

AE: Unable to Activate Self Test/Network Communication Error

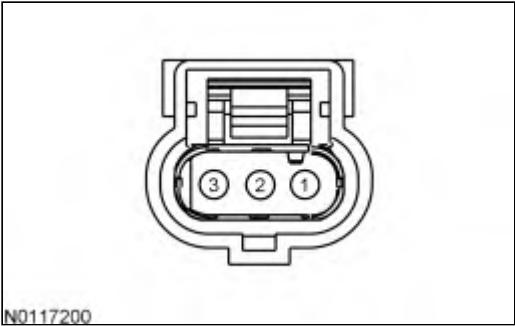
Note: Regeneration may occur during normal operation. During regeneration, diagnostic procedures may display biased values. If a regeneration occurs during diagnostic procedures, allow the process to complete before continuing diagnostics.

This pinpoint test is intended to diagnose the following:

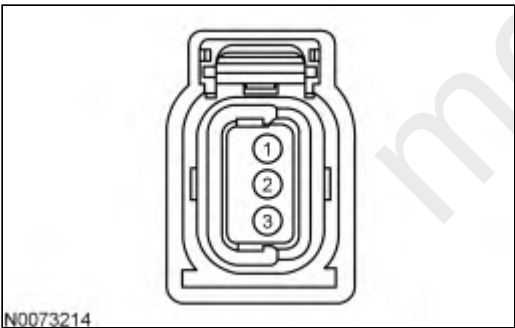
- unable to communicate with the PCM
- unable to activate the PCM self-test
- harness circuits VPWR, ISP-R, PCMRC and PWRGND

Manifold Absolute Pressure (MAP) Sensor Connector

A

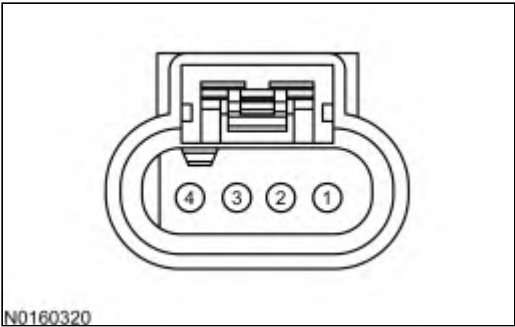


B



Vehicle	Connector	Pin	Circuit
F-150, F-Series Super Duty	A	3	VREF
		2	SIGRTN
All other vehicles	B	3	VREF
		1	SIGRTN

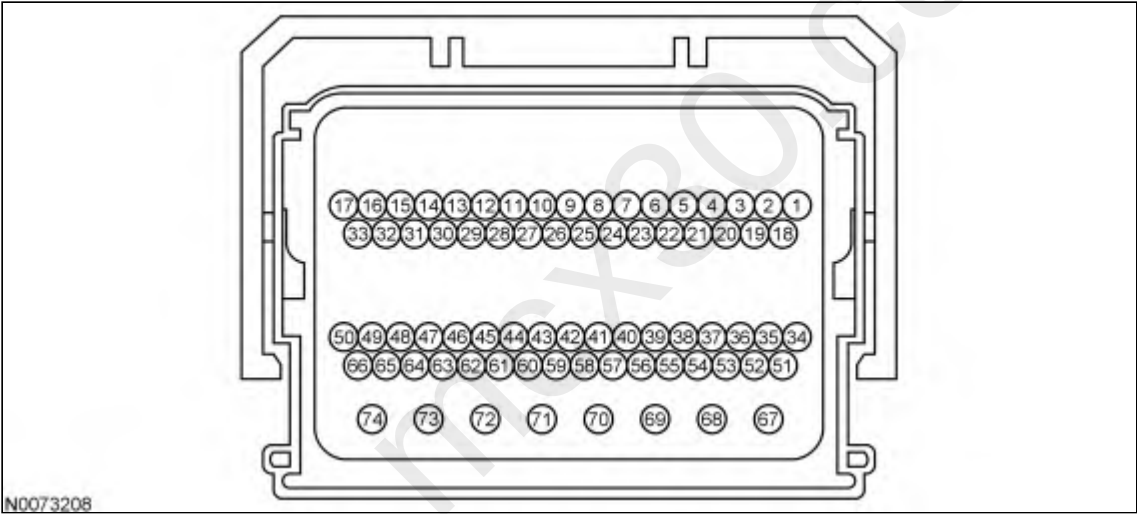
Manifold Absolute Pressure/Charge Air Cooler Temperature (MAP/CACT) Sensor Connector



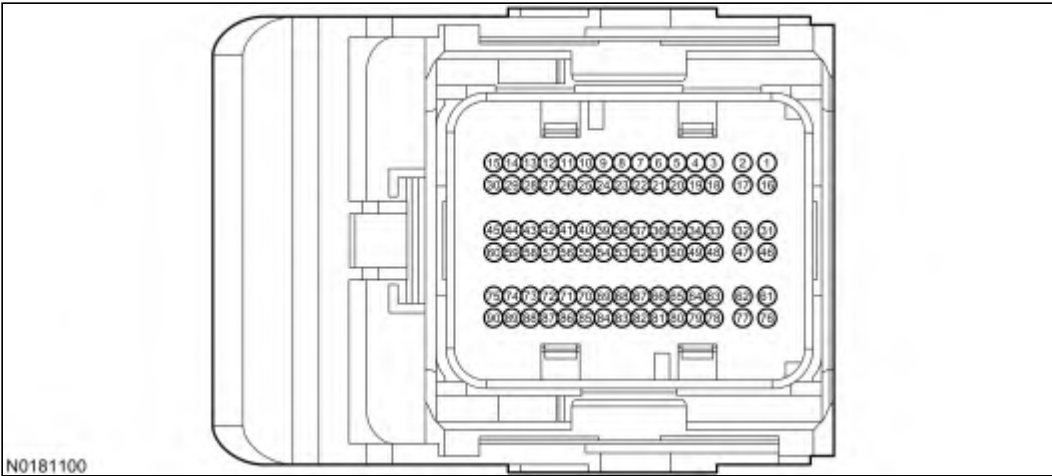
Pin	Circuit
4	SIGRTN (Signal Return)
2	VREF (Reference Voltage)

Powertrain Control Module-B (PCM-B) Connector

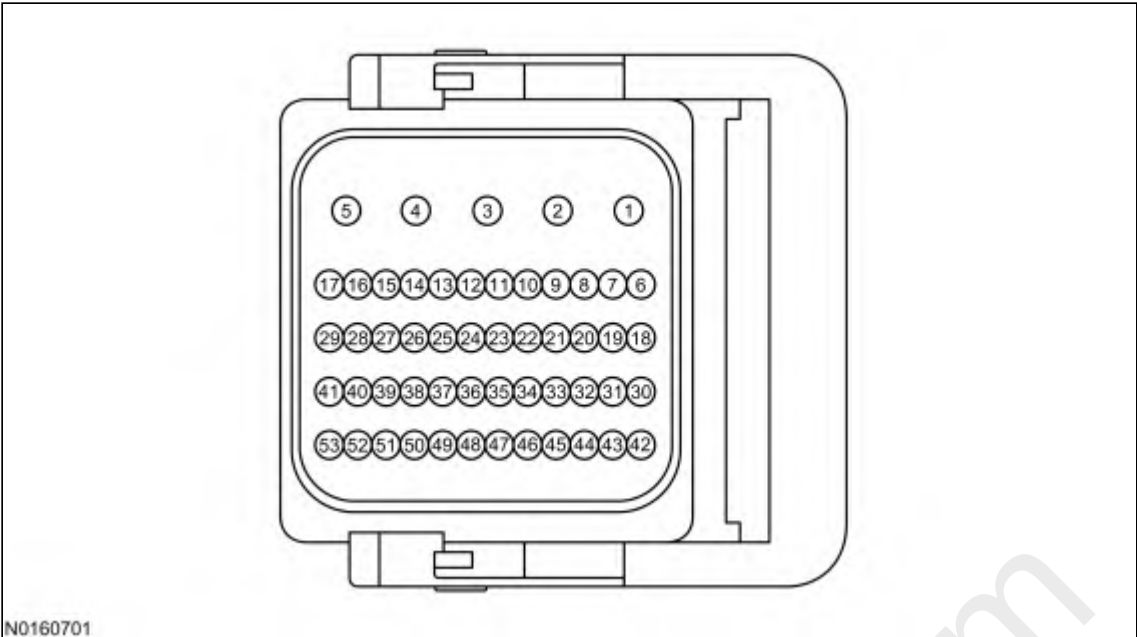
A



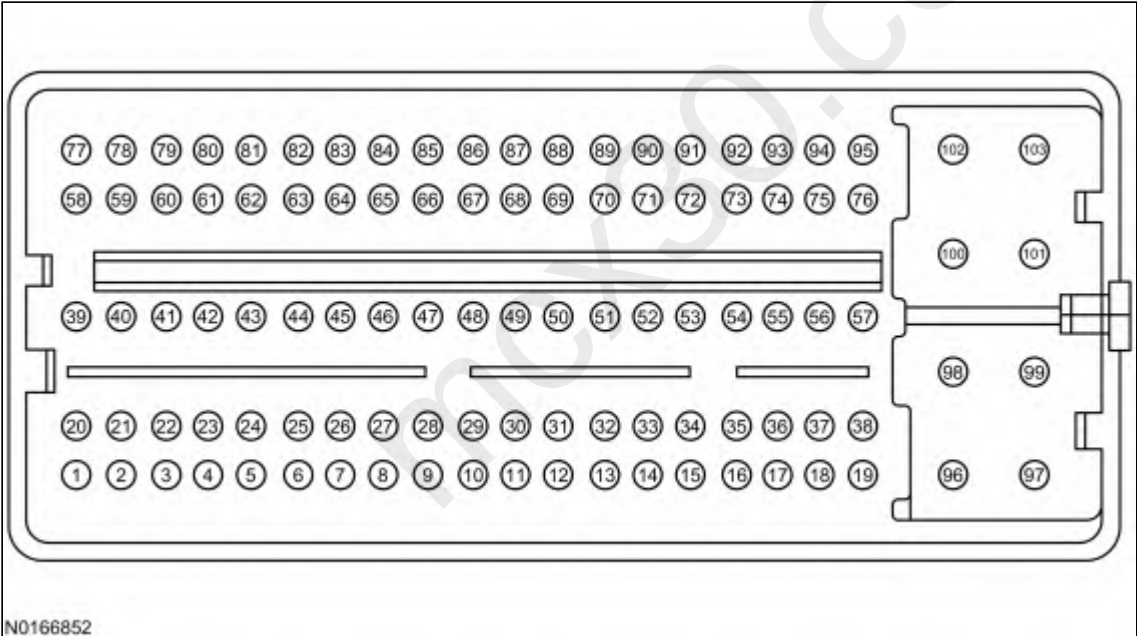
B



C



D



Vehicle	Connector	Pin	Circuit
F-650 / F-750	A	70, 71, 72, 73, 74 67, 68, 69 38 42	PWRGND VPWR PCMRC ISP-R
F-Series Super Duty	B	47, 61, 62, 76, 77 1, 16, 17, 2 50 21	PWRGND VPWR PCMRC ISP-R

Vehicle	Connector	Pin	Circuit
Transit	C	2, 3, 42, 53, 7 17, 29, 5 48 39	PWRGND VPWR PCMRC ISP-R
Transit Connect	D	96, 97, 98 101, 102, 103 42 82	PWRGND VPWR PCMRC ISP-R
All other vehicles	A	73, 72, 71, 70 69, 68, 67 38 42	PWRGND VPWR PCMRC ISP-R

AE1 CARRY OUT A VEHICLE INSPECTION AND VERIFY THE SELF-TEST PROCEDURE

Note: If the self-test or communication concern occurred after a failed or an aborted reprogram, the module may be blank. Attempt to reprogram the module again before continuing with this pinpoint test.

- Visually inspect the following for obvious signs of damage:
 - harness circuits
 - electrical connections
- Verify that the correct procedure was used to activate the self-test for the scan tool. Refer to Section 2, [Scan Tool Setup and Functionality](#).

Was the correct self-test procedure used?

Yes	GO to AE2 .
No	REFER to Section 2, Scan Tool Setup and Functionality .

AE2 CARRY OUT THE NETWORK TEST

Note: When using Integrated Diagnostic System (IDS), the scan tool attempts to communicate with the PCM first. After establishing communication with the PCM, the scan tool then attempts to communicate with all modules on the vehicle. If an IDS session cannot be established, IDS may state no communication can be established with the PCM:

- choose No when the scan tool prompts whether or not to retry communication.
 - enter a PCM part number, tear tag or calibration number to identify the vehicle and start a session. The PCM part number and 4-character tear tag are located on the PCM.
- Ignition ON, engine OFF.
 - Carry out the network test.

Do all modules indicate pass?

Yes	For DTC U0073, GO to AE7 . For DTCs U0101, U0402 and U1013, GO to AE8 . For DTC U0106, GO to AE9 . For DTC U0121, GO to AE10 . For DTCs U0140 or U0422, GO to AE11 . For DTC U0151, GO to AE12 . For DTC U0155, GO to AE13 . For DTC U0212, GO to AE14 .
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	For DTCs U0307 and U0407, GO to AE15. For DTC U0418, GO to AE16. For DTCs U0102 and U041E, GO to AE17. For DTC U0452, GO to AE18. For DTC U010E, GO to AE19. For DTC U0419, GO to AE20. For all others, REFER to Section 3, Symptom Charts, GO to Pinpoint Test QT, to continue diagnosis.
No	If only PCM indicates fail, GO to AE3. For network test or all other modules indicate fail, REFER to the Workshop Manual Section 418-00, Module Communications Network to diagnose the PCM does not respond to the scan tool symptom.

AE3 CHECK THE VREF CIRCUIT FOR VOLTAGE

Note: PCM voltage and ground can be determined by measuring VREF voltage at a sensor.

- For Transit Connect,
- Ignition OFF.
- MAP/CACT Sensor connector disconnected.
- Ignition ON, engine OFF.
- Measure the voltage between:

(+) MAP/CACT Sensor Connector, Harness Side	(-) MAP Sensor Connector, Harness Side
VREF - Pin 2	SIGRTN

- For all others,
- Ignition OFF.
- MAP Sensor connector disconnected.
- Ignition ON, engine OFF.
- Measure the voltage between:

(+) MAP Sensor Connector, Harness Side	(-) MAP Sensor Connector, Harness Side
VREF	SIGRTN

Is the voltage between 4.5 - 5.5 V?

Yes	REFER to the Workshop Manual Section 418-00, Module Communications Network to diagnose the PCM does not respond to the scan tool symptom.
No	GO to AE4 .

AE4 CHECK THE ISP-R CIRCUIT FOR VOLTAGE

- Ignition OFF.
- PCM-B connector disconnected.
- Ignition ON, engine OFF.
- Measure the voltage between:

(+) PCM-B Connector, Harness Side	(-)
ISP-R	Ground

Is any voltage present?

Yes	GO to AE5 .
No	REPAIR the open circuit. Clear the PCM DTCs. REPEAT the self-test.

AE5 CHECK THE PCM VPWR CIRCUITS FOR VOLTAGE

- Ignition OFF.
- Connect a 5 amp fused jumper wire between the following:

Point A PCM-B Connector, Harness Side	Point B
PCMRC	Ground

- Ignition ON, engine OFF.
- Measure the voltage between:

(+) PCM-B Connector, Harness Side	(-)
VPWR	Ground

Is any voltage present?

Yes	GO to AE6 .
No	GO to Pinpoint Test AJ .

AE6 CHECK THE PWRGND CIRCUITS FOR AN OPEN

- Ignition OFF.
- Measure the resistance between:

(+) PCM-B Connector, Harness Side	(-)
PWRGND	Ground

Are the resistances less than 5 ohms?

Yes	GO to AE21 .
No	REPAIR the open circuit. Clear the PCM DTCs. REPEAT the self-test.

AE7 CHECK FOR A CONTROL MODULE COMMUNICATION BUS A CONCERN

- Check for any other control module communication DTCs.
- Check for other control module communication related symptoms.

Is a concern present?

Yes	REFER to the Workshop Manual Section 418-00, Module Communications Network, Inspection and Verification to continue diagnosis.
No	GO to AE21 .

AE8 CHECK FOR A TRANSMISSION CONTROL MODULE (TCM) CONCERN

- Check for any TCM DTCs.
- Check for other TCM related symptoms.

Is a concern present?

Yes	REFER to the Workshop Manual Section 307-01, Automatic Transaxle/Transmission, Diagnosis and Testing.
No	GO to AE21 .

AE9 CHECK FOR A GLOW PLUG CONTROL MODULE (GPCM) CONCERN

- Check for any GPCM DTCs.
- Check for other GPCM related symptoms.

Is a concern present?

Yes	GO to Pinpoint Test AF .
No	GO to AE21 .

AE10 CHECK FOR AN ANTI-LOCK BRAKE SYSTEM (ABS) MODULE CONCERN

- Check for any ABS module DTCs.
- Check for other ABS module related symptoms.

Is a concern present?

Yes	REFER to the Workshop Manual Section 303-14, Electronic Engine Controls, DTC Charts.
No	GO to AE21 .

AE11 CHECK FOR A BODY CONTROL MODULE (BCM) CONCERN

- Check for any BCM DTCs.
- Check for other BCM related symptoms.

Is a concern present?

Yes	REFER to the Workshop Manual Section 303-14, Electronic Engine Controls, DTC Charts.
No	GO to AE21 .

AE12 CHECK FOR A RESTRAINTS CONTROL MODULE (RCM) CONCERN

- Check for any RCM DTCs.
- Check for other RCM related symptoms.

Is a concern present?

Yes	REFER to the Workshop Manual Section 303-14, Electronic Engine Controls, DTC Charts.
No	GO to AE21 .

AE13 CHECK FOR AN INSTRUMENT PANEL CLUSTER (IPC) CONTROL MODULE CONCERN

- Check for any IPC DTCs.
- Check for other IPC control module related symptoms.

Is a concern present?

Yes	REFER to the Workshop Manual Section 303-14, Electronic Engine Controls, DTC Charts.
No	GO to AE21 .

AE14 CHECK FOR A STEERING COLUMN CONTROL MODULE (SCCM) CONCERN

- Check for any SCCM DTCs.
- Check for other SCCM related symptoms.

Is a concern present?

Yes	REFER to the Workshop Manual Section 303-14, Electronic Engine Controls, DTC Charts.
No	GO to AE21 .

AE15 SOFTWARE INCOMPATIBILITY WITH GLOW PLUG CONTROL MODULE (GPCM)

- Check for any GPCM DTCs.
- Check for other GPCM related symptoms.

Is a concern present?

Yes	GO to Pinpoint Test AF .
No	GO to AE21 .

AE16 INVALID DATA RECEIVED FROM ANTILOCK BRAKE SYSTEM (ABS) CONTROL MODULE

- Check for any ABS DTCs.
- Check for other ABS related symptoms.

Is a concern present?

Yes	REFER to the Workshop Manual Section 206-09, Vehicle Dynamic Systems, Inspection and Verification to continue diagnosis.
No	GO to AE21 .

AE17 INVALID DATA RECEIVED FROM TRANSFER CASE CONTROL MODULE (TCCM)

- Check for any TCCM DTCs.
- Check for other TCCM related symptoms.

Is a concern present?

Yes	REFER to the Workshop Manual Section 308-07A, Four Wheel Drive (4WD) Systems, Inspection and Verification to continue diagnosis.
No	GO to AE21 .

AE18 INVALID DATA RECEIVED FROM RESTRAINTS CONTROL MODULE (RCM)

- Check for any RCM DTCs.
- Check for other RCM related symptoms.

Is a concern present?

Yes	REFER to the Workshop Manual Section 501-20, Supplemental Restraint System, Inspection and Verification to continue diagnosis.
No	GO to AE21 .

AE19 CHECK FOR A REDUCTANT CONTROL MODULE CONCERN

- Check for any Reductant Control Module DTCs.
- Check for other Reductant Control Module related symptoms.

Is a concern present?

Yes	GO to Pinpoint Test RM .
No	GO to AE21 .

AE20 CHECK FOR A STEERING EFFORT CONTROL MODULE CONCERN

- Check for any Steering Effort Control Module DTCs.
- Check for any Steering Effort Control Module related symptoms.

Is a concern present?

Yes	REFER to the Workshop Manual Section 303-14, Electronic Engine Controls, DTC Charts.
No	GO to AE21 .

AE21 CHECK FOR CORRECT PCM OPERATION

- Disconnect all the PCM connectors.

Visually inspect for:

- corrosion
- pushed out pins
- Connect all the PCM connectors and make sure they seat correctly.
- Carry out the network test and verify the concern is still present.
- Carry out the PCM self-test.
- Verify the concern is still present.

Is the concern still present?

Yes	INSTALL a new PCM. REFER to Section 2, Flash Electrically Erasable Programmable Read Only Memory (EEPROM) .
No	The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector.

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