft Deterrent (CTD) Alarm Mode on page 11-37*
- *Lights Inoperative in Content Theft Deterrent (CTD) Alarm Mode on page 11-38*
- *Security Indicator Inoperative on page 11-38*
- *Inclination Sensor Inoperative on page 11-39*
- *Intrusion Sensor Inoperative on page 11-40*
- *Theft Deterrent Alarm Inoperative on page 11-41*

Content Theft Deterrent (CTD) Alarm Mode Inoperative

SIE-ID = 763044 Owner = rgrave01 LMD = 15-jul-2002 LMB = rgrave01

Test Descrpition

The numbers below refer to the step numbers on the diagnostic table:

11. Step 11 and Step 12 apply only to vehicles equipped with RPO UA2. If the vehicle is not epuipped with RPO UA2, proceed directly to Step 13.
12. Step 11 and Step 12 apply only to vehicles equipped with RPO UA2. If the vehicle is not epuipped with RPO UA2, proceed directly to Step 13.
15. Step 15 applies only to vehicles equipped with RPO UA2. If the vehicle is not epuipped with RPO UA2, proceed directly to Step 16.

Content Theft Deterrent (CTD) Alarm Mode Inoperative

Step	Action	Yes	No
Schematic Reference: *Theft Deterrent System Schematics on page 11-2* **Connector End View Reference:** *Theft Deterrent System Connector End Views on page 11-6* DEFINITION: The Content Theft Deterrent (CTD) system does not arm, or does not alarm upon an unauthorized entry.			
1	Did you perform the Theft Deterrent Diagnostic System Check?	Go to *Step 2*	Go to *Diagnostic System Check - Theft Deterrent on page 11-8*
2	1. Make sure the rear compartment lid is closed completely. 2. Turn ON the ignition, with the engine OFF. 3. Observe the Trunk Open message on the driver information center. Does the driver information center display TRUNK OPEN?	Go to *Trunk Ajar Indicator Always On on page 8-11* in Body Rear End	Go to *Step 3*
3	1. Make sure the hood is completely closed. 2. With a scan tool, observe the Hood Ajar Switch parameter in the Dash Integration Module (DIM) Inputs data list. Does the scan tool indicate that the Hood Ajar Switch is ON?	Go to *Step 4*	Go to *Step 7*
4	1. Turn the ignition OFF. 2. Disconnect the hood ajar switch harness connector. 3. Turn the ignition ON. 4. With a scan tool, observe the Hood Ajar Switch parameter. Does the scan tool indicate that the Hood Ajar Switch is On?	Go to *Step 17*	Go to *Step 5*
5	1. Connect a 5 Amp fused jumper wire between the Hood Ajar Swtich signal circuit and the ground circuit of the hood ajar switch at the hood ajar switch harness connector. 2. Observe the Hood Ajar Switch parameter in the DIM Inputs data list. Does the scan tool indicate that the Hood Ajar Switch parameter is ON?	Go to *Step 20*	Go to *Step 6*
6	1. Connect a 5 Amp fused jumper wire between the Hood Ajar Swtich signal circuit and a good ground. 2. Observe the Hood Ajar Switch parameter in the DIM Inputs data list. Does the scan tool indicate that the Hood Ajar Switch parameter is ON?	Go to *Step 19*	Go to *Step 18*
7	1. Open the driver's window. 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's door. 5. Observe the SECURITY indicator. Does the SECURITY indicator flash?	Go to *Step 8*	Go to *Courtesy Lamps Inoperative on page 8-94* in Lighting Systems
8	1. Lock the vehicle using the power door lock switches or the keyless entry transmitter. 2. Observe the SECURITY indicator. Does the SECURITY indicator change from flashing to on steady?	Go to *Step 9*	Go to *Power Door Locks Inoperative on page 8-86* in Doors
9	1. Close all of the doors, the hood, and rear compartment lid. **Important:** Ensure that all the doors, the hood, and the rear compartment lid are closed. The Content Theft Deterrent System will not arm itself without all of the doors, the hood, and rear compartment lid being closed. 2. Observe the SECURITY indicator. Does the SECURITY indicator turn off in about 30 seconds?	Go to *Step 10*	Go to *Courtesy Lamps Always On on page 8-92* in Lighting Systems

Content Theft Deterrent (CTD) Alarm Mode Inoperative (cont'd)

Step	Action	Yes	No
10	1. Reach in and manually unlock the driver's door. 2. Open the driver's door. Do all of the Alarm mode functions activate (parking lights flash, horn pulses, and Theft Deterrent Alarm sounds)?	Go to *Step 11*	Go to *Step 14*
11	1. Re-arm the CTD system. 2. Reach into the vehicle through the open window, and wave your arm for several seconds. Does the CTD alarm mode activate?	Go to *Step 12*	Go to *Intrusion Sensor Inoperative on page 11-40*
12	1. Re-arm the CTD system. 2. Raise one wheel of the vehicle off of the ground. **Important:** Do not raise the vehicle on a hoist. The angle of the vehicle must change in order for the intrusion sensor to activate the CTD alarm mode. Does the CTD alarm mode activate?	Go to *Step 13*	Go to *Inclination Sensor Inoperative on page 11-39*
13	Disarm the CTD system by inserting the door key into the driver door lock cylinder and rotate it to the unlock position. Do all of the Alarm mode functions stop?	Go to *Testing for Intermittent and Poor Connections on page 8-14* in Wiring Systems	Go to *Content Theft Deterrent (CTD) Does Not Disarm with Key Lock on page 11-36*
14	Do any of the alarm functions activate?	Go to *Step 15*	Go to *Courtesy Lamps Inoperative on page 8-94* in Lighting Systems
15	Does the Theft Deterrent Alarm sound?	Go to *Step 16*	Go to *Theft Deterrent Alarm Inoperative on page 11-41*
16	Do the parking lights flash?	Go to *Horn Inoperative in Content Theft Deterrent (CTD) Alarm Mode on page 11-37*	Go to *Lights Inoperative in Content Theft Deterrent (CTD) Alarm Mode on page 11-38*
17	Test the Hood Ajar Switch signal circuit for a short to ground. Did you find and correct the condition?	Go to *Step 24*	Go to *Step 21*
18	Test the Hood Ajar Switch signal circuit for a short to voltage or an open. Did you find and correct the condition?	Go to *Step 24*	Go to *Step 21*
19	Repair the open in the Hood Ajar Switch ground cicruit. Did you complete the repair?	Go to *Step 24*	—
20	Inspect for loose or poor connections at the harness connector of the Hood Ajar Switch. Refer to *Testing for Intermittent and Poor Connections on page 8-14* in Wiring Systems. Did you find and correct the condition?	Go to *Step 24*	Go to *Step 22*
21	Inspect for loose or poor connections at the harness connector of the DIM. Refer to *Testing for Intermittent and Poor Connections on page 8-14* in Wiring Systems. Did you find and correct the condition?	Go to *Step 24*	Go to *Step 23*
22	Replace the Hood Ajar Switch. Refer to Hood Ajar Switch Replacement. Did you complete the repair?	Go to *Step 24*	—
23	Replace the Dash Integration Module (DIM). Refer to *Dash Integration Module Replacement on page 8-35*. Did you complete the repair?	Go to *Step 24*	—
24	Operate the system in order to verify the repair. Did you correct the condition?	System OK	Go to *Step 2*

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

SIE-ID = 758115 Owner = rgrave01 LMD = 11-jun-2002 LMB = hlogan01

Test Description

The number below refers to the step number on the diagnostic table.

Important: For Diagnostic Aids, refer to *Testing for Intermittent and Poor Connections on page 8-14* and *Testing for Electrical Intermittents on page 8-15* in Wiring Systems.

3. Scan tool should read the normal state operation.

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

Step	Action	Yes	No
Schematic Reference: *Theft Deterrent System Schematics on page 11-2* **Connector End View Reference:** *Theft Deterrent System Connector End Views on page 11-6* DEFINITION: The Content Theft Deterrent (CTD) system does not disarm when the vehicle is unlocked with the key.			
1	Did you perform the Theft Deterrent Diagnostic System Check?	Go to *Step 2*	Go to *Diagnostic System Check - Theft Deterrent on page 11-8*
2	1. Install a scan tool. 2. Turn ON the ignition, with the engine OFF. 3. With a scan tool, observe the drivers door cylinder switch parameter in the driver door module (DDM) Inputs data list. Does the scan tool display IDLE?	Go to *Step 3*	Go to *Step 7*
3	1. With the scan tool, observe the drivers door cylinder switch parameter. 2. Insert and rotate a key to the unlock position in the drivers door key cylinder. Does the drivers door cylinder switch parameter display UNLOCK as the key is rotated to the unlock position?	Go to *Testing for Intermittent and Poor Connections on page 8-14* in Wiring Systems	Go to *Step 4*
4	Inspect the drivers door key cylinder for mechanical malfunction (disconnected, binding or bent lock rod, obstructions, etc.). Did you find and correct the condition?	Go to *Step 15*	Go to *Step 5*
5	1. Turn OFF the ignition. 2. Disconnect the drivers door cylinder switch connector from the door lock actuator. 3. Connect a 3 amp fused jumper wire between the drivers door lock actuator door cylinder switch harness connector signal circuit to the drivers door lock actuator door cylinder switch harness connector ground circuit. 4. Turn ON the ignition, with the engine OFF. 5. With a scan tool, observe the drivers door cylinder switch parameter in the DDM inputs data list. Does the scan tool display UNLOCK?	Go to *Step 11*	Go to *Step 6*
6	1. Turn OFF the ignition. 2. Disconnect the drivers door cylinder switch connector from the door lock actuator. 3. Connect a 3 amp fused jumper wire between the drivers door lock actuator door cylinder switch harness connector signal circuit and a good ground. 4. Turn ON the ignition, with the engine OFF. 5. With a scan tool, observe the drivers door cylinder switch parameter in the DDM inputs data list. Does the scan tool display UNLOCK?	Go to *Step 9*	Go to *Step 10*

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

Step	Action	Yes	No
7	1. Turn OFF the ignition. 2. Disconnect the drivers door lock actuator door cylinder switch circuit connector. 3. Turn ON the ignition, with the engine OFF. 4. With a scan tool, observe the drivers door cylinder switch parameter in the DDM inputs data list. Does the scan tool display IDLE?	Go to *Step 11*	Go to *Step 8*
8	Test the drivers door lock actuator door cylinder switch signal circuit for a short to voltage or an open circuit. Refer to *Circuit Testing on page 8-10* and *Wiring Repairs on page 8-16* in Wiring Systems. Did you find and correct the condition?	Go to *Step 15*	Go to *Step 12*
9	Test the drivers door lock actuator door cylinder switch ground circuit for a short to voltage or an open circuit. Refer to *Circuit Testing on page 8-10* and *Wiring Repairs on page 8-16* in Wiring Systems. Did you find and correct the condition?	Go to *Step 15*	Go to *Step 12*
10	Test the drivers door lock actuator door key cylinder switch signal circuit for a short to ground. Refer to *Circuit Testing on page 8-10* and *Wiring Repairs on page 8-16* in Wiring Systems. Did you find and correct the condition?	Go to *Step 15*	Go to *Step 12*
11	Inspect for poor connections at the harness connector of the drivers door lock actuator. Refer to *Testing for Intermittent and Poor Connections on page 8-14* and *Connector Repairs on page 8-25* in Wiring Systems. Did you find and correct the condition?	Go to *Step 15*	Go to *Step 13*
12	Inspect for poor connections at the harness connector of the DDM. Refer to *Testing for Intermittent and Poor Connections on page 8-14* and *Connector Repairs on page 8-25* in Wiring Systems. Did you find and correct the condition?	Go to *Step 15*	Go to *Step 14*
13	Replace the drivers door lock actuator. Refer to *Latch Replacement - Front Door on page 8-137* in Doors. Did you complete the replacement?	Go to *Step 15*	—
14	Replace the DDM. Refer to *Door Control Module Replacement on page 8-113* in Doors. Did you complete the replacement?	Go to *Step 15*	—
15	Operate the system to verify the repair. Did you correct the condition?	System OK	Go to *Step 2*

SIE-ID = 764627 Owner = rgrave01 LMD = 15-jul-2002 LMB = rgrave01

Horn Inoperative in Content Theft Deterrent (CTD) Alarm Mode

Step	Action	Yes	No
Schematic Reference: *Theft Deterrent System Schematics on page 11-2* **Connector End View Reference:** *Theft Deterrent System Connector End Views on page 11-6* DEFINITION: The horn does not sound when the CTD system is in alarm mode.			
1	Did you perform the Theft Deterrent Diagnostic System Check?	Go to *Step 2*	Go to *Diagnostic System Check - Theft Deterrent on page 11-8*

Horn Inoperative in Content Theft Deterrent (CTD) Alarm Mode (cont'd)

Step	Action	Yes	No
2	Perform the following to activate the CTD Alarm Mode: 1. Open the drivers window. 2. Lock the vehicle using the power door locks or the keyless entry transmitter. 3. Close all doors. 4. Wait for the SECURITY indicator to go off (30 seconds). 5. Reach in and manually unlock the driver's door. 6. Open the drivers door. Do all of the Alarm mode functions activate (Lights flash and horn pulses)?	Go to *Testing for Intermittent and Poor Connections on page 8-14* in Wiring Systems	Go to *Step 3*
3	Are only the horns inoperative?	Go to *Horn Replacement on page 8-13* in Horns	Go to *Content Theft Deterrent (CTD) Alarm Mode Inoperative on page 11-33*

SIE-ID = 762932 Owner = rgrave01 LMD = 07-may-2002 LMB = rgrave01

Lights Inoperative in Content Theft Deterrent (CTD) Alarm Mode

Step	Action	Yes	No
Schematic Reference: *Theft Deterrent System Schematics on page 11-2* **Connector End View Reference:** *Theft Deterrent System Connector End Views on page 11-6* DEFINITION: The lights do not flash when the CTD system is in alarm mode.			
1	Did you perform the Theft Deterrent Diagnostic System Check?	Go to *Step 2*	Go to *Diagnostic System Check - Theft Deterrent on page 11-8*
2	Perform the following to activate the CTD alarm mode: • Open the drivers window. • Lock the vehicle using the power door lock switch. • Wait for the SECURITY indicator to turn off. • Reach in and unlock the drivers door. • Open the drivers door. Do all of the alarm mode functions activate (lights flash and horn pulses)?	Go to *Testing for Intermittent and Poor Connections on page 8-14* in Wiring Systems	Go to *Step 3*
3	Are only the parking lamps inoperative?	Go to *Park Lamps Inoperative on page 8-139* in Lighting Systems	Go to *Content Theft Deterrent (CTD) Alarm Mode Inoperative on page 11-33*

SIE-ID = 758124 Owner = rgrave01 LMD = 07-may-2002 LMB = rgrave01

Security Indicator Inoperative

Step	Action	Yes	No
Schematic Reference: *Theft Deterrent System Schematics on page 11-2* **Connector End View Reference:** *Theft Deterrent System Connector End Views on page 11-6* DEFINITION: The security indicator does illuminate to correctly indicate the status of the CTD system.			
1	Did you perform the Theft Deterrent Diagnostic System Check?	Go to *Step 2*	Go to *Diagnostic System Check - Theft Deterrent on page 11-8*
2	1. Turn OFF the ignition. 2. Turn ON the ignition, with the engine OFF. 3. Observe the SECURITY indicator on the instrument cluster (IPC) during the bulb check. Does the SECURITY indicator illuminate during the bulb check?	Go to *Testing for Intermittent and Poor Connections on page 8-14* in Wiring Systems	Go to *Step 3*

Security Indicator Inoperative (cont'd)

Step	Action	Yes	No
3	Replace the instrument cluster (IPC). Refer to *Instrument Panel Cluster (IPC) Replacement on page 8-71* In Instrument Panel, Gages and Console. Did you complete the replacement?	Go to *Step 4*	—
4	Operate the system in order to verify the repair. Did you correct the condition?	System OK	Go to *Step 2*

Inclination Sensor Inoperative

SIE-ID = 884847 Owner = rgrave01 LMD = 15-jul-2002 LMB = rgrave01

Important: Before attempting to diagnose the inclination sensor, insure that the Inclination Sensor Part A, and Part B is enabled in the Dash Integration Module (DIM) Set Options menu.

Inclination Sensor Inoperative

Step	Action	Values	Yes	No
Schematic Reference: *Theft Deterrent System Schematics on page 11-2* **Connector End View Reference:** *Theft Deterrent System Connector End Views on page 11-6* DEFINITION: After arming, the Content Theft Deterrent (CTD) system does not enter alarm mode when one or more of the vehicle wheels are raised off of the ground.				
1	Did you perform the Theft Deterrent System Diagnostic System Check?	—	Go to *Step 2*	Go to *Diagnostic System Check - Theft Deterrent on page 11-8*
2	Were you sent here from Content Theft Deterrent (CTD) Alarm Mode Inoperative?	—	Go to *Step 3*	Go to *Content Theft Deterrent (CTD) Alarm Mode Inoperative on page 11-33*
3	1. Turn the ignition OFF. 2. Disconnect the inclination sensor harness connector. 3. Probe the inclination sensor battery positive voltage circuit at the inclination sensor harness connector with a test lamp that is connected to a good ground. Does the test lamp illuminate?	—	Go to *Step 4*	Go to *Step 8*
4	With a Digital Multimeter (DMM), measure the voltage of the inclination sensor signal circuit at the inclination sensor harness connector. Is the voltage near the specified value?	B+	Go to *Step 5*	Go to *Step 6*
5	Test the inclination sensor supply voltage circuit for a short to voltage, a short to ground, or an open. Refer to *Circuit Testing on page 8-10* and *Wiring Repairs on page 8-16* in Wiring Systems. Did you find and correct the condition?	—	Go to *Step 12*	Go to *Step 7*
6	Test the inclination sensor signal circuit for an open or a short to ground. Refer to *Circuit Testing on page 8-10* and *Wiring Repairs on page 8-16* in Wiring Systems. Did you find and correct the condition?	—	Go to *Step 12*	Go to *Step 10*
7	Inspect for a loose or poor connection at the harness connector of the inclination sensor. Refer to *Testing for Intermittent and Poor Connections on page 8-14* and *Connector Repairs on page 8-25* in Wiring Systems. Did you find and correct the condition?	—	Go to *Step 12*	Go to *Step 9*

Inclination Sensor Inoperative (cont'd)

Step	Action	Values	Yes	No
8	Repair the inclination sensor battery positive voltage circuit. Refer to *Wiring Repairs on page 8-16* in Wiring Systems. Did you correct the condition?	—	Go to *Step 12*	—
9	Replace the inclination sensor. Refer to *Theft Deterrent Inclination Sensor Replacement on page 11-46* Did you correct the condition?	—	Go to *Step 12*	Go to *Step 10*
10	Inspect for a loose or poor connection at the harness connector of the Rear Integration Module (RIM). Refer to *Testing for Intermittent and Poor Connections on page 8-14* and *Connector Repairs on page 8-25* in Wiring Systems. Did you find and correct the condition?	—	Go to *Step 12*	Go to *Step 11*
11	Replace the RIM. Refer to *Rear Integration Module Replacement on page 8-36* in Body Control System. Did you complete the repair?	—	Go to *Step 12*	—
12	Operate the system in order to verify the repair. Did you correct the condition?	—	System OK	Go to *Step 3*

Intrusion Sensor Inoperative

SIE-ID = 884850 Owner = rgrave01 LMD = 15-jul-2002 LMB = rgrave01

Important: Before attempting to diagnose the inclination sensor, insure that the Intrusion Sensor Part A, and Part B is enabled in the Dash Integration Module (DIM) Set Options menu.

Intrusion Sensor Inoperative

Step	Action	Values	Yes	No
Schematic Reference: *Theft Deterrent System Schematics on page 11-2* **Connector End View Reference:** *Theft Deterrent System Connector End Views on page 11-6* DEFINITION: After arming, the Content Theft Deterrent (CTD) system does not enter alarm mode when there is motion inside the vehicle.				
1	Did you perform the Theft Deterrent System Diagnostic System Check?	—	Go to *Step 2*	Go to *Diagnostic System Check - Theft Deterrent on page 11-8*
2	Were you sent here from Content Theft Deterrent (CTD) Alarm Mode Inoperative?	—	Go to *Step 3*	Go to *Content Theft Deterrent (CTD) Alarm Mode Inoperative on page 11-33*
3	1. Turn the ignition OFF. 2. Disconnect the intrusion sensor harness connector. 3. Probe the intrusion sensor battery positive voltage circuit at the intrusion sensor harness connector with a test lamp that is connected to a good ground. Does the test lamp illuminate?	—	Go to *Step 4*	Go to *Step 8*
4	With a Digital Multimeter (DMM), measure the voltage of the intrusion sensor alarm on signal circuit at the intrusion sensor harness connector. Is the voltage near the specified value?	B+	Go to *Step 5*	Go to *Step 6*
5	Test the intrusion sensor armed signal circuit for a short to voltage, a short to ground, or an open. Refer to *Circuit Testing on page 8-10* and *Wiring Repairs on page 8-16* in Wiring Systems. Did you find and correct the condition?	—	Go to *Step 12*	Go to *Step 7*

Intrusion Sensor Inoperative (cont'd)

Step	Action	Values	Yes	No
6	Test the intrusion sensor alarm on signal circuit for an open or a short to ground. Refer to *Circuit Testing on page 8-10* and *Wiring Repairs on page 8-16* in Wiring Systems. Did you find and correct the condition?	—	Go to *Step 12*	Go to *Step 10*
7	Inspect for a loose or poor connection at the harness connector of the intrusion sensor. Refer to *Testing for Intermittent and Poor Connections on page 8-14* and *Connector Repairs on page 8-25* in Wiring Systems. Did you find and correct the condition?	—	Go to *Step 12*	Go to *Step 9*
8	Repair the intrusion sensor battery positive voltage circuit. Refer to *Wiring Repairs on page 8-16* in Wiring Systems. Did you correct the condition?	—	Go to *Step 12*	—
9	Replace the intrusion sensor. Refer to *Theft Deterrent Intrusion Sensor Replacement on page 11-44*. Did you correct the condition?	—	Go to *Step 12*	Go to *Step 10*
10	Inspect for a loose or poor connection at the harness connector of the Rear Integration Module (RIM). Refer to *Testing for Intermittent and Poor Connections on page 8-14* and *Connector Repairs on page 8-25* in Wiring Systems. Did you find and correct the condition?	—	Go to *Step 12*	Go to *Step 11*
11	Replace the RIM. Refer to *Rear Integration Module Replacement on page 8-36* in Body Control System. Did you complete the repair?	—	Go to *Step 12*	—
12	Operate the system in order to verify the repair. Did you correct the condition?	—	System OK	Go to *Step 3*

Theft Deterrent Alarm Inoperative

SIE-ID = 884859 Owner = rgrave01 LMD = 08-oct-2002 LMB = rgrave01

Important: Before attempting to diagnose the Theft Deterrent Alarm, insure that the ASM Part A, and ASM Part B are enabled in the Dash Integration Module (DIM) Set Options menu.

Theft Deterrent Alarm Inoperative

Step	Action	Values	Yes	No
Schematic Reference: *Theft Deterrent System Schematics on page 11-2* **Connector End View Reference:** *Theft Deterrent System Connector End Views on page 11-6* DEFINITION: THE Theft Deterrent Alarm does not sound when the CTD system is in alarm mode, Or: The Theft Deterrent Alarm sounds when the CTD system is not in alarm mode.				
1	Did you perform the Theft Deterrent System Diagnostic System Check?	—	Go to *Step 2*	Go to *Diagnostic System Check - Theft Deterrent on page 11-8*
2	Were you sent here from Content Theft Deterrent (CTD) Alarm Mode Inoperative?	—	Go to *Step 3*	Go to *Content Theft Deterrent (CTD) Alarm Mode Inoperative on page 11-33*
3	Does the Theft Deterrent Alarm sound when the CTD system is not in alarm mode?	—	Go to *Step 4*	Go to *Step 5*
4	Does the Theft Deterrent Alarm sound when the ignition is ON?	—	Go to *Step 6*	Go to *Step 7*
5	Disconnect the Theft Deterrent Alarm harness connector. Does the Theft Deterrent Alarm sound?	—	Go to *Step 8*	Go to *Step 9*

Theft Deterrent Alarm Inoperative (cont'd)

Step	Action	Values	Yes	No
6	1. Turn the ignition ON. 2. Probe the Ignition 1 voltage circuit at the Theft Deterrent Alarm harness connector with a test lamp that is connected to a good ground. Does the test lamp illuminate?	—	Go to *Step 9*	Go to *Step 13*
7	Measure the voltage of the hazard switch signal circuit at the Theft Deterrent Alarm harness connector with a Digital Multimeter (DMM). Is the voltage near the specified value?	12 V	Go to *Step 9*	Go to *Step 11*
8	Test the Theft Deterrent Alarm hazard switch signal circuit for a short to voltage. Refer to *Circuit Testing on page 8-10* and *Wiring Repairs on page 8-16* in Wiring Systems. Did you find and correct the condition?	—	Go to *Step 18*	Go to *Step 12*
9	Test the Theft Deterrent Alarm ground circuit for an open. Refer to *Circuit Testing on page 8-10* and *Wiring Repairs on page 8-16* in Wiring Systems. Did you find and correct the condition?	—	Go to *Step 18*	Go to *Step 10*
10	Test the Theft Deterrent Alarm battery positive voltage circuit for an open or a short to ground. Refer to *Circuit Testing on page 8-10* and *Wiring Repairs on page 8-16* in Wiring Systems. Did you find and correct the condition?	—	Go to *Step 18*	Go to *Step 14*
11	Test the Theft Deterrent Alarm hazard switch signal circuit for an open or a short to ground. Refer to *Circuit Testing on page 8-10* and *Wiring Repairs on page 8-16* in Wiring Systems. Did you find and correct the condition?	—	Go to *Step 18*	Go to *Step 15*
12	Repair the short to voltage on the Theft Deterrent Alarm Ignition 1 voltage circuit. Refer to *Circuit Testing on page 8-10* and *Wiring Repairs on page 8-16* in Wiring Systems. Did you complete the repair?	—	Go to *Step 18*	—
13	Repair the short to ground or the open in the Theft Deterrent Alarm Ignition 1 voltage circuit. Refer to *Circuit Testing on page 8-10* and *Wiring Repairs on page 8-16* in Wiring Systems. Did you complete the repair?	—	Go to *Step 18*	—
14	Inspect for a loose or poor connection at the harness connector of the Theft Deterrent Alarm. Refer to *Testing for Intermittent and Poor Connections on page 8-14* and *Connector Repairs on page 8-25* in Wiring Systems. Did you find and correct the condition?	—	Go to *Step 18*	Go to *Step 16*
15	Inspect for a loose or poor connection at the harness connector of the Rear Integration Module (RIM). Refer to *Testing for Intermittent and Poor Connections on page 8-14* and *Connector Repairs on page 8-25* in Wiring Systems. Did you find and correct the condition?	—	Go to *Step 18*	Go to *Step 17*
16	Replace the Theft Deterrent Alarm. Refer to *Theft Deterrent Alarm Replacement on page 11-45*. Did you complete the repair?	—	Go to *Step 18*	—
17	Replace the RIM. Refer to *Rear Integration Module Replacement on page 8-36* in Body Control System. Did you complete the repair?	—	Go to *Step 18*	—
18	Operate the system in order to verify the repair. Did you correct the condition?	—	System OK	Go to *Step 3*

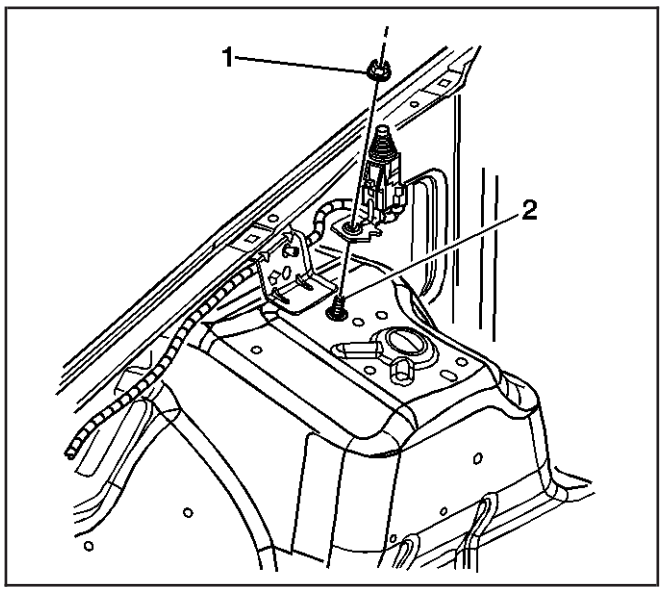
Repair Instructions

Hood Ajar Switch Replacement

SIE-ID = 899955 Owner = dtrahe01 LMD = 15-jul-2002 LMB = hinks

Removal Procedure

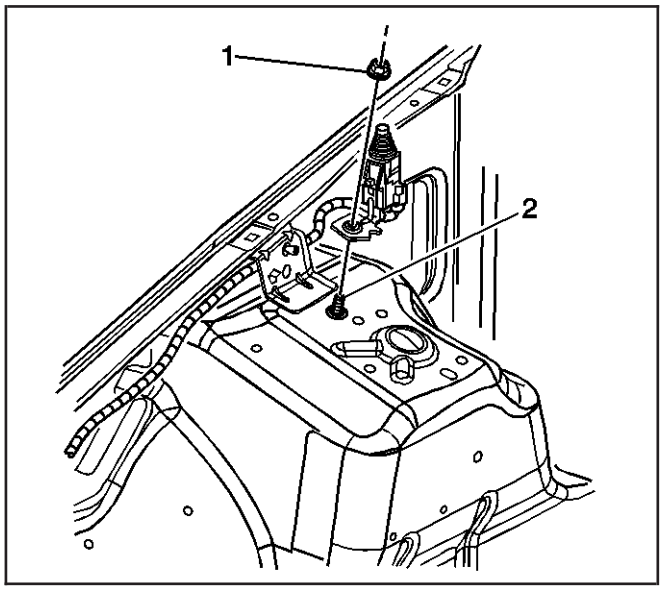
1. Open the hood.
2. Remove the nut (1) from the stud (2) securing the hood ajar switch to the strut tower.
3. Lift the hood ajar switch upward in order to remove the switch from the strut tower.
4. Disconnect the electrical connector from the hood ajar switch.



803041

Installation Procedure

1. Connect the hood ajar switch electrical connector to the hood ajar switch.
2. Position the hood ajar switch over the stud (2) to the strut tower assembly.
3. Install the nut (1) in order to secure the hood ajar switch to strut tower assembly.
4. Close the hood.



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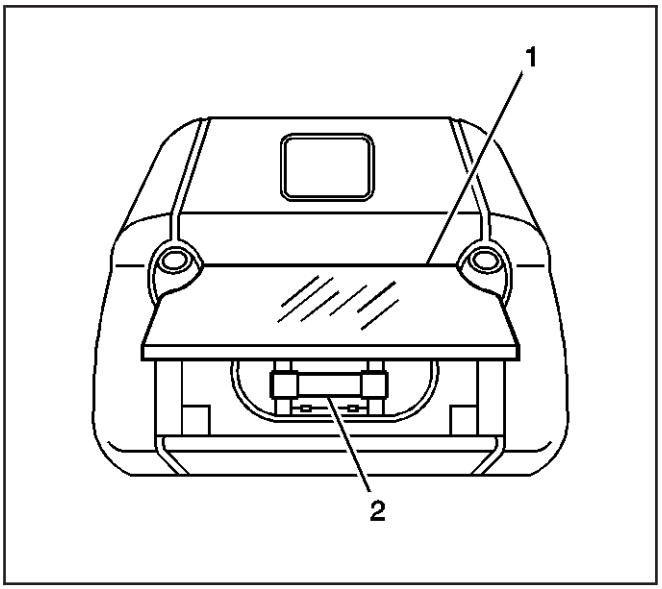


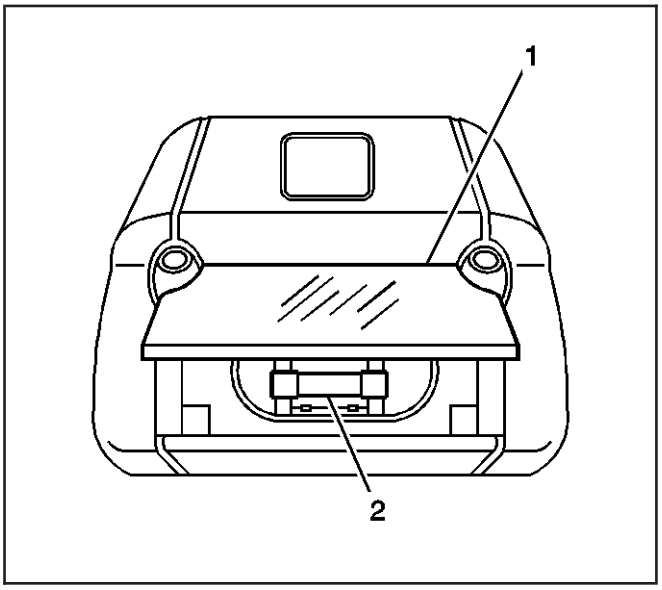
799011

Theft Deterrent Intrusion Sensor Replacement

SIE-ID = 813408 Owner = arusse01 LMD = 31-jul-2001 LMB = arusse01

Removal Procedure

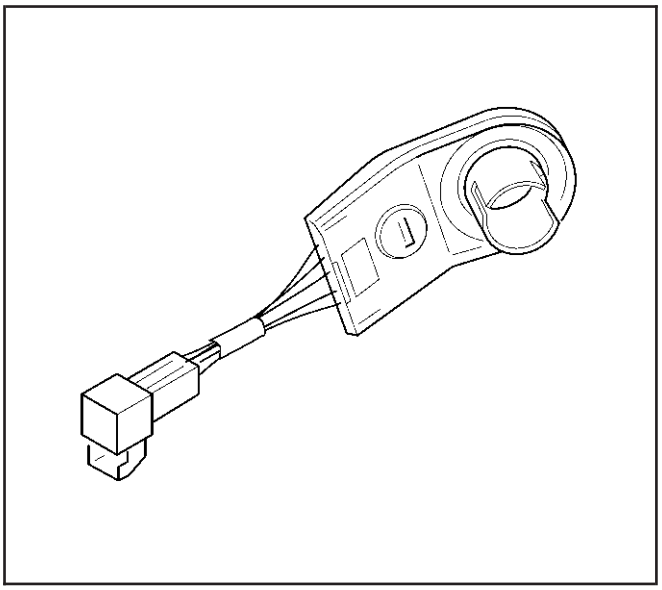
1. Remove the rear dome lamp lens (1).
2. Remove the dome lamp assembly.
3. Remove the intrusion sensor from the dome lamp trim cover.
4. Release the tabs securing the intrusion sensor to the dome lamp assembly.



799011

Installation Procedure

1. Install the intrusion sensor in the dome lamp assembly.
2. Install the dolmans trim cover.
3. Install the dome lamp lens (1).



884916

Theft Deterrent Control Module Replacement

SIE-ID = 793817 Owner = dporte01 LMD = 26-jul-2002 LMB = dporte01

Removal Procedure

Caution: Refer to SIR Caution on page P-5 in Cautions and Notices.

1. Disable the inflatable restraint steering wheel module. Refer to *SIR Disabling and Enabling Zone 3 on page 9-58* in SIR.
2. Remove the upper and lower trim covers. Refer to *Steering Column Trim Covers Replacement on page 2-25* in Steering Wheel and Column.
3. Remove the lock cylinder. Refer to *Ignition Lock Cylinder Replacement on page 2-29* in Steering Wheel and Column.
4. Disconnect the connector from the theft deterrent control module.

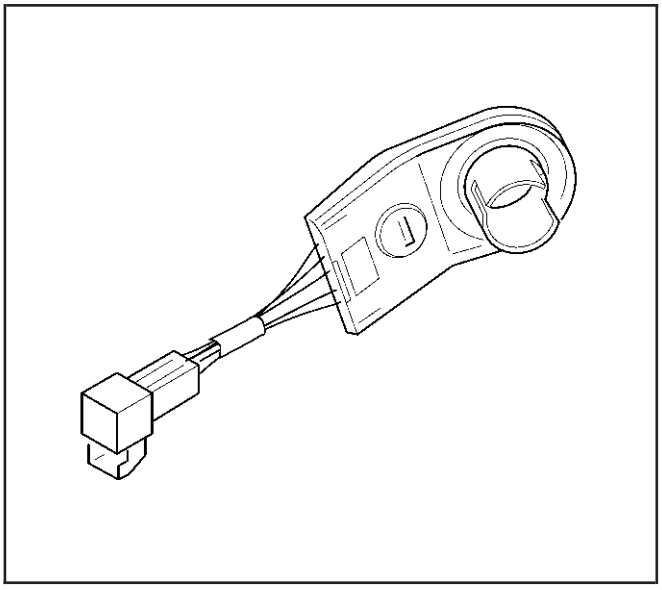
5. If necessary, disconnect the connector from the ignition lock cylinder case.
6. Remove the theft deterrent control module from ignition lock cylinder case assembly.

Installation Procedure

1. Install the theft deterrent control module onto the ignition lock cylinder case assembly.

Caution: Refer to SIR Inflator Module Coil Caution on page P-5 in Cautions and Notices.

2. Connect the connector to the theft deterrent control module.
3. If necessary, connect the connector to the ignition lock cylinder case.
4. Install the lock cylinder. Refer to *Ignition Lock Cylinder Replacement on page 2-29* in Steering Wheel and Column.
5. Install the upper and lower trim covers. Refer to *Steering Column Trim Covers Replacement on page 2-25* in Steering Wheel and Column.
6. Enable the inflatable restraint steering wheel module. Refer to *SIR Disabling and Enabling Zone 3 on page 9-58* in SIR.
7. Program the theft deterrent system. Refer to *Programming Theft Deterrent System Components on page 11-48*.



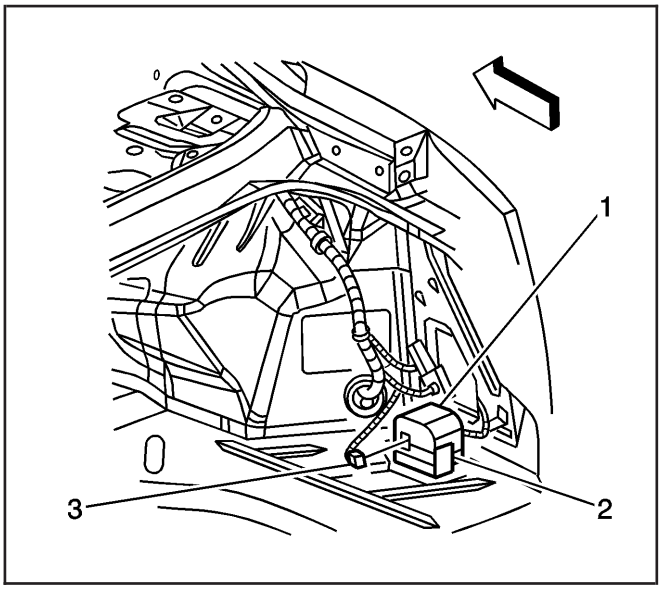
884916

Theft Deterrent Alarm Replacement

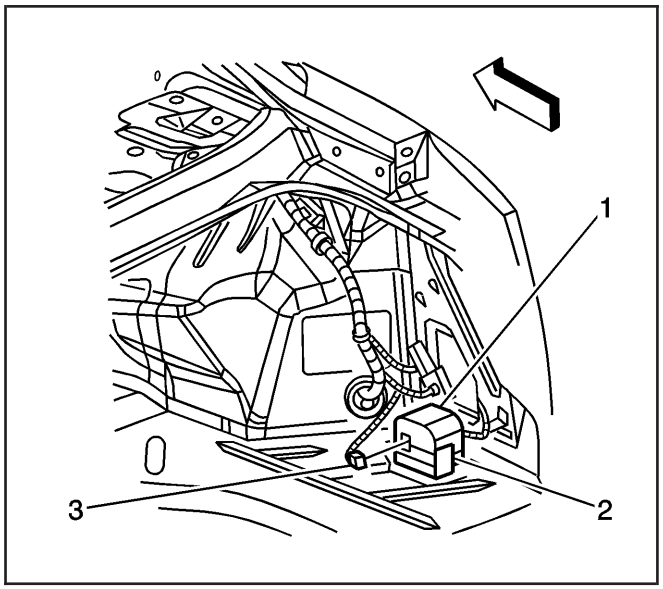
SIE-ID = 899946 Owner = dfrost01 LMD = 19-jul-2002 LMB = dfrost01

Removal Procedure

1. Remove the right rear compartment trim. Refer to *Compartment Trim Panel Replacement - Rear on page 8-14* in Body Rear End.
2. Remove the nuts securing the theft deterrent alarm (1) to the vehicle body.
3. Disconnect the electrical connector (3) from the alarm.
4. Remove the alarm from the vehicle.



899939



899939

Installation procedure

1. Reconnect the electrical connector (3) to the alarm.

Notice: Refer to *Fastener Notice on page P-7* in Cautions and Notices.

2. Install the alarm onto the vehicle.

   Tighten

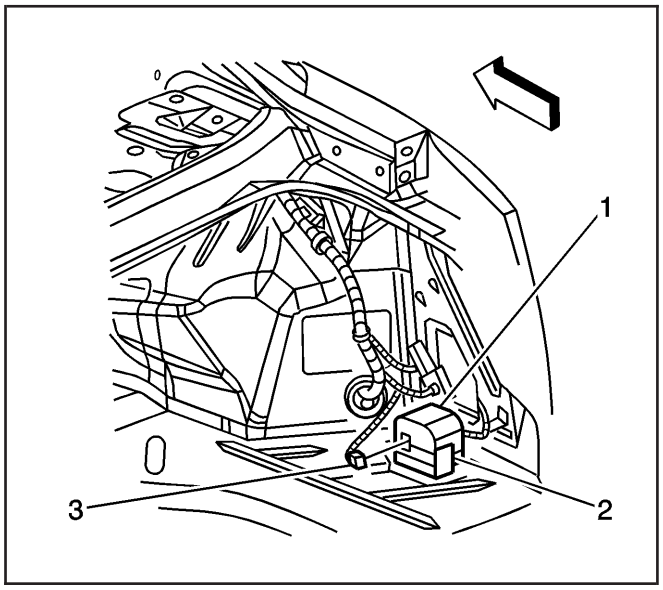
   Tighten the nuts to 9 N·m (80 lb in).
3. Install the rear compartment trim. Refer to *Compartment Trim Panel Replacement - Rear on page 8-14* in Body Rear End.

Theft Deterrent Inclination Sensor Replacement

SIE-ID = 900445 Owner = dfrost01 LMD = 19-jul-2002 LMB = dfrost01

Removal Procedure

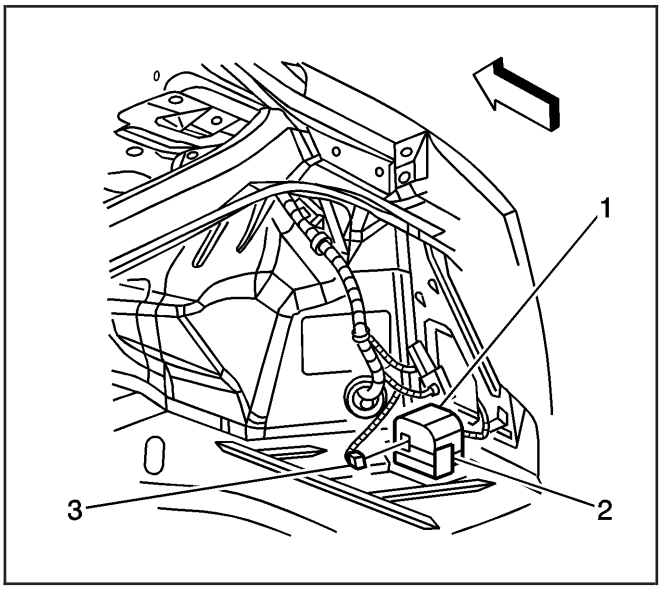
1. Remove the right rear compartment trim. Refer to *Compartment Trim Panel Replacement - Rear on page 8-14* in Body Rear End.
2. Remove the theft deterrent inclination sensor (2) from the theft deterrent alarm (1)
3. Disconnect the electrical connector from the sensor.
4. Remove the sensor from the vehicle.



899939

Installation procedure

1. Reconnect the electrical connector to the sensor.
2. Install the inclination sensor (2) onto the theft deterrent alarm (1).
3. Install the rear compartment trim. Refer to *Compartment Trim Panel Replacement - Rear on page 8-14* in Body Rear End.



899939

Replacing Keys

SIE-ID = 672474 Owner = mgastm01 LMD = 25-apr-2003 LMB = bdrend01

When the correct number of learned master keys are not available to perform adding keys procedure the 10 minute re-learn procedure or 30 minute re-learn procedure must be performed. Refer to *Programming Theft Deterrent System Components on page 11-48*.

Adding Keys (Domestic)

SIE-ID = 661044 Owner = mgastm01 LMD = 25-apr-2003 LMB = bdrend01

Important:

- You may add up to 10 additional master keys or valet keys using this procedure when a learned master key is available.
- This procedure adds keys only. The procedure does not erase previously learned keys.
- The keys to be learned must duplicate the mechanical cut of the current key.
- If more than one valet key is to be learned, immediately precede each valet key with a learned master key.

1. With a previously learned master key, turn ON the ignition, with the engine OFF.
2. Turn OFF the ignition and remove the key.
3. Within 10 seconds insert the key to be learned. Turn ON the ignition with the engine OFF. The vehicle has now learned the new key.

Adding Keys (Export)

SIE-ID = 763759 Owner = bdrend01 LMD = 25-apr-2003 LMB = bdrend01

Important:

- You may add up to 10 additional master keys or valet keys using this procedure if 2 learned master keys are available. If 2 learned master keys are not available the 10 minute relearn procedure must be performed. Refer to *Programming Theft Deterrent System Components on page 11-48*.
- If more than one valet key is to be learned, immediately precede each valet key by 2 learned master keys.
- This procedure adds keys only. The procedure does not erase previously learned keys.
- The keys to be learned must duplicate the mechanical cut of the current key.

1. With a previously learned master key, turn ON the ignition with the engine OFF.
2. Turn OFF the ignition and remove the key.
3. Within 10 seconds insert a second previously learned master key. Turn ON the ignition with the engine OFF.
4. Turn OFF the ignition and remove the key.
5. Within 10 seconds insert the key to be learned. Turn ON the ignition with the engine OFF. The vehicle has now learned the new key.

Programming Theft Deterrent System Components

SIE-ID = 879088 Owner = bdrend01 LMD = 17-jun-2003 LMB = bdrend01

Important: When replacing a theft deterrent control module with a GM SPO Replacement Part, insure the procedure to setup a new theft deterrent control module is performed prior to the 10-minute relearn procedure or the 30-minute relearn procedure.

Set Up a New Theft Deterrent Control Module

Use this procedure only if replacing the theft deterrent control module with a GM SPO Replacement Part.

Tools Required

Scan tool

1. Connect a scan tool to the vehicle.
2. Turn ON the ignition, with the engine OFF.
3. With a scan tool, select Setup New VTD Module in the Vehicle Theft Deterrent, Special Functions data list.
4. Follow the scan tool on-screen instructions.

Important:

- When replacing a theft deterrent control module with an GM SPO Replacement Part, the theft deterrent control module will learn the keys immediately. However, the existing engine control module (ECM) must learn the fuel continue password of the replacement theft deterrent control module.
- When replacing an ECM with a GM SPO Replacement Part, the new ECM will learn the incoming fuel continue password of the theft deterrent control module immediately upon the next ignition switch from OFF to CRANK. A ECM which had been installed in another vehicle will have learned the fuel continue password of the other vehicle's theft deterrent control module. Perform either the 10-minute relearn procedure or the 30-minute relearn procedure to learn the fuel continue password of the current vehicle's theft deterrent control module.
- When performing either relearn procedure, all previously learned keys will be erased from the theft deterrent control module's memory.
- Additional keys may be learned after performing either the 10-minute relearn procedure or the 30-minute relearn procedure. Refer to *Adding Keys (Domestic) on page 11-48* or *Adding Keys (Export) on page 11-48*.
- Use only a master key when performing the first relearn procedure. If you use a valet key first, the theft deterrent control module will not allow additional keys to be learned.

10-Minute Relearn Procedure

Use this procedure after replacing any of the following components:

- The passkey III+ (PK3+) keys.
- The theft deterrent control module.
- The ECM, see Important above.

Tools Required

- Scan tool

- Techline Terminal with current Service Programing System (SPS) software

Important: When replacing either the passkey III+ (PK3+) keys, ECM or theft deterrent control module and the 10-minute relearn procedure is used, ensure that the appropriate calibration is selected for the replacement component on the calibration selection screen of the service programming system. The appropriate calibrations for specific VTD system components are described below.

- When replacing PK3+ keys and the 10-minute relearn procedure is used, the Vehicle Theft Deterrent Learn for Passkey III System Control Module calibration is required. This clears all previously learned keys from the theft deterrent control module and enables the theft deterrent control module to learn new PK3+ keys. For learning additional PK3+ keys, refer to *Adding Keys (Domestic) on page 11-48* or *Adding Keys (Export) on page 11-48*.
- When replacing an ECM that has previously learned another vehicles theft deterrent control modules fuel continue password and the 10-minute relearn procedure is used, the Vehicle Theft Deterrent Learn for Powertrain System Control Module calibration is required. This clears the previously learned fuel continue password in the ECM and enables the ECM to learn the next fuel continue password it receives.
- When replacing a theft deterrent control module and the 10-minute relearn procedure is used, the Vehicle Theft Deterrent Learn for Powertrain System Control Module calibration is required. This clears the previously learned fuel continue password in the ECM and enables the ECM to learn the next fuel continue password it receives.

Important: When replacing a theft deterrent control module with a GM SPO Replacement Part, insure the procedure to setup a new theft deterrent control module is performed prior to the 10-minute relearn procedure.

1. Connect a scan tool to the vehicle.
2. Turn ON the ignition, with the engine OFF.
3. Insure that all power consuming devices are turned OFF on the vehicle.
4. With a scan tool, select Request Info. under Service Programming System and follow the scan tool on-screen instructions.
5. Disconnect the scan tool from the vehicle and connect the scan tool to a Techline Terminal with the current Service Programming System (SPS) software.
6. On the Techline Terminal, select Service Programming System and follow the Techline Terminal on-screen instructions. Ensure the correct programming procedure is selected based on component being replaced or programmed. See Important above.
7. Disconnect the scan tool from the Techline Terminal and re-connect the scan tool to the vehicle.
8. With a master PK3+ key, turn ON the ignition with the engine OFF.
9. With a scan tool, select Program ECU under Service Programming System.
10. At this point the scan tool must remain connected for the duration of the 10-minute relearn procedure.

Important:

- The scan tool will initially display 12 Minutes. The first 2 minutes allow the scan tool to initialize the appropriate control module. The remaining 10 minutes is the relearn timer.
- On some vehicles the SECURITY telltale may be illuminated on steady for the duration of the 10-minute relearn procedure.

11. Observe the scan tool, after approximately 10 minutes the scan tool will display “Programming Successful, Turn OFF Ignition”. The vehicle is now ready to relearn the key information and/or the passwords on the next ignition switch transition from OFF to CRANK.
12. Turn OFF the ignition and wait 5 seconds.
13. With a master PK3+ key, start the vehicle. The theft deterrent control module has now learned the key transponder information or the ECM has now learned the fuel continue password.

Important: Perform this step ONLY on vehicles with EXPORT configured theft deterrent control modules.

14. Turn OFF the ignition and wait 15 seconds minimum.

Important: Perform this step ONLY on vehicles with EXPORT configured theft deterrent control modules.

15. With a second master PK3+ key, start the vehicle. The theft deterrent control module has now learned the second master PK3+ key transponder information.
16. If additional keys are required to be learned, refer to *Adding Keys (Domestic) on page 11-48* or *Adding Keys (Export) on page 11-48*.
17. With a scan tool, clear any DTCs.

30-Minute Relearn Procedure

Use this procedure after replacing any of the following components:

- The passkey III+ (PK3+) keys.
- The theft deterrent control module.
- The ECM, see important above.

Important:

- This procedure is not available on vehicles equipped with EXPORT configured theft deterrent control modules.
- When replacing a theft deterrent control module with a GM SPO Replacement Part, insure the procedure to setup a new theft deterrent control module is performed prior to the 30-minute relearn procedure.

1. With a master passkey III+ (PK3+) key, turn ON the ignition, with the engine OFF.

2. Observe the Security telltale, after approximately 10 minutes the telltale will turn off.
3. Turn OFF the ignition, and wait 5 seconds.
4. Repeat steps 1–3 two more times for a total of 3 cycles or 30 minutes.

Important: The vehicle learns the key transponder information and/or passwords on the ignition switch transition from OFF to CRANK. You must turn the ignition OFF before attempting to start the vehicle.

5. With a master PK3+ key, start the vehicle. The vehicle has now learned the key transponder information and the ECM has now learned the fuel continue password.
6. If additional keys are required to be learned, refer to *Adding Keys (Domestic) on page 11-48* or *Adding Keys (Export) on page 11-48*.
7. With a scan tool, clear any DTCs.

Description and Operation

Theft Systems Description and Operation

SIE-ID = 884372 Owner = bdrend01 LMD = 07-jan-2003 LMB = csharp01

The theft deterrent system on this vehicle is comprised of two separate systems, the vehicle theft deterrent (VTD) system and the content theft deterrent (CTD) system. The VTD system prevents drive away theft by keeping the vehicle from starting. The CTD system is the vehicle alarm system which discourages unauthorized entry into the vehicle. These systems are described and diagnosed separately within this section.

Theft System Indicators

SECURITY

The instrument panel cluster (IPC) illuminates the SECURITY indicator as determined by the vehicle theft deterrent (VTD) system and the content theft deterrent (CTD) system. The IPC receives a message from the theft deterrent control module or the rear integration module (RIM) via the serial data circuit requesting illumination.

- The VTD system requests the IPC to illuminate the indicator only when the ignition switch is ON. The VTD system uses the indicator as a malfunction indicator. For specific VTD condition that will illuminate the security indicator, refer to *Vehicle Theft Deterrent (VTD) Description and Operation on page 11-53*.
- The CTD system requests the IPC to illuminate the indicator only when the ignition switch is OFF. The CTD system uses the indicator in order to identify system status. For specific CTD condition that will illuminate the security indicator, refer to *Content Theft Deterrent (CTD) Description and Operation on page 11-51*.
- The IPC performs the displays test at the start of each ignition cycle. The indicator illuminates for approximately 3 seconds.

SERVICE THEFT SYSTEM

The radio illuminates the SERVICE THEFT SYSTEM message when the VTD system detects a failure. The radio receives a message from the theft deterrent control module via the serial data circuit requesting illumination.

STARTING DISABLED REMOVE KEY

The radio illuminates the STARTING DISABLED REMOVE KEY message when the VTD system has disabled the starting system. The radio receives a message from the theft deterrent control module via the serial data circuit requesting illumination.

THEFT ATTEMPTED

The radio illuminates the THEFT ATTEMPTED indicator when the CTD system has detected a theft attempt. The radio receives a message from the rear integration module (RIM) via the serial data circuit requesting illumination.

Keyless Entry System (w/AU0)

The keyless entry system functions interact with the content theft deterrent system but is diagnosed as a stand-alone system. Refer to *Keyless Entry System Description and Operation on page 11-12*

Radio with Theftlock

The theft deterrent system does not interact with radio theft lock equipped vehicles. Radio theft lock is diagnosed as a stand-alone system. Refer to *Radio/Audio System Description and Operation on page 11-66*

CTD/VTD Description and Operation

- For content theft Deterrent (CTD) information, refer to *Content Theft Deterrent (CTD) Description and Operation on page 11-51*
- For vehicle theft deterrent (VTD) information, refer to *Vehicle Theft Deterrent (VTD) Description and Operation on page 11-53*

Content Theft Deterrent (CTD) Description and Operation

SIE-ID = 763058 Owner = rgrave01 LMD = 04-mar-2002 LMB = rgrave01

The 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 any door is opened without being unlocked by using the key to unlock either of the front doors or the UNLOCK command from a keyless entry transmitter.
- Forced entry into the rear compartment.

The components of the system are:

- Dash integration Module (DIM)
- Door Lock Actuators
- Door Modules
- Front door lock cylinder disarm switches
- Instrument Panel Cluster (IPC)
- Rear Integration Module (RIM)
- Remote Function Actuators
- Rear compartment tamper switch

Arming the CTD System

Use the following procedure in order to arm the system:

1. Place the shift lever in park (P).
2. Turn OFF the ignition.
3. Open any door.

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

4. Lock the doors with any power door lock switch or the LOCK button on the transmitter. The system is in standby mode and will not start the arming timer until all doors are closed.
5. The system will arm approximately 30 seconds from the time that the last door is closed. This delay is shown by the SECURITY indicator ON STEADY. When the indicator transitions to OFF, the system is armed.

Locking The Vehicle Without Arming The CTD System

Locking the vehicle may be accomplished without arming the CTD system. Use of the manual door locks or using the key to lock the doors will lock the vehicle but will not arm the CTD system.

Disarming An Armed System/Silencing An Alarm

If system arming has been requested by the power door lock switch or the transmitter, it must be disarmed.

Important: Using the power door unlock switch or manually unlocking the doors does not disable the CTD arm mode. Also, disconnecting the battery or pulling fuses does not disable the arm mode, since the remote function actuator module stores the CTD mode status in memory.

- To disarm the CTD system in standby mode (SECURITY indicator on or flashing and door(s) open):
  - Press either power door unlock switch.
  - Use the key to unlock either front door.
  - Press the UNLOCK button on the transmitter.
  - Insert a valid Pass Key III key into the ignition and switch to run position.
- To disarm the CTD system in the armed mode:
  - Use the key to unlock either front door.
  - Press the UNLOCK button on the transmitter.
  - Insert a valid Pass Key III key into the ignition and switch to run position
- To disarm the CTD system when activated (alarming mode).
  - Use the key to unlock either front door.
  - Press the UNLOCK button on the transmitter.
  - Insert a valid Pass Key III key into the ignition and switch to run position.

Personalization

Refer to *Personalization Description and Operation on page 11-1* in Personalization.

CTD Circuit Description

The following is a description of each component used in the CTD system:

Door Lock Actuators

The CTD system uses the door jamb switches in the door lock assembly as one method to activate the alarm. The door modules monitor the door jamb switches. If the rear integration module (RIM) receives a class 2 message from a door module that a door is open and the CTD system is armed, the RIM activates the alarm.

Door Lock Cylinder Switch

The front door lock cylinders are equipped with switches in order to disarm the CTD system. When a lock cylinder is turned to the unlock position the switch grounds the disarm input to the door module.

Rear Integration Module (RIM)

The CTD system is an internal function of the Rear Integration Module (RIM) which utilizes class 2 serial data and various switch input information to perform CTD functions. When the RIM detects an unauthorized entry, the RIM commands the Dash Integration Module (DIM) to activate the horns and exterior lamps via the class 2 serial data line. The RIM has five basic modes (disarmed, standby, delayed, armed, and alarm) for operating the CTD system. The different modes are described below.

1. The RIM has the CTD system in a disarmed mode until the following conditions are detected:
   - Ignition key turned to the OFF position
   - Any door open
   - Doors locked by either the power door lock switch or the LOCK button on the transmitter
2. The RIM enters the standby mode when the above conditions are detected. In standby mode the RIM commands the instrument cluster to illuminate the SECURITY indicator via the class 2 serial data line. (If all the doors are closed and the LOCK button on the transmitter is used, the RIM enters the delayed mode.
3. When the last door is closed, the RIM enters the delayed mode for 30 seconds. In delayed mode the RIM commands the instrument cluster to illuminate the SECURITY indicator via the class 2 serial data line.
4. After 30 seconds, the RIM enters the armed mode. In armed mode the RIM commands the instrument cluster to turn off the SECURITY indicator via the class 2 serial data line. Any forced entry activates the alarm mode.
5. When the RIM detects a forced entry, the RIM enters the alarm mode. The RIM commands the DIM to activate the horn and exterior lamps for 30 seconds, via a class 2 message. This is followed by a three minute time-out with the horn no longer active. If no new intrusions are detected after the time-out, the horn is not active. The system must be disarmed or the intrusion condition removed after the time-out for the system to exit alarm mode.

Remote Function Actuator (RFA) Module

The Remote Keyless Entry (RKE) system is an internal function of the Remote Function Actuator (RFA) Module. The RKE system can arm and disarm the CTD system. When the RKE module receives a door lock or unlock signal from the

transmitter, the RKE module sends a class 2 message to the RIM in order to perform the appropriate arm/disarm functions.

Rear Compartment Tamper Switch

The rear compartment lid is equipped with a lock cylinder tamper switch. Any forced movement of the lock cylinder activates the tamper switch. Both or either of the following actions activate the lock cylinder tamper switch:

- Rotation caused by forced entry
- In and out movement of the lock cylinder caused by forced entry

Important: The CTD system can be armed with the windows or sunroof open.

Inputs

The RIM monitors the following inputs:

- Driver and passenger door jamb switches, class 2 message from the Driver Door Module
- Driver and passenger power door lock/unlock switches, class 2 message from the Driver Door Module
- Driver door lock cylinder switch, class 2 message from the Driver Door Module
- Transmitter LOCK/UNLOCK buttons, class 2 message from the Remote Function Actuator (RFA) Module
- Rear compartment tamper switch

Outputs

The RIM commands the DIM to control the following via a class 2 message:

- The horn relay
- The exterior lights

Vehicle Theft Deterrent (VTD) Description and Operation

SIE-ID = 763254 Owner = bdrend01 LMD = 30-apr-2002 LMB = bdrend01

The vehicle theft deterrent (VTD) system functions are provided by the theft deterrent control module. When an ignition key is inserted into the ignition lock cylinder and the ignition is switched ON, the transponder embedded in the head of the key is energized by the exciter coils surrounding the ignition lock cylinder. The energized transponder transmits a signal that contains its unique value, which is received by the theft deterrent control module. The theft deterrent control module then compares this value to a value stored in memory, learned key code. If the value is correct the theft deterrent control module sends a random generated number to the transponder, this is called a challenge. Both the transponder and the theft deterrent control module perform a calculation on the challenge, if the calculations match the theft deterrent control module sends the fuel continue password via the serial data circuit to the Engine control module (ECM). If either the transponders unique value or the calculation to the challenge is incorrect the theft deterrent control module will send the fuel disable password to the ECM via the serial data circuit. The components of the VTD system are as follows:

- Theft deterrent control module
- Engine control module (ECM)
- Ignition key (Transponder)
- Ignition lock cylinder
- Security indicator

Theft Deterrent Control Module

Vehicles with steering column mounted ignition switches have the exciter integral with the theft deterrent control module which is located within the steering column. Vehicles with instrument panel mounted ignition switches have exciter modules separate from the theft deterrent control module with the vehicle wiring harness connecting the two. The theft deterrent control module for vehicles with instrument panel mounted ignition switches is located within the instrument panel. The theft deterrent control module can learn up to ten keys (transponder values).

The theft deterrent control module uses the following inputs, battery voltage, ignition switched voltage and ground circuit. The theft deterrent control module uses the following outputs, password exchange with the ECM, fuel continue/disable via the serial data circuit.

When an ignition key is inserted into the ignition lock cylinder and the ignition is switched ON, the transponder embedded in the head of the key is energized by the exciter coils surrounding the ignition lock cylinder. The energized transponder transmits a signal that contains its unique value, which is received by the theft deterrent control module. The theft deterrent control module then compares this value to a value stored in memory, learned key code. If the value is correct the theft deterrent control module sends a random generated number to the transponder, this is called a challenge. Both the transponder and the theft deterrent control module perform a calculation on the challenge. The theft deterrent control module then performs one of the following functions:

- If both the transponder value and the calculation to the challenge are correct, the theft deterrent control module will send the fuel continue password to the ECM via the serial data circuit.
- If either the transponders unique value or the calculation to the challenge is incorrect the theft deterrent control module will send the fuel disable password to the ECM via the serial data circuit.
- If the theft deterrent control module is unable to measure the ignition key transponder value for one second due to a damaged or missing pellet or a damaged exciter, the theft deterrent control module will send the fuel disable password to the ECM via the serial data circuit.

Important: On some vehicles, If the VTD system is unable to read the ignition key transponder value after the vehicle has started, the VTD system will consider

itself malfunctioning. The VTD system will enter a fail enable state and will command the security indicator to illuminate. When the VTD system is in a fail enable state the vehicle will NOT stall or stop running. If the VTD system is in a fail enable state when the ignition is switched OFF, the VTD system will remain fail enable until it is able to read a learned ignition key transponder value. When the VTD system is in a fail enable state the VTD system is NOT active and the vehicle will start. This feature is NOT available on all GM vehicle lines.

Module Substitution Deterrence w/UA2

Module Substitution Deterrence is on some EXPORT vehicles and is an internal function of the theft deterrent control module. Module substitution deterrence will disable starting of the vehicle when a loss of battery power has been restored. This can be do to, the vehicles battery becoming discharged or the battery power being removed from the VTD system. The theft deterrent control module performs one of the following functions:

Important: If the ignition is cycled OFF before the VIN Timer has timed out, on the next ignition cycle ON the timer will begin at the original programmed time.

- After a loss of battery power has been restored the theft deterrent control module will perform a check on the stored vehicle identification number (VIN). If the VIN is CORRECT, the theft deterrent control module will run the VIN Timer for a programmable length of time, typically 10 minutes. If there is a loss of battery power and it is necessary to jump start the vehicle, refer to *Jump Starting in Case of Emergency on page 6-49* Before attempting to start the vehicle the ignition must be in the ON position for the duration of the VIN Timer, the security indicator will be on steady. After the VIN Timer has timed out, the security indicator will turn OFF. The vehicle can now be started.
- After a loss of battery power has been restored the theft deterrent control module will perform a check on the stored vehicle identification number (VIN). If the VIN is INCORRECT, the theft deterrent control module will send the fuel disable password to the ECM via the serial data circuit. The VTD system considers this to be a tamper and will not allow the vehicle to start. The VTD system will command the security indicator to flash.

Engine Control Module (ECM)

The ECM verifies that the password received from the theft deterrent control module via the serial data circuit is correct. The ECM can learn only one fuel continue password. If the fuel continue password is correct, the ECM enables the starting and fuel delivery systems.

The ECM disables the starting and fuel delivery systems if any of the following conditions occur:

- The fuel continue password is incorrect.
- The fuel disable password is sent by the theft deterrent control module.
- No passwords are received – there is no communication with the theft deterrent control module.

Important: On some vehicles, if the ECM is unable to communicate with the VTD system after the vehicle has started, the ECM will consider the VTD system to be malfunctioning. The ECM will enter a fail enable state and will command the security indicator to illuminate. When the ECM is in a fail enable state the vehicle will NOT stall or stop running. If the ECM is in a fail enable state when the ignition is switched OFF, the ECM will remain fail enable until communications with the VTD system has been restored. When the ECM is in a fail enable state the VTD system is NOT active and the vehicle will start. This feature is NOT available on all GM vehicle lines.

The Ignition Key (Transponder)

The ignition key for passkey III+ (PK3+) equipped vehicles is a typical looking ignition key with a transponder located in the plastic head of the key. The transponder value is fixed and unable to be changed. The VTD system uses the ignition key transponder value to determine if a valid ignition key is being used to start the vehicle. There are approximately three trillion possible transponder values. There are no visible electrical contacts. The keys may be identified by the letters PK3+ stamped into the steel shank of the key. VTD systems use the following types of ignition keys:

Master Keys

Master keys have a black plastic head for full access operation of the vehicle. Master keys may perform the following functions:

- Start the vehicle.
- Lock/unlock all of the door locks.
- Lock/unlock all of the storage compartments.

Valet Keys

Important: Valet keys are NOT standard equipment on all GM vehicle lines.

Valet keys have a gray plastic head and are for restricted operation of the vehicle. Valet keys may perform the following functions:

- Start the vehicle.
- Lock/unlock all of the door locks.

Ignition Lock Cylinder

The ignition lock cylinder performs all of the functions of a lock cylinder on a non passkey III+ equipped vehicle. The ignition lock cylinder for vehicles with PK3+ may be located on the steering column or on the instrument panel. In either location the exciter coils surround the ignition lock cylinder such that they are very close to the head of the key which contains the transponder pellet.

If an ignition lock cylinder is replaced, the new ignition lock cylinder must be coded to match the mechanical coding of the PK3+ keys. When replacing an

ignition lock cylinder, and new PK3+ keys are required, the new keys must be learned by the theft deterrent control module. refer to *Programming Theft Deterrent System Components on page 11-48*.

Security Indicator Operation

The theft deterrent control module can command the instrument cluster to illuminate the security indicator only when the ignition key is in the ON position. If the ECM loses communication with the theft deterrent control module, the instrument cluster will also detect the loss of communication and will illuminate the security indicator. The security indicator can indicate both malfunctions, Indicator on steady and tamper, Indicator flashing. A flashing indicator indicates unauthorized operation. Under the following conditions the security indicator may be commanded to illuminate or flash.

Security Indicator Stays Illuminated and Engine Starts

If the theft deterrent control module was unable to measure the ignition key transponder value or the ECM lost communication with the VTD system while the engine was last running, the indicator will remain illuminated during subsequent ignition cycles. This is to remind the driver that the VTD system will not be functioning until the problem is corrected.

Security Indicator Illuminates when Engine is Running

If the theft deterrent control module is unable to measure the ignition key transponder value or the ECM loses communication with the theft deterrent control module while the engine is running, the security indicator will be illuminated.

Security Indicator Illuminated and Engine Does Not Start

If the theft deterrent control module was unable to measure the ignition key transponder value, the theft deterrent control modules VIN Check Timer is active, the ECM has detected a problem with the VTD system or the VTD system is in Learn Mode. The security indicator will be illuminated

Security Indicator Flashes and Engine Does Not Start

The theft deterrent control module has measured an incorrect transponder value, the calculation to the challenge is incorrect or the ECM has lost communication with the theft deterrent control module. The VTD system considers this a tamper condition. The security indicator will flash.