

Collision Warning and Collision Avoidance System

Diagnostic Trouble Code (DTC) Chart

Diagnostics in this manual assume a certain skill level and knowledge of Ford-specific diagnostic practices.
REFER to: Diagnostic Methods (100-00 General Information, Description and Operation).

Diagnostic Trouble Code Chart

Module	DTC	Description	Action <i>New: hover over Pinpoint Test links to show title</i>
HUD	U0104:00	Lost Communication With Cruise Control Module: No Sub Type Information	GO to Pinpoint Test C
HUD	U0146:00	Lost Communication With Gateway "A": No Sub Type Information	GO to Pinpoint Test D
HUD	U0405:68	Invalid Data Received From Cruise Control Module: Event Information	GO to Pinpoint Test C
HUD	U0447:68	Invalid Data Received From Gateway "A": Event Information	GO to Pinpoint Test D
HUD	U210A:16	Temperature Sensor: Circuit Voltage Below Threshold	GO to Pinpoint Test E
HUD	U210A:17	Temperature Sensor: Circuit Voltage Above Threshold	GO to Pinpoint Test E
HUD	U3000:41	Control Module: General Checksum Failure	GO to Pinpoint Test F
HUD	U3003:16	Battery Voltage: Circuit Voltage Below Threshold	GO to Pinpoint Test G
HUD	U3003:1C	Battery Voltage: Circuit Voltage Out of Range	GO to Pinpoint Test H

Symptom Chart Forward Collision Warning With HUD

Diagnostics in this manual assume a certain skill level and knowledge of Ford-specific diagnostic practices.
REFER to: Diagnostic Methods (100-00 General Information, Description and Operation).

Symptom Chart

Condition	Possible Sources	Actions
Module does not respond to the diagnostic scan tool	Refer to the Pinpoint Test	REFER to: Communications Network (418-00 Module Communications Network, Diagnosis and Testing).
The forward collision warning system is inoperative	Refer to the Pinpoint Test	GO to Pinpoint Test A
The HUD module is inoperative	Refer to the Pinpoint Test	GO to Pinpoint Test B

Condition	Possible Sources	Actions
COLLISION WARN NOT AVAILABLE SENSOR BLOCKED SEE MANUAL message in the IPC message center	Refer to the Pinpoint Test	REFER to: Instrumentation, Message Center and Warning Chimes (413-01 Instrumentation, Message Center and Warning Chimes, Diagnosis and Testing).
The forward collision warning system cannot be deactivated	Refer to the Pinpoint Test	GO to Pinpoint Test A
Too many forward collision warning events occur	Refer to the Pinpoint Test	GO to Pinpoint Test A

Symptom Chart: Forward Collision Warning Without HUD

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

REFER to: Diagnostic Methods (100-00 General Information, Description and Operation).

Symptom Chart

Condition	Possible Sources	Actions
The forward collision warning system is inoperative	Refer to the Pinpoint Test	REFER to: Instrumentation, Message Center and Warning Chimes (413-01 Instrumentation, Message Center and Warning Chimes, Diagnosis and Testing).
PRE-COLLISION ASSIST NOT AVAILABLE SENSOR BLOCKED SEE MANUAL message in the IPC message center	Refer to the Pinpoint Test	REFER to: Instrumentation, Message Center and Warning Chimes (413-01 Instrumentation, Message Center and Warning Chimes, Diagnosis and Testing).
FRONT CAMERA LOW VISIBILITY CLEAN SCREEN or FRONT CAMERA MALFUNCTION SERVICE REQUIRED message in the IPC message center	Refer to the Pinpoint Test	REFER to: Lane Keeping System (419-07 Lane Keeping System, Diagnosis and Testing).

Pinpoint Tests

☐ [PINPOINT TEST A : THE FORWARD COLLISION WARNING SYSTEM IS INOPERATIVE](#)

Refer to Wiring Diagrams Cell [31](#) for schematic and connector information.

Normal Operation and Fault Conditions

If the forward collision warning system cannot be deactivated or too many forward collision warning events occur, a MyKey® restricted key may be use. With an administration key, verify if the MyKey® maximum speed limiter is turned on or CHECK the forward collision warning sensitivity setting in the message center menu. For additional information, refer to the Owner's Literature.

Possible Sources

- Wiring, terminals or connectors
- CCM
- HUD module
- IPC

A1 VERIFY THE CCM (CRUISE CONTROL MODULE) AND HUD (HEAD UP DISPLAY) MODULE PASS THE NETWORK TEST

- Ignition ON.
- Connect the diagnostic tool.
- Using a diagnostic scan tool, perform the network test.

Do both the CCM and the HUD module pass the network test?

Yes	GO to A2
No	REFER to: Communications Network (418-00 Module Communications Network, Diagnosis and Testing).

A2 CHECK THE DIAGNOSTIC TROUBLE CODES (DTCs) FROM THE CONTINUOUS AND ON-DEMAND HUD (HEAD UP DISPLAY) MODULE SELF-TESTS

- Using a diagnostic scan tool, perform the HUD module self-test.

Are any HUD module DTCs recorded?

Yes	REFER to DTC Charts.
No	GO to A3

A3 CHECK THE CCM (CRUISE CONTROL MODULE) DTCs

- Using a diagnostic scan tool, perform the CCM self-test.

Are any CCM DTCs recorded?

Yes	REFER to: Cruise Control (419-03B Cruise Control - Vehicles With: Adaptive Cruise Control, Diagnosis and Testing).
No	GO to A4

A4 CHECK THE MESSAGE CENTER FOR CORRECT OPERATION

- Check the IPC message center for correct operation.

Does the message center operate correctly?

Yes	GO to A5
No	REFER to: Instrumentation, Message Center and Warning Chimes (413-01 Instrumentation, Message Center and Warning Chimes, Diagnosis and Testing).

A5 CHECK FOR CORRECT HUD (HEAD UP DISPLAY) OPERATION

- Ignition OFF.
- Disconnect and inspect HUD module connectors.
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the HUD module connectors. Make sure they seat and latch correctly.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	CHECK OASIS for any applicable service articles: TSB, GSB, SSM or FSA. If a service article exists for this concern, DISCONTINUE this test and FOLLOW the service article instructions. If no service articles address this concern, INSTALL a new HUD module. REFER to: Head Up Display (HUD) Module (419-03C Collision Warning and Collision Avoidance System, Removal and Installation).
No	The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.

PINPOINT TEST B : THE HUD (HEAD UP DISPLAY) MODULE IS INOPERATIVE

Refer to Wiring Diagrams Cell [146](#) for schematic and connector information.

Normal Operation and Fault Conditions

REFER to: Collision Warning and Collision Avoidance System - System Operation and Component Description (419-03C Collision Warning and Collision Avoidance System, Description and Operation).

Possible Sources

- CCM
- HUD module

B1 CHECK FOR HUD (HEAD UP DISPLAY) MODULE LED (LIGHT EMITTING DIODE) PROVE OUT TEST

NOTE: Remove the vehicle from the extreme heat source or sunload condition prior to testing the vehicle.

- Ignition ON.
- Connect the diagnostic tool.
- Observe the HUD module Light Emitting Diodes (LEDs).

Do the HUD module LEDs illuminate?

Yes	The HUD module LEDs are operating correctly at this time. The concern may have been caused by extreme temperatures.
No	GO to B2

B2 CHECK THE COMMUNICATION NETWORK

- Using a diagnostic scan tool, perform the network test.

Does the HUD module pass the network test?

Yes	GO to B3
No	REFER to: Communications Network (418-00 Module Communications Network, Diagnosis and Testing).

B3 CHECK THE HUD (HEAD UP DISPLAY) DTCS

- Using a diagnostic scan tool, perform a HUD module self-test.

Are any DTCs recorded?

Yes	REFER to DTC Charts.
No	GO to B4

B4 CHECK THE CCM (CRUISE CONTROL MODULE) DTCS

- Using a diagnostic scan tool, perform a CCM self-test.

Are any DTCs recorded?

Yes	REFER to: Cruise Control (419-03B Cruise Control - Vehicles With: Adaptive Cruise Control, Diagnosis and Testing).
No	GO to B5

B5 CHECK FOR CORRECT HUD (HEAD UP DISPLAY) OPERATION

- Ignition OFF.
- Disconnect and inspect HUD module connectors.
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the HUD module connectors. Make sure they seat and latch correctly.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	CHECK OASIS for any applicable service articles: TSB, GSB, SSM or FSA. If a service article exists for this concern, DISCONTINUE this test and FOLLOW the service article instructions. If no service articles address this concern, INSTALL a new HUD module. REFER to: Head Up Display (HUD) Module (419-03C Collision Warning and Collision Avoidance System, Removal and Installation).
No	The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.

PINPOINT TEST C : U0104:00 OR U0405:68

Refer to Wiring Diagrams Cell [146](#) for schematic and connector information.

Normal Operation and Fault Conditions

REFER to: Communications Network - System Operation and Component Description (418-00 Module Communications Network, Description and Operation).

DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Condition
HUD U0104:00	Lost Communication With Cruise Control Module: No Sub Type Information	Sets in the HUD module if data messages received from the CCM over the HS-CAN2 are missing.
HUD U0405:68	Invalid Data Received From Cruise Control Module: Event Information	This DTC sets when the HUD module receives invalid network data from the CCM with a faulted signal data input.

Possible Sources

- CCM
- HUD module

C1 CHECK THE COMMUNICATION NETWORK

- Ignition ON.
- Connect the diagnostic tool.
- Using a diagnostic scan tool, perform the network test.

Does the CCM pass the network test?

Yes	GO to C2
No	REFER to: Communications Network (418-00 Module Communications Network, Diagnosis and Testing).

C2 RETRIEVE THE CCM (CRUISE CONTROL MODULE) DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, perform a CCM self-test.

Are any non-network DTCs present?

Yes	REFER to: Cruise Control (419-03B Cruise Control - Vehicles With: Adaptive Cruise Control, Diagnosis and Testing).
No	GO to C3

C3 RETRIEVE THE HUD (HEAD UP DISPLAY) DTCS

- Using a diagnostic scan tool, perform a HUD module self-test.

Are any non-network DTCs present?

Yes	DIAGNOSE all non-network DTCs. REFER to the DTC Chart.
No	GO to C4

C4 RECHECK THE HUD (HEAD UP DISPLAY) MODULE DTCS

- Using a diagnostic scan tool, clear the DTCs.
- Ignition OFF.
- Ignition ON.
- Wait 10 seconds.
- Using a diagnostic scan tool, retrieve the HUD module Continuous Memory Diagnostic Trouble Codes (CMDTCs).

Is DTC U0104:00 or U0405:68 still present?

Yes	GO to C5
No	The system is operating correctly at this time. The DTC may have been set due to high network traffic or an intermittent fault condition.

C5 CHECK FOR OTHER CAUSES OF COMMUNICATION NETWORK CONCERN

NOTE: If new modules were installed prior to the DTC being set, the module configuration can be incorrectly set during the Programable Module Installation (PMI) or the Programable Module Installation (PMI) may not have been carried out.

- Check the vehicle service history for recent service actions related to the CCM or HUD module.
 - verify correct replacement module was installed
 - HVBOM may be used to verify correct part fitment
 - verify the configuration of replacement module was correct
 - re-configure module using As-Built data if prior configuration is suspect
 - verify the module was not obtained from a like vehicle and installed into customer vehicle
 - return the swapped module to source vehicle and obtain a new replacement module
- Operate the system and determine if the observable symptom is still present.

Is the symptom still present?

Yes	GO to C6
No	The system is operating correctly at this time. The concern may have been due to incorrect parts replacement procedures or incorrect module configuration.

C6 CHECK FOR CORRECT HUD (HEAD UP DISPLAY) OPERATION

- Ignition OFF.
- Disconnect and inspect all HUD connectors.
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the HUD connectors. Make sure they seat and latch correctly.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	CHECK OASIS for any applicable service articles: TSB, GSB, SSM or FSA. If a service article exists for this concern, DISCONTINUE this test and FOLLOW the service article instructions. If no service articles address this concern, INSTALL a new HUD. REFER to: Head Up Display (HUD) Module (419-03C Collision Warning and Collision Avoidance System, Removal and Installation).
No	The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.

PINPOINT TEST D : U0146:00 OR U0447:68

Refer to Wiring Diagrams Cell [146](#) for schematic and connector information.

Normal Operation and Fault Conditions

REFER to: Communications Network - System Operation and Component Description (418-00 Module Communications Network, Description and Operation).

DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Condition
HUD U0146:00	Lost Communication With Serial Data Gateway "A": No Sub Type Information	Sets in the HUD module if data messages received from the GWM over the HS-CAN2 are missing.
HUD U0447:68	Invalid Data Received From Serial Data Gateway "A": Event Information	This DTC sets when the HUD module receives invalid network data from the GWM.

Possible Sources

- HUD module
- GWM

D1 CHECK THE COMMUNICATION NETWORK

- Ignition ON.
- Connect the diagnostic tool.
- Using a diagnostic scan tool, perform the network test.

Does the GWM pass the network test?

Yes	GO to D2
No	REFER to: Communications Network (418-00 Module Communications Network, Diagnosis and Testing).

D2 CHECK GWM (GATEWAY MODULE A) CONTINUOUS MEMORY DIAGNOSTIC TROUBLE CODES (CMDTCS)

- Using a diagnostic scan tool, retrieve GWM CMDTCS.

Are any GWM CMDTCS recorded?

Yes	REFER to: Communications Network (418-00 Module Communications Network, Diagnosis and Testing).
No	GO to D3

D3 PERFORM THE HUD (HEAD UP DISPLAY) MODULE SELF-TEST

- Using a diagnostic scan tool, perform a HUD module self-test.

Are any HUD module Diagnostic Trouble Codes (DTCs) recorded?

Yes	REFER to DTC Charts.
No	GO to D4

D4 RECHECK THE HUD (HEAD UP DISPLAY) MODULE DTCS

- Using a diagnostic scan tool, clear the DTCs.
- Ignition OFF.
- Ignition ON.
- Wait 10 seconds.
- Using a diagnostic scan tool, retrieve the HUD module CMDTCs.

Is DTC U0146:00 or U0447:68 still present?

Yes	GO to D5
No	The system is operating correctly at this time. The DTC may have been set due to high network traffic or an intermittent fault condition.

D5 CHECK FOR OTHER CAUSES OF COMMUNICATION NETWORK CONCERN

NOTE: If new modules were installed prior to the DTC being set, the module configuration can be incorrectly set during the Programmable Module Installation (PMI) or the Programmable Module Installation (PMI) may not have been carried out.

- Check the vehicle service history for recent service actions related to the GWM or HUD module.
 - verify correct replacement module was installed
 - HVBOM may be used to verify correct part fitment
 - verify the configuration of replacement module was correct
 - re-configure module using As-Built data if prior configuration is suspect
 - verify the module was not obtained from a like vehicle and installed into customer vehicle
 - return the swapped module to source vehicle and obtain a new replacement module
- Operate the system and determine if the observable symptom is still present.

Is the observable symptom still present?

Yes	GO to D6
No	The system is operating correctly at this time. The concern may have been due to incorrect parts replacement procedures or incorrect module configuration.

D6 CHECK FOR CORRECT GWM (GATEWAY MODULE A) OPERATION

- Ignition OFF.
- Disconnect and inspect all GWM connectors.
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the GWM connectors. Make sure they seat and latch correctly.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	CHECK OASIS for any applicable service articles: TSB, GSB, SSM or FSA. If a service article exists for this concern, DISCONTINUE this test and FOLLOW the service article instructions. If no service articles address this concern, INSTALL a new GWM. REFER to: Gateway Module A (GWM) (418-00 Module Communications Network, Removal and Installation).
No	The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.

PINPOINT TEST E : U210A:16 OR U210A:17

Refer to Wiring Diagrams Cell [146](#) for schematic and connector information.

Normal Operation and Fault Conditions

REFER to: Collision Warning and Collision Avoidance System - System Operation and Component Description (419-03C Collision Warning and Collision Avoidance System, Description and Operation).

DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Condition
HUD U210A:16	Temperature Sensor: Circuit Voltage Below Threshold	Sets in continuous memory in the HUD module when the internal temperature sensor circuit is below the lowest valid temperature value.
HUD U210A:17	Temperature Sensor: Circuit Voltage Above Threshold	Sets in continuous memory in the HUD module when the internal temperature sensor circuit is above the highest valid temperature value.

Possible Sources

- HUD module

E1 CHECK FOR HUD (HEAD UP DISPLAY) MODULE DIAGNOSTIC TROUBLE CODES (DTCS)

- Ignition ON.
- Connect the diagnostic tool.
- Using a diagnostic scan tool, clear the HUD module Continuous Memory Diagnostic Trouble Codes (CMDTCs).
- Ignition OFF.
- Ignition ON.
- Wait 10 seconds.
- Using a diagnostic scan tool retrieve the CMDTCs.

Is DTC U210A:16 or U210A:17 recorded?

Yes	GO to E2
No	The system is operating normally at this time. The DTC may have been set previously due to an internal intermittent fault with the temperature sensor circuit.

E2 CHECK FOR CORRECT HUD (HEAD UP DISPLAY) OPERATION

- Ignition OFF.
- Disconnect and inspect HUD module connectors.
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the HUD module connectors. Make sure they seat and latch correctly.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	CHECK OASIS for any applicable service articles: TSB, GSB, SSM or FSA. If a service article exists for this concern, DISCONTINUE this test and FOLLOW the service article instructions. If no service articles address this concern, INSTALL a new HUD module. REFER to: Head Up Display (HUD) Module (419-03C Collision Warning and Collision Avoidance System, Removal and Installation).
No	The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.

[PINPOINT TEST F : U3000:41](#)

Refer to Wiring Diagrams Cell [146](#) for schematic and connector information.

Normal Operation and Fault Conditions

REFER to: Collision Warning and Collision Avoidance System - System Operation and Component Description (419-03C Collision Warning and Collision Avoidance System, Description and Operation).

DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Condition
HUD U3000:41	Control Module: General Checksum Failure	The HUD module detects an internal fault.

Possible Sources

- HUD module

F1 CHECK FOR HUD (HEAD UP DISPLAY) MODULE DIAGNOSTIC TROUBLE CODES (DTCS)

- Ignition ON.
- Connect the diagnostic tool.
- Using a diagnostic scan tool, clear the HUD module Continuous Memory Diagnostic Trouble Codes (CMDTCs).
- Ignition OFF.
- Ignition ON.
- Wait 10 seconds.
- Using a diagnostic scan tool retrieve the CMDTCs.

Is DTC U3000:41 recorded?

Yes	GO to F2
No	The system is operating normally at this time. The DTC may have been set previously due to an internal intermittent fault with the temperature sensor circuit.

F2 CHECK FOR CORRECT HUD (HEAD UP DISPLAY) OPERATION

- Ignition OFF.
- Disconnect and inspect HUD module connectors.
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the HUD module connectors. Make sure they seat and latch correctly.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	CHECK OASIS for any applicable service articles: TSB, GSB, SSM or FSA. If a service article exists for this concern, DISCONTINUE this test and FOLLOW the service article instructions. If no service articles address this concern, INSTALL a new HUD module. REFER to: Head Up Display (HUD) Module (419-03C Collision Warning and Collision Avoidance System, Removal and Installation).
No	The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.

PINPOINT TEST G : U3003:16

Refer to Wiring Diagrams Cell [146](#) for schematic and connector information.

Normal Operation and Fault Conditions

REFER to: Collision Warning and Collision Avoidance System - System Operation and Component Description (419-03C Collision Warning and Collision Avoidance System, Description and Operation).

DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Condition
HUD U3003:16	Battery Voltage: Circuit Voltage Below Threshold	Set by the HUD module in continuous memory if the HUD module detects low battery voltage below 7 volts for more than 500 ms.

Possible Sources

- Wiring, terminals or connectors
- Battery
- Generator
- PCM
- HUD module

G1 CHECK THE HUD (HEAD UP DISPLAY) MODULE DIAGNOSTIC TROUBLE CODES (DTCS)

- Ignition ON.
- Connect the diagnostic tool.
- Using a diagnostic scan tool, clear the DTCs. Repeat the HUD module self-test.

Is DTC U3003:16 still present?

Yes	GO to G2
No	The system is operating correctly at this time. The DTC may have been set due to a previous low battery voltage condition.

G2 CHECK FOR CHARGING SYSTEM DTCS

- Using a diagnostic scan tool, perform the PCM KOEO self-test.

Are any charging system DTCs recorded?

Yes	Refer to the appropriate section in Group 414 for the procedure.
No	GO to G3

G3 CHECK THE BATTERY CONDITION AND STATE OF CHARGE

- Check the battery condition and verify the battery is fully charged.
REFER to: Battery (414-01 Battery, Mounting and Cables, Diagnosis and Testing).

Is the battery OK and fully charged?

Yes	GO to G4
No	REFER to: Battery (414-01 Battery, Mounting and Cables, Diagnosis and Testing).

G4 CHECK THE HUD (HEAD UP DISPLAY) MODULE VOLTAGE SUPPLY

- Ignition OFF.
- Disconnect HUD module [C2395](#) .
- Ignition ON.
- Measure and record the voltage at the battery.
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C2395-4		Ground
C2395-5		Ground

Is the voltage within 0.2 volt of the recorded battery voltage?

Yes	GO to G5
No	REPAIR the circuit.

G5 CHECK THE HUD (HEAD UP DISPLAY) MODULE GROUND CIRCUIT

- Measure:

Positive Lead	Measurement / Action	Negative Lead
C2395-4		C2395-1

Is the voltage within 0.2 volt of the recorded battery voltage?

Yes	GO to G6
No	REPAIR the circuit.

G6 CHECK FOR CORRECT HUD (HEAD UP DISPLAY) OPERATION

- Ignition OFF.
- Disconnect and inspect HUD module connectors.
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the HUD module connectors. Make sure they seat and latch correctly.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	CHECK OASIS for any applicable service articles: TSB, GSB, SSM or FSA. If a service article exists for this concern, DISCONTINUE this test and FOLLOW the service article instructions. If no service articles address this concern, INSTALL a new HUD module. REFER to: Head Up Display (HUD) Module (419-03C Collision Warning and Collision Avoidance System, Removal and Installation).
No	The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.

PINPOINT TEST H : U3003:1C

Refer to Wiring Diagrams Cell [146](#) for schematic and connector information.

Normal Operation and Fault Conditions

REFER to: Collision Warning and Collision Avoidance System - System Operation and Component Description (419-03C Collision Warning and Collision Avoidance System, Description and Operation).

DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Condition
HUD U3003:1C	Battery Voltage: Circuit Voltage Out Of Range	Sets in continuous memory if the HUD module detects battery voltage outside the valid range.

Possible Sources

- Wiring, terminals or connectors
- Battery
- Generator
- HUD module

NOTE: DTC U3003:1C may be stored in the module memory due to past battery charging or vehicle jump starting events.

H1 CHECK FOR BATTERY VOLTAGE DIAGNOSTIC TROUBLE CODES (DTCs) SET IN OTHER MODULES

- Ignition ON.
- Connect the diagnostic tool.
- Retrieve the Continuous Memory Diagnostic Trouble Codes (CMDTCs) from all modules.

Do any charging system DTCs set in more than one module?

Yes	Refer to the appropriate section in Group 414 for the procedure.
No	GO to H2

H2 CHECK THE BATTERY VOLTAGE

- Turn off all the interior and exterior lights and accessories.
- Start and run the engine at approximately 2,000 rpm for three minutes while monitoring the battery voltage.

Does the battery voltage rise to 15.5 volts or higher?

Yes	Refer to the appropriate section in Group 414 for the procedure.
No	GO to H3

H3 RECHECK FOR DTC (DIAGNOSTIC TROUBLE CODE) U3003:1C

- Ignition OFF.
- Ignition ON.
- Clear the HUD module CMDTCs.
- Using a diagnostic scan tool, perform the HUD module self-test.

Is DTC U3003:1C present?

Yes	GO to H4
No	The system is operating normally at this time. The DTC may have been set previously during battery charging or while jump starting the vehicle.

H4 CHECK FOR CORRECT HUD (HEAD UP DISPLAY) OPERATION

- Ignition OFF.
- Disconnect and inspect HUD module connectors.
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the HUD module connectors. Make sure they seat and latch correctly.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	CHECK OASIS for any applicable service articles: TSB, GSB, SSM or FSA. If a service article exists for this concern, DISCONTINUE this test and FOLLOW the service article instructions. If no service articles address this concern, INSTALL a new HUD module. REFER to: Head Up Display (HUD) Module (419-03C Collision Warning and Collision Avoidance System, Removal and Installation).
No	The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.