PRODEMAND

YMMS: 2014 Ford Explorer Base
Engine: 2.0L Eng
VIN:

Mar 8, 2021
License:
Odometer:

DTC U0401: Invalid Data Received From ECM/PCM A

Description

The PSCM will monitor the HS-CAN bus when the ignition has been on for more than 5 seconds, when the voltage to the PSCM is greater than 9 volts and when there are no DTCs present that are inhibiting PSCM operation.

- DTC U0401:00 (Invalid Data Received from ECM/PCM A: No Sub Type Information) - This DTC sets if the PSCM receives "fault" or "unknown" messages from the PCM instead of valid engine speed, valid gear lever position or valid drive wheel torque messages.

Possible Causes

- DTCs present in the PCM
- PCM HS-CAN bus concern

Diagnostic Aids

DTC U0401:00 indicates an engine speed or vehicle speed message concern. The module reporting this DTC is not the problem module. Do not install a new PSCM as part of the repair for PSCM DTC U0401:00. When this DTC is set steering assist will be reduced resulting in higher steering efforts during low speed maneuvers.
The presence of DTC U0401:00 will prevent the active park assist system (if equipped) and the lane keep assist system (if equipped) from activating. If set during an active park or lane keep assist event, the event is terminated and the assist system is deactivated. The driver may also experience the vehicle pulling to the left or right during acceleration.

Action

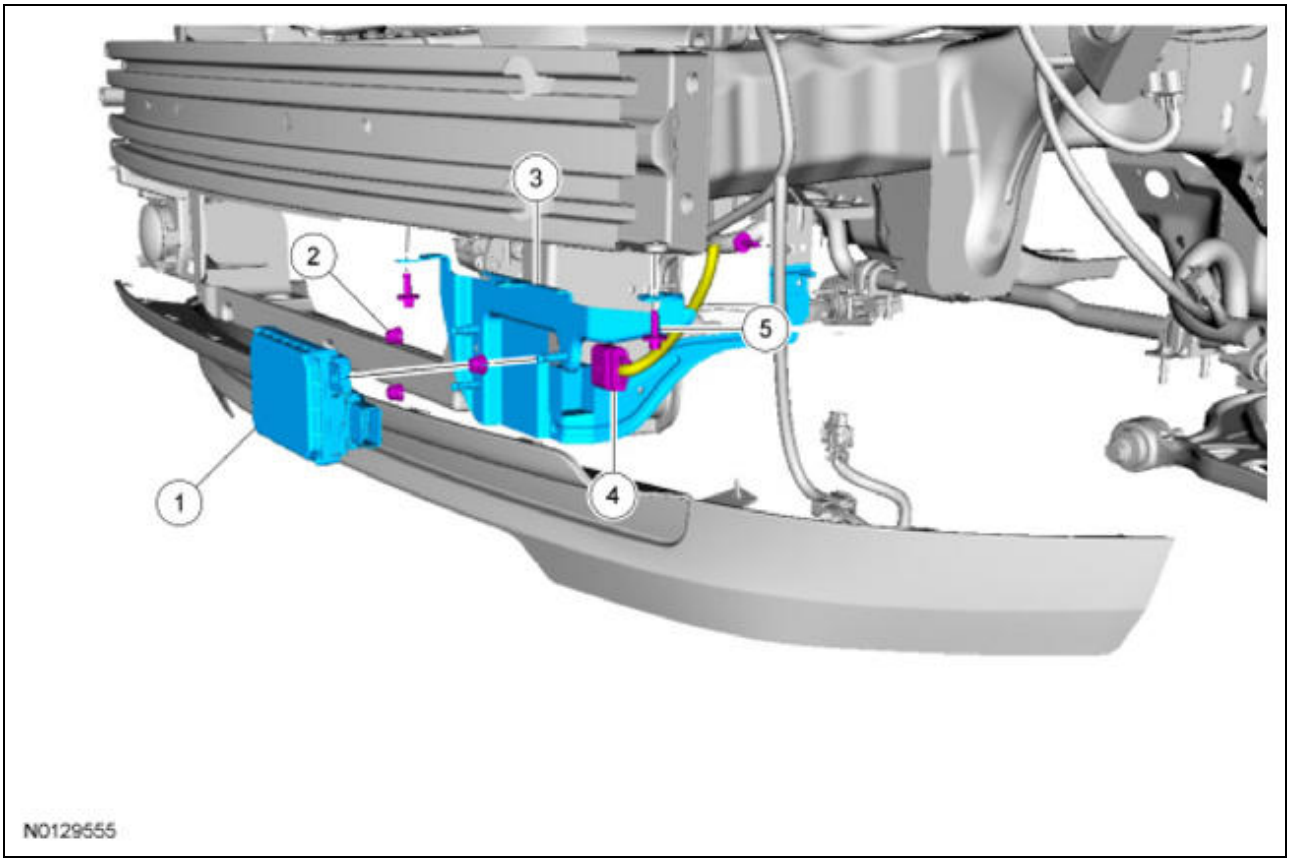
RETRIEVE and RECORD all PCM DTCs. REFER to the ENGINE CONTROLS - INTRODUCTION (EXCEPT DIESEL & HYBRID) (SECTION 0) to diagnose the engine speed or vehicle speed concern.

Cruise-Control Module (C-CM)

NOTE: *For information on Ford Color Coded Illustrations refer to COLOR-CODING - FORD .*

Exploded View

NOTE: *Front bumper cover is removed for clarity.*



Item	Part Number	Description
1	9E731	**C-CM**
2	W790214	**C-CM** ball socket grommets (3 required)
3	14C022	**C-CM** bracket
4	-	**C-CM** electrical connector
5	W710879	**C-CM** bracket bolts (3 required)

Removal

NOTE: *If installing a new **C-CM** , it is necessary to upload the module configuration information into the scan tool prior to removing the module. This information must be downloaded into the new module after installation.*

1. If installing a new **C-CM** , upload the module configuration information from the **C-CM** into the scan tool by following the scan tool on-screen instructions.
2. Remove the front bumper cover. Refer to BUMPER SYSTEM

3. Gently pry the **C-CM** away from the retaining studs.
    1. Disconnect the electrical connector.
4. If required, remove the 3 bolts and the **C-CM** bracket assembly.
5. Inspect the **C-CM** grommets for any damage and install new grommets as necessary.

Installation

1. If required, install the 3 bolts and the **C-CM** bracket assembly.
    1. Tighten the bolts to 8 Nm (71 lb-in).
2. **NOTE:** *If a plastic grommet breaks while the **C-CM** is being installed, a new grommet should be installed.*

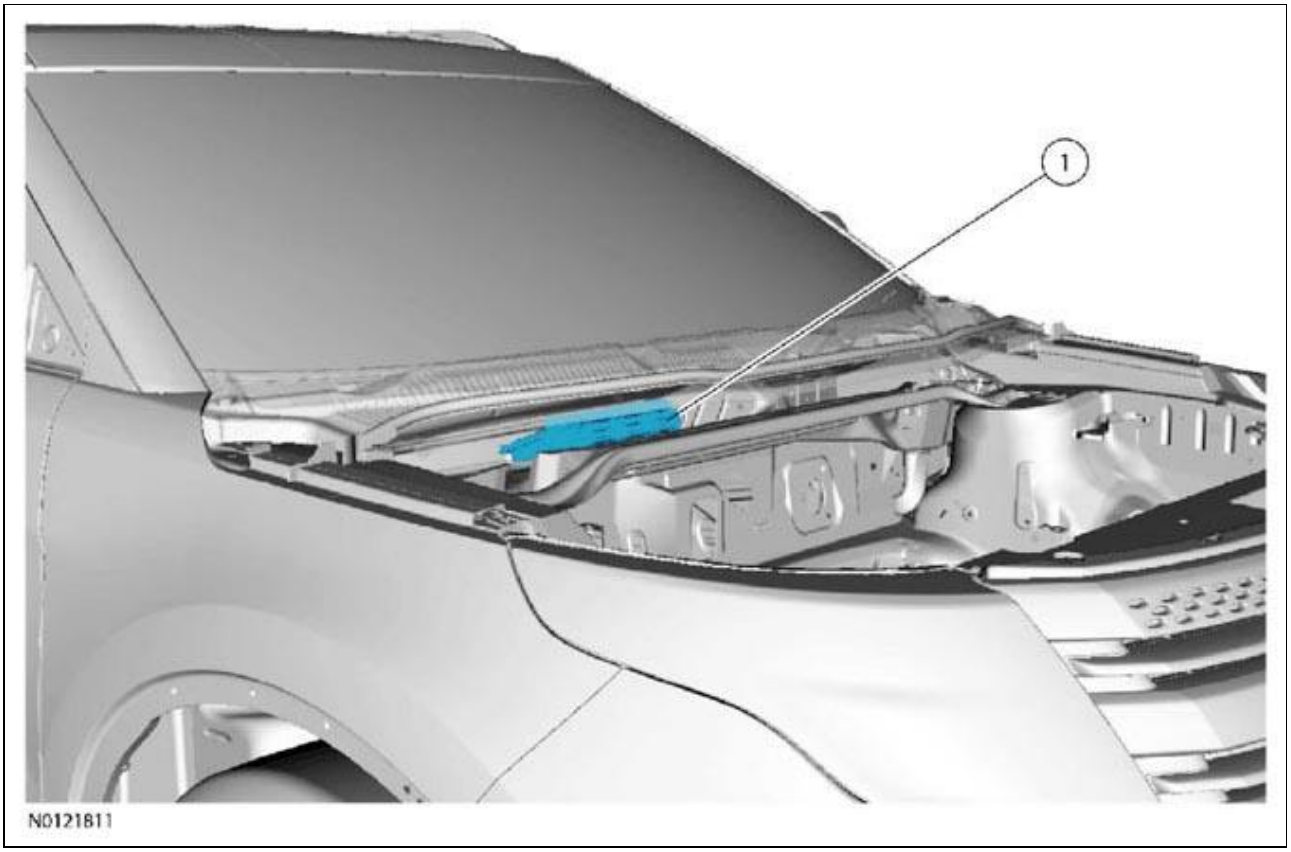
   Firmly apply pressure to the **C-CM** so that it seats completely in the grommets.
3. Once the **C-CM** is installed, pull the **C-CM** to confirm that all 3 ball studs are fully seated in the grommets.
    1. Connect the electrical connector.
4. Check the **C-CM** alignment. Refer to CRUISE CONTROL MODULE (C-CM) (WITH SENSOR) ADJUSTMENT.
5. If a new module is installed, download the module information from the scan tool to the new **C-CM** by following the scan tool on-screen instructions.
6. If a new module is installed, it must be reconfigured using **PMI** . Refer to MODULE CONFIGURATION SYSTEM .
7. Install the front bumper cover. Refer to BUMPER SYSTEM

Electronic Engine Controls [DESCRIPTION AND OPERATION]

Component Location

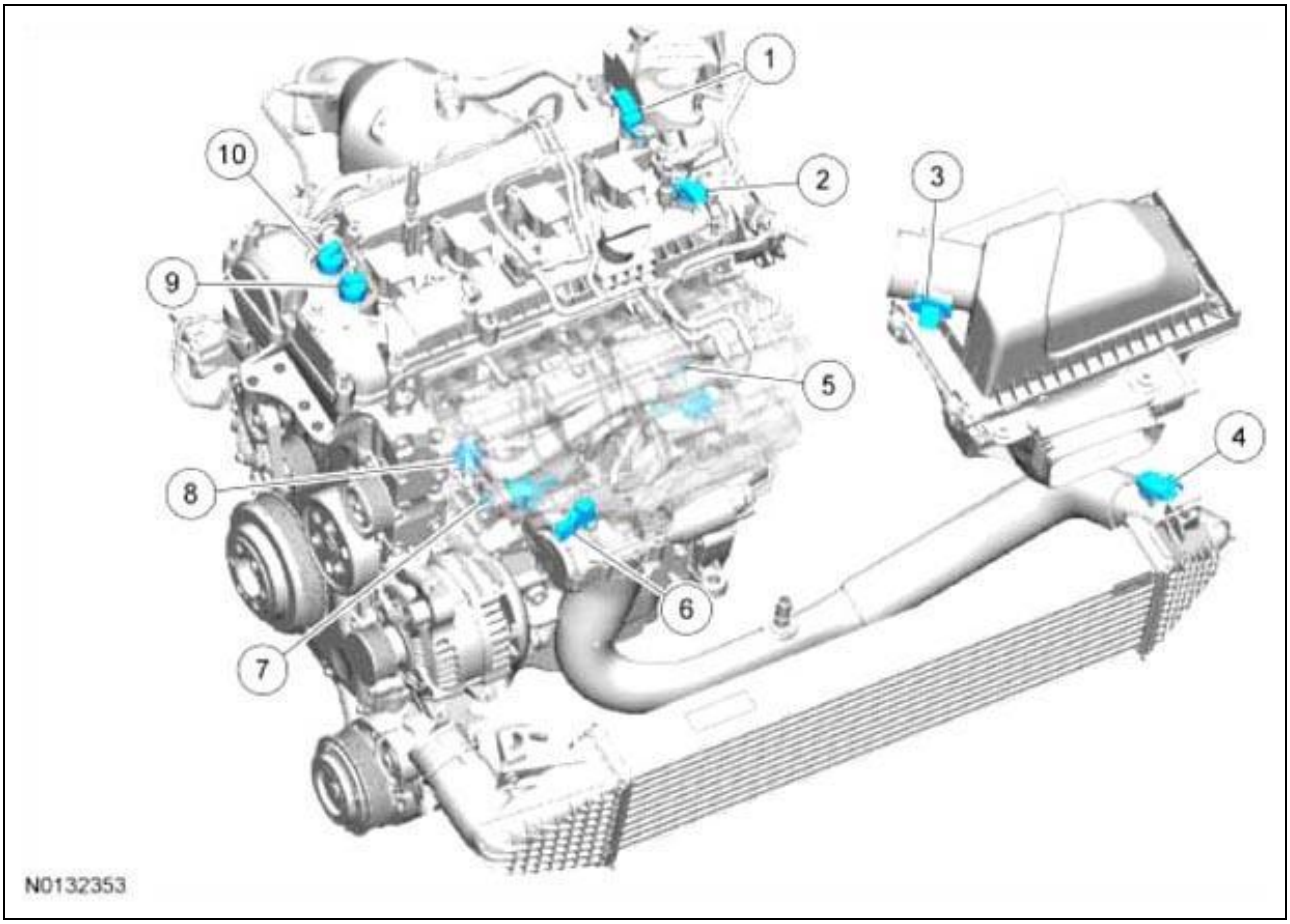
- - -

PCM



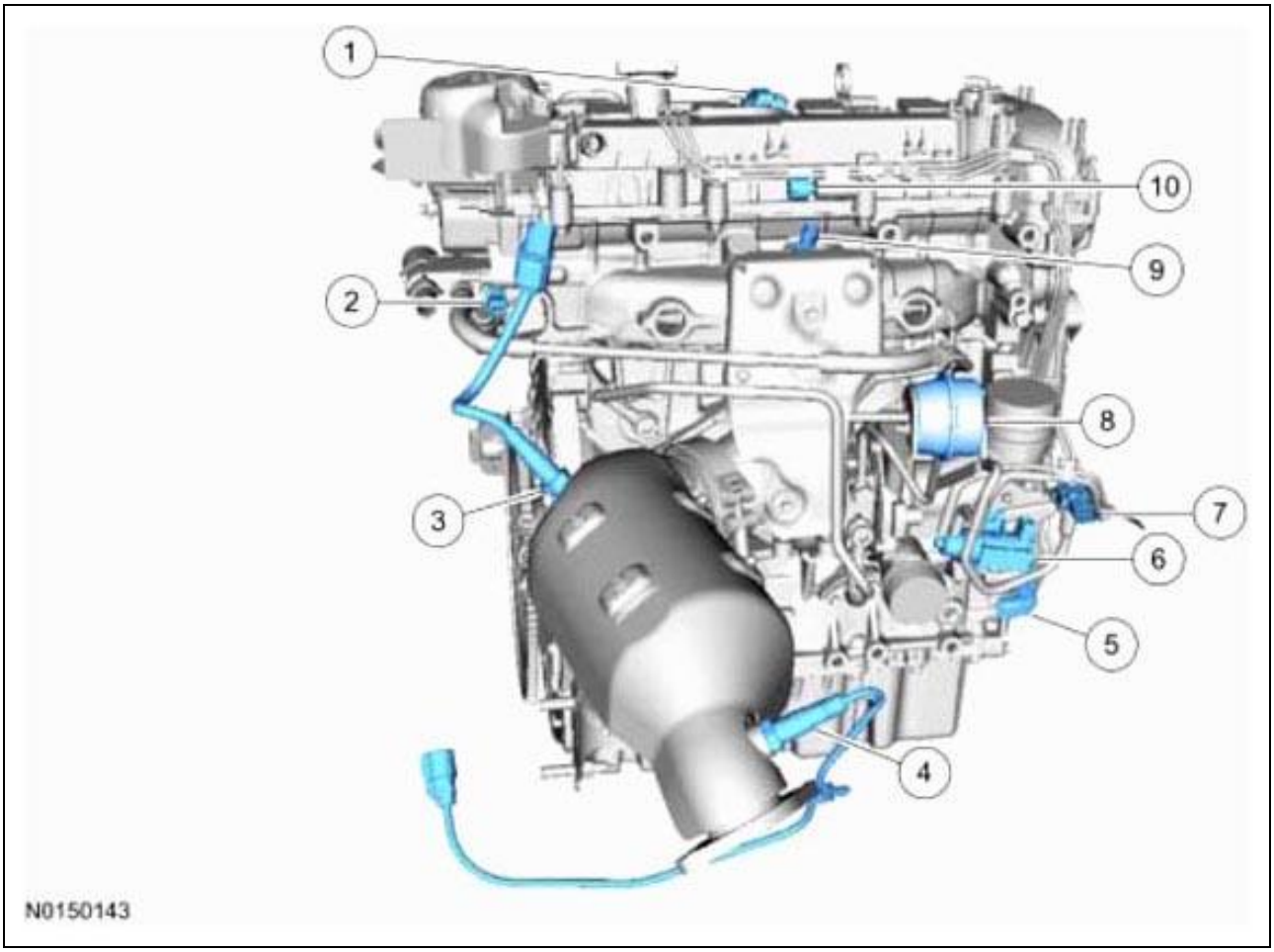
Item	Part Number	Description
1	12A650	**PCM**

2.0L GTDI Engine Sensor Locations - LH



Item	Part Number	Description
1	12K073	Exhaust **CMP** sensor
2	12K073	Intake **CMP** sensor
3	12B579	**MAF** sensor
4	9F479	**TCBP** /**CAC** sensor
5	12A699	LH **KS**
6	9F479	**MAP** sensor
7	9F972	**FRP** sensor
8	12A699	RH **KS**
9	6M280	Intake **VCT** oil control solenoid
10	6M280	Exhaust **VCT** oil control solenoid

2.0L GTDI Engine Sensor Locations - RH



Item	Part Number	Description
1	9K378	Turbocharger bypass valve solenoid
2	12A648	**ECT** sensor
3	9F472	**HO2S**
4	9G444	**CMS**
5	6C315	**CKP** sensor
6	9E882	Turbocharger wastegate regulating valve solenoid
7	9F479	Wastegate vacuum sensor
8	-	Wastegate actuator
9	6K004	**CHT** sensor
10	030851	Filter and cover

Overview

Refer to the ENGINE CONTROLS - DESCRIPTION & OPERATION (EXCEPT DIESEL & HYBRID) (SECTION 1) .

Electronic Engine Controls [DIAGNOSIS AND TESTING]

DTC Chart: PCM

Diagnostics in this service information assume a certain skill level and knowledge of Ford-specific diagnostic practices. REFER to DIAGNOSTIC METHODS for information regarding Ford-specific diagnostic practices.
PCM DTC CHART

DTC	Description	Action
P0125	Insufficient Coolant Temp For Closed Loop Fuel Control	REFER to ENGINE COOLING .
P0128	Coolant Thermostat (Coolant Temp Below Thermostat Regulating Temperature)	REFER to ENGINE COOLING .
P0217	Engine Coolant Overtemperature Condition	REFER to ENGINE COOLING .
P0460	Fuel Level Sensor "A" Circuit	First, REFER to ENGINE CONTROLS - SYMPTOM CHARTS (EXCEPT DIESEL & HYBRID) (SECTION 3) . If sent here from ENGINE CONTROLS - INTRODUCTION (EXCEPT DIESEL & HYBRID) (SECTION 0), GO to PINPOINT TEST B
P0461	Fuel Level Sensor "A" Circuit Range/Performance	First, REFER to ENGINE CONTROLS - SYMPTOM CHARTS (EXCEPT DIESEL & HYBRID) (SECTION 3) . If sent here from ENGINE CONTROLS - INTRODUCTION (EXCEPT DIESEL & HYBRID) (SECTION 0), GO to PINPOINT TEST B
P0462	Fuel Level Sensor "A" Circuit Low	First, REFER to ENGINE CONTROLS - SYMPTOM CHARTS (EXCEPT DIESEL & HYBRID) (SECTION 3) . If sent here from ENGINE CONTROLS - INTRODUCTION (EXCEPT DIESEL & HYBRID) (SECTION 0), GO to PINPOINT TEST B
P0463	Fuel Level Sensor "A" Circuit High	First, REFER to ENGINE CONTROLS - SYMPTOM CHARTS (EXCEPT DIESEL & HYBRID) (SECTION 3) . If sent here from ENGINE CONTROLS - INTRODUCTION (EXCEPT DIESEL & HYBRID) (SECTION 0), GO to PINPOINT TEST B
P0504	Brake Switch "A"/"B" Correlation	For non-adaptive cruise control, GO to PINPOINT TEST B . For adaptive cruise control, GO to PINPOINT TEST B
P0532	A/C Refrigerant Pressure Sensor A Circuit Low	For vehicles equipped with **EMTC** systems, GO to PINPOINT TEST A . For vehicles equipped with **DAMB** systems, GO to PINPOINT TEST A
P0533	A/C Refrigerant Pressure Sensor A Circuit High	For vehicles equipped with **EMTC** systems, GO to PINPOINT TEST A . For vehicles equipped with **DAMB** systems, GO to PINPOINT TEST A

P0562	System Voltage Low	REFER to CHARGING SYSTEM .
P0563	System Voltage High	REFER to CHARGING SYSTEM .
P0572	Brake Switch "A" Circuit	Low For non-adaptive cruise control, GO to PINPOINT TEST B . For adaptive cruise control, GO to PINPOINT TEST B
P0573	Brake Switch "A" Circuit High	For non-adaptive cruise control, GO to PINPOINT TEST B . For adaptive cruise control, GO to PINPOINT TEST B
P0620	Generator Control Circuit	GO to PINPOINT TEST C
P0625	Generator Field Terminal Circuit Low	GO to PINPOINT TEST D
P0626	Generator Field Terminal Circuit High	GO to PINPOINT TEST D
P0645	A/C Clutch Relay Control Circuit	For vehicles equipped with **EMTC** systems, GO to PINPOINT TEST B . For vehicles equipped with **DAMB** systems, GO to PINPOINT TEST B
P0657	Actuator Supply Voltage A Circuit/Open	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P065B	Generator Control Circuit Range/Performance	GO to PINPOINT TEST E .
P06A0	Variable A/C Compressor Control Circuit	For vehicles equipped with **EMTC** systems, GO to PINPOINT TEST W . For vehicles equipped with **DAMB** systems, GO to PINPOINT TEST AH .
P0701	Transmission Control System Range/Performance	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P0706	Transmission Range Sensor A Circuit Range/Performance	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P0707	Transmission Range Sensor "A" Circuit Low	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P0708	Transmission Range Sensor A Circuit High	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P0710	Transmission Fluid Temperature Sensor A Circuit	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .

P0711	Transmission Fluid Temperature Sensor A Circuit Range/Performance	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P0712	Transmission Fluid Temperature Sensor A Circuit Low	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P0713	Transmission Fluid Temperature Sensor A Circuit High	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P0715	Turbine/Input Shaft Speed Sensor A Circuit	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P0717	Turbine/Input Shaft Speed Sensor A Circuit No Signal	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P0718	Turbine/Input Shaft Speed Sensor A Circuit Intermittent	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P0720	Output Shaft Speed Sensor Circuit	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P0721	Output Shaft Speed Sensor Circuit Range/Performance	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P0722	Output Shaft Speed Sensor Circuit No Signal	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P0729	Gear 6 Incorrect Ratio	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P0731	Gear 1 Incorrect Ratio	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P0731	Gear 2 Incorrect Ratio	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P0733	Gear 3 Incorrect Ratio	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P0734	Gear 4 Incorrect Ratio	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P0735	Gear 5 Incorrect Ratio	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P0740	Torque Converter Clutch Solenoid Circuit/Open	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .

P0741	Torque Converter Clutch Solenoid Circuit Performance/Stuck Off	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P0742	Torque Converter Clutch Solenoid Circuit Stuck On	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P0743	Torque Converter Clutch Solenoid Circuit Electrical	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P0744	Torque Converter Clutch Solenoid Circuit Intermittent	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P0748	Pressure Control Solenoid "A" Electrical	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P0750	Shift Solenoid "A"	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P0751	Shift Solenoid "A" Performance/Stuck Off	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P0752	Shift Solenoid "A" Stuck On	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P0753	Shift Solenoid "A" Electrical	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P0754	Shift Solenoid "A" Intermittent	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P0755	Shift Solenoid "B"	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P0756	Shift Solenoid "B" Performance/Stuck Off	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P0757	Shift Solenoid "B" Stuck On	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P0758	Shift Solenoid "B" Electrical	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P0759	Shift Solenoid "B" Intermittent	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P0760	Shift Solenoid "C"	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P0761	Shift Solenoid "C" Performance/Stuck Off	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P0762	Shift Solenoid "C"	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .

	Stuck On	
P0763	Shift Solenoid "C" Electrical	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P0763	Shift Solenoid "C" Intermittent	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P0765	Shift Solenoid "D"	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P0766	Shift Solenoid "D" Performance/Stuck Off	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P0767	Shift Solenoid "D" Stuck On	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P0768	Shift Solenoid "D" Electrical	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P0769	Shift Solenoid "D" Intermittent	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P0770	Shift Solenoid "E"	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P0771	Shift Solenoid "E" Performance/Stuck Off	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P0772	Shift Solenoid "E" Stuck On	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P0773	Shift Solenoid "E" Electrical	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P0774	Shift Solenoid "E" Intermittent	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P07A5	Transmission Friction Element "B" Stuck On	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P07A8	Transmission Friction Element "B" Performance/Stuck Off	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P07A9	Transmission Friction Element "D" Stuck On	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P07AA	Transmission Friction Element "D" Performance/Stuck Off	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P0815	Upshift Switch Circuit	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P0816	Downshift Switch	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .

	Circuit	
P0867	Transmission Fluid Pressure	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P0960	Pressure Control Solenoid "A" Control Circuit/Open	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P0961	Pressure Control Solenoid "A" Control Circuit Range/Performance	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P0962	Pressure Control Solenoid "A" Control Circuit Low	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P0963	Pressure Control Solenoid "A" Control Circuit High	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P0973	Shift Solenoid "A" Control Circuit Low	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P0974	Shift Solenoid "A" Control Circuit High	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P0976	Shift Solenoid "B" Control Circuit Low	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P0977	Shift Solenoid "B" Control Circuit High	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P0979	Shift Solenoid "C" Control Circuit Low	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P0980	Shift Solenoid "C" Control Circuit High	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P0982	Shift Solenoid "D" Control Circuit Low	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P0983	Shift Solenoid "D" Control Circuit High	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P0984	Shift Solenoid "E" Control Circuit Range/Performance	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P1001	KOER Not Able To Complete, KOER Aborted	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P0A5A	Generator Current Sensor Circuit Range/Performance	REFER to CHARGING SYSTEM .

P0A5B	Generator Current Sensor Circuit Low	REFER to CHARGING SYSTEM .
P0A5C	Generator Current Sensor Circuit High	REFER to CHARGING SYSTEM .
P1285	Cylinder Head Overtemperature Condition	REFER to ENGINE COOLING .
P1299	Cylinder Head Overtemperature Protection Active	REFER to ENGINE COOLING .
P1397	System Voltage Out Of Self Test Range	REFER to CHARGING SYSTEM .
P1464	A/C Demand Out Of Self Test Range	For vehicles equipped with **EMTC** systems, if the **HVAC** controls were not powered off, power the **HVAC** off, CLEAR the **DTCs** and REPEAT the self-test. If the **DTC** returns, GO to PINPOINT TEST M . For vehicles equipped with **DAMB** systems, if the **HVAC** controls were not powered off, power the **HVAC** off, CLEAR the **DTCs** and REPEAT the self-test. If the **DTC** returns, GO to PINPOINT TEST O
P1501	Vehicle Speed Sensor Out Of Self Test Range	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P1502	Vehicle Speed Sensor Intermittent	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P161A	Incorrect Response from Immobilizer Control Module	The **BCM** ID received by the **PCM** does not match the ID stored in the **PCM** memory. CARRY OUT a parameter reset. For vehicles With **IA** , REFER to PASSIVE ANTI-THEFT SYSTEM (PATS) PARAMETER RESET . For vehicles without **IA** , REFER to PASSIVE ANTI-THEFT SYSTEM (PATS) PARAMETER RESET
P1636	Inductive Signature Chip Communication Error	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P163E	Transmission Control Module Programming Error	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P163F	Transmission ID Block Corrupted, Not Programmed	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P164D	AWD ID Block Corrupted, Not Programmed	REFER to FOUR-WHEEL DRIVE (4WD) SYSTEMS .
P1702	Transmission Range Sensor Circuit Intermittent	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .

P1700	Transmission Indeterminate Failure (Failed to Neutral)	Refer to REFER to MAIN CONTROL VALVE BODY and REFER to MAIN CONTROL - OVERHAUL to remove and disassemble the main control valve body for inspection of the valves for wear and debris.
P1703	Brake Switch Out Of Self Test Range	For non-adaptive cruise control, GO to PINPOINT TEST B . For adaptive cruise control, GO to PINPOINT TEST B
P1705	Transmission Range Circuit Not Indicating Park/Neutral During Self Test	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P1711	Transmission Fluid Temperature Sensor Out Of Self Test Range	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P1744	Torque Converter Clutch Solenoid Circuit Performance	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P1780	Transmission Control Switch (O/D Cancel) Circuit Out Of Self Test Range	REFER to AUTOMATIC TRANSAXLE/TRANSMISSION EXTERNAL CONTROLS - TRANSMISSION CONTROL SWITCH (TCS) .
P1783	Transmission Overtemperature Condition	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P181F	Clutch Control System Performance	CLEAR the **DTCs** and REPEAT the self-test. If the **DTC** returns, INSTALL a new **AWD** relay module. REFER to ALL WHEEL DRIVE (AWD) RELAY MODULE
P182B	Transfer Case Fluid Temperature Sensor Circuit Range/Performance	REFER to FOUR-WHEEL DRIVE (4WD) SYSTEMS .
P182C	Transfer Case Fluid Temperature Sensor Circuit Low	REFER to FOUR-WHEEL DRIVE (4WD) SYSTEMS .
P182D	Transfer Case Fluid Temperature Sensor Circuit High	REFER to FOUR-WHEEL DRIVE (4WD) SYSTEMS .
P187B	Tire Size Out of Acceptable Range - **AWD** Disabled/Limited Function	GO to PINPOINT TEST B
P188B	All Wheel Drive Clutch Control Circuit	GO to PINPOINT TEST C

P188C	All Wheel Drive Relay Module Communication Circuit	GO to PINPOINT TEST D
P188D	All Wheel Drive Relay Module Feedback Circuit	GO to PINPOINT TEST D
P1910	Reverse Lamp Control Circuit/Open	REFER to EXTERIOR LIGHTING .
P1921	Transmission Range Signal	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P193D	Cruise Control Multi-Function Input Signal	For non-adaptive cruise control, GO to PINPOINT TEST E . For adaptive cruise control, GO to PINPOINT TEST U
P2065	Fuel Level Sensor "B" Circuit	First, REFER to ENGINE CONTROLS - SYMPTOM CHARTS (EXCEPT DIESEL & HYBRID) (SECTION 3) . If sent here from ENGINE CONTROLS - INTRODUCTION (EXCEPT DIESEL & HYBRID) (SECTION 0), GO to PINPOINT TEST B
P2066	Fuel Level Sensor "B" Circuit Range/Performance	First, REFER to ENGINE CONTROLS - SYMPTOM CHARTS (EXCEPT DIESEL & HYBRID) (SECTION 3) . If sent here from ENGINE CONTROLS - INTRODUCTION (EXCEPT DIESEL & HYBRID) (SECTION 0), GO to PINPOINT TEST B
P2067	Fuel Level Sensor "B" Circuit Low	First, REFER to ENGINE CONTROLS - SYMPTOM CHARTS (EXCEPT DIESEL & HYBRID) (SECTION 3) . If sent here from ENGINE CONTROLS - INTRODUCTION (EXCEPT DIESEL & HYBRID) (SECTION 0), GO to PINPOINT TEST B
P2068	Fuel Level Sensor "B" Circuit High	First, REFER to ENGINE CONTROLS - SYMPTOM CHARTS (EXCEPT DIESEL & HYBRID) (SECTION 3) . If sent here from ENGINE CONTROLS - INTRODUCTION (EXCEPT DIESEL & HYBRID) (SECTION 0), GO to PINPOINT TEST B
P2700	Transmission Friction Element "A" Apply Time Range/Performance	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P2701	Transmission Friction Element "B" Apply Time Range/Performance	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P2702	Transmission Friction Element "C" Apply Time Range/Performance	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 Symptom Chart for Shift Concerns: • No 1-2 Shift/Harsh/Soft/Slipping • No 5-6 Shift/Harsh/Soft/Slipping • Only Gears 2 and 6 available

P2703	Transmission Friction Element "D" Apply Time Range/Performance	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P2704	Transmission Friction Element "E" Apply Time Range/Performance	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P2705	Transmission Friction Element "F" Apply Time Range/Performance	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P2760	Torque Converter Clutch Pressure Control Solenoid Intermittent	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
P2783	Torque Converter Temperature Too High	REFER to AUTOMATIC TRANSMISSION - 6F50/6F55 .
U0104	Lost Communication With Cruise Control Module	GO to PINPOINT TEST M
U0129	Lost Communication With Brake System Control Module	For non-adaptive cruise control, GO to PINPOINT TEST D For adaptive cruise control, GO to PINPOINT TEST H
All Other DTCs	-	REFER to ENGINE CONTROLS - SYMPTOM CHARTS (EXCEPT DIESEL & HYBRID) (SECTION 3) .

Module Configuration

System Operation

Programmable Module Installation (PMI)

PMI is a scan tool process which configures settings in a new module. Data used for the **PMI** process is automatically downloaded from the original module and stored when a scan tool session is started. If this data cannot be retrieved from the module being replaced, the scan tool may prompt for As-Built data entry or display a list of parameter values that need to be manually selected. Some modules are reprogrammed during **PMI** when a strategy/calibration update is available.
It is important that the scan tool identifies the vehicle and obtains configuration data prior to removing any modules. The new module must be able to communicate with the scan tool in order to carry out **PMI** .

Module Programming

Module reprogramming (also referred to as "flashing") is a scan tool process which updates the strategy/calibration in a module. Reprogramming a module with the same level of software does not improve module operation or repair a hardware failure. Module reprogramming is automatically carried out during **PMI** when a later strategy/calibration is available.
Limit module reprogramming to circumstances where a published **TSB** procedure recommends doing so. (Some modules limit the number of times it can be reprogrammed.)
A module cannot communicate with other modules on the communication network while being reprogrammed. After the reprogramming process, clear any network communication **DTCs** which may have been set in other modules.
Some modules are reprogrammed in coordination with other modules. Follow the **IDS** key cycling instructions carefully to avoid reprogramming errors, including failure of programming one or more of the modules.

Programmable Parameters

Programmable parameters are customer preference items that may be modified by the dealer via the scan tool or in some cases, modified by the customer following a procedure listed in the Owner's Literature. While many configuration options may exist for a module, only a few of these options are programmable parameters. (Some parameters must be changed in multiple modules at the same time.)

Adaptive Learning And Calibration

Some modules require a separate learning procedure be carried out if replaced as part of a repair procedure. For adaptive learning and calibration instructions, refer to the appropriate specific module removal and installation procedures.

Vehicle Identification (VID) Block

Vehicle identification block commonly stores powertrain configuration items such as VIN, tire size, axle ratio, and whether or not the vehicle is equipped with cruise control.

Transmission Identification Block

Some **PCM** also contain a memory area called a transmission identification block. The transmission identification block commonly stores solenoid body flow data. If the solenoid body information is not correct, transaxle damage or driveability concerns can occur.

As-Built Data

As-Built data is a **VIN** -specific module configuration record. During vehicle build, the configuration from all modules is downloaded and stored in the As-Built database. As-Built data does not reflect customer preference items that have been changed from the default state. These items need to be changed using programmable parameters after the module is configured.
It is not necessary to obtain As-Built data unless directed to do so by the scan tool. This data may be accessed from the technician service publication web site.

Module Configuration And Parameter Chart

The chart describes specific module configuration information:

Module Name	PMI Available	Reprogram/Flash Capable	Requires Adaptive Learning or Calibration	Available Programmable Parameters
Accessory Protocol Interface	Yes	Yes	No	

Module (APIM)				• Clock display • Date format • Tire Pressure Monitor (TPM) module
All Terrain Control Module (ATCM)	No	No	No	None
Anti-Lock Brake System (ABS) module	Yes	Yes	• IVD initialization	• Tire size
Audio Front Control Module (ACM)	Yes	Yes	No	• MP3 **CD** text conversion
Audio Digital Signal Processing (DSP) module	Yes	Yes	No	None
Body Control Module (BCM)	Yes	Yes	No	• Courtesy lamp dimming type • Daytime Running Lamps (DRL) feature • **DRL** type • Liftgate/truck present • Locking horn feedback feature • Locking light feedback feature • Unlocking light feedback feature • Police dark car feature • Smart unlocking feature • Tire placard pressure • Tire size
Cruise-Control Module (CCM)	Yes	Yes	No	None
Driver Seat Module (DSM)	Yes	Yes	No	None
Dual Climate Controlled Seat Module (DCSM)	Yes	Yes	No	None
Front Lighting Control Module (FLM)	No	No	No	None

Front Controls Interface Module (FCIM)	No	No	No	None
Front Control/Display Interface Module (FCDIM)	Yes	Yes	No	• Date format
Generic Function Module (GFM)	No	No	No	None
Global Positioning System Module (GPSM)	Yes	Yes	No	None
Head Up Display (HUD) module	No	No	No	None
Heated Steering Wheel Module (HSWM)	Yes	Yes	No	None
Heating Ventilation Air Conditioning (HVAC) module	Yes	Yes	No	None
Image Processing Module - A (IPM-A)	Yes	Yes	• Camera alignment	None
Instrument Panel Cluster (IPC)	Yes	Yes	No	• Belt-Minder® • Back up warning chime • Courtesy wipe after wash • English/Metric • Gallon display type • Language • Rear reverse gear wipe
Liftgate/Trunk Module (LTM)	No	No	No	None
Occupant Classification System Module (OCSM)	No	No	• OCS re-zero	None
Parking Aid Module (PAM)	Yes	Yes	No	None
Power Steering Control Module (PSCM)	Yes	Yes	No	• Vehicle variant tune selector • Tire circumference selector
Powertrain Control Module (PCM)	Yes	Yes	Yes	• Speed control present

				• Vehicle Identification Number (VIN)
Remote Function Actuator (RFA) module	Yes	Yes	No	• Autolock (driver 1-4) • AutoUnlock (driver 1-4) • Autolock vehicle level • AutoUnlock vehicle level • Intelligent Access (IA) • One 2-stage unlock • One 2-stage unlock, driver • One 2-stage unlock vehicle level • One 2-stage unlock vehicle level, driver • Pase configuration
Restraints Control Module (RCM)	Yes	Yes	No	• Drivers Belt-Minder® Passengers Belt-Minder® • Safety belt warning enable, Belt-Minder®
Steering Column Control Module (SCCM)	Yes	Yes	No	None
Side Obstacle Detection Control Module - Left (SODL)	Yes	Yes	No	• Cross Traffic Alert (CTA) • Blind Spot Information System (BLIS®)
Side Obstacle Detection Control Module - Right (SOD-R)	Yes	Yes	No	• CTA • BLIS®
Tire Pressure Monitor (TPM)	No	No	No	None

module				
Transmission Control Module (TCM)	Yes	Yes	No	None

Pinpoint Test M: Lost Communication U0028, U0073, U0100, U0115, U0294, U0401

Diagnostic Overview

Diagnostics in this service information assume a certain skill level and knowledge of Ford-specific diagnostic practices. Refer to DIAGNOSTIC METHODS for information about these practices.
Refer to MODULE COMMUNICATIONS NETWORK for schematic and connector information.

Normal Operation And Fault Conditions

The **TCM** uses information contained in messages from the PCM sent on the **HS-CAN** .
DTC FAULT TRIGGER CONDITIONS

DTC	Description	Fault Trigger Conditions
U0028	Vehicle Communication Bus "A"	This DTC sets if the **TCM** does not receive an expected message from the PCM.
U0073	Control Module Communication Bus "A" Off	This DTC sets if the **TCM** does not receive an expected message from the PCM.
U0100	Lost Communication With **ECM** /PCM "A"	This DTC sets if the **TCM** does not receive an expected message from the PCM.
U0115	Lost Communication With **ECM** /PCM "B"	This DTC sets if the **TCM** does not receive an expected message from the PCM.
U0294	Lost Communication With PCM	This DTC sets if the **TCM** does not receive an expected message from the PCM.
U0401	Invalid Data Received From **ECM** /PCM "A"	This DTC sets if the **TCM** does not receive an expected message from the PCM.

Possible Sources

- Connectors damaged or pushed-out terminals, corrosion, loose wires and missing or damaged seals
- **TCM**

PINPOINT TEST M: LOST COMMUNICATION

M1 CHECK THE COMMUNICATION NETWORK

Ignition ON.
Enter the following diagnostic mode on the scan tool: Carry out the network test.

Did the PCM/TCMpass the network test?

Yes : GO to **M2** .

No : REFER to ENGINE CONTROLS - INTRODUCTION (EXCEPT DIESEL & HYBRID) (SECTION 0) to diagnose no communication with the PCM.

M2 CHECK THETCMCMDTCs

Enter the following diagnostic mode on the scan tool: Carry out the self-test and retrieve DTCs.
Clear the DTCs.
Wait 10 seconds.
Repeat the self-test.

Are DTCs U0100, U0115, U0294, or U0401 present?

Yes : GO to **M3** .

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.

M3 RETRIEVE THE RECORDED DTCs FROM THETCMSELF-TEST

Check for recorded DTCs from the **TCM** self-test.

Are DTCs P0702, P0882, P0883, P0884 or P1397 present?

Yes : REFER to CHARGING SYSTEM .

No : GO to **M4** .

M4 RETRIEVE THE RECORDED DTCs FROM THE PCM SELF-TEST

Check for recorded DTCs from the PCM self-test.

Are DTCs P0562, P0563 or P1397 present?

Yes : REFER to CHARGING SYSTEM .

No : GO to **M5** .

M5 CHECK FOR DTC U0100 SET IN OTHER MODULES

Ignition ON.
Enter the following diagnostic mode on the scan tool: Carry out the self-test for all modules.
Retrieve the **CMDTCs** from all modules.

Is DTC U0100 set in the ABS module or in theIPC?

Yes : CHECK **OASIS** for any applicable TSBs. If a TSB exists for this concern, discontinue this test and follow TSB instructions. If no TSBs address this concern, INSTALL a new PCM. REFER to ELECTRONIC ENGINE CONTROLS . PROGRAM the PCM with the latest calibration level.

No : CHECK **OASIS** for any applicable TSBs. If a TSB exists for this concern, discontinue this test and follow TSB instructions. If no TSBs address this concern, INSTALL a new **TCM** . REFER to TRANSMISSION CONTROL MODULE (TCM). PROGRAM the **TCM** with the latest calibration level. PERFORM the Solenoid Body Strategy Download procedure. REFER to SOLENOID BODY STRATEGY DOWNLOAD.