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1980 FORD Pinto OEM Service and Repair Workshop Manual

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Normal Operation and Fault Conditions

REFER to: Electric Powertrain Control - Component Location(303-14F Electric Powertrain Control - 3.5L V6 PowerBoost (CN), Description and Operation).

DTC Fault Trigger Conditions

DTC (diagnostic trouble code)	Description	Fault Trigger Condition
SOBDMC (secondary on-board diagnostic control module C) U0253:87	Lost Communication With Accessory Protocol Interface Module: Missing Message	This DTC (diagnostic trouble code) sets when messages are missing from the APIM (SYNC module) .

Possible Sources

- Communications network concern
- APIM (SYNC module)

BK1 CHECK THE COMMUNICATION NETWORK

- Ignition ON.
- Using a diagnostic scan tool, carry out a network test.

Does the APIM (SYNC module) pass the network test?

Yes	GO to BK2
No	DIAGNOSE the network concern.

BK2 RETRIEVE THE APIM (SYNC MODULE) DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, carry out the APIM (SYNC module) self-test.

Are any APIM (SYNC module) diagnostic trouble codes (DTCs) recorded?

Yes	REFER to: Information and Entertainment System(415-00 Information and Entertainment System - General Information, Diagnosis and Testing).
No	GO to BK3

- pushed-out pins – install new pins as necessary
- Reconnect the APIM (SYNC module) connectors. Make sure they seat and latch correctly.
- Ignition ON.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	DIAGNOSE the network concern.

No	The system is operating correctly at this time. The DTC (diagnostic trouble code) may have been set due to high network traffic or an intermittent fault condition.

PINPOINT TEST BL : U0288:87

NOTE

The Inverter System Controller (ISC) is referred to as the SOBDMC (Secondary On-Board Diagnostic Control Module C) in the scan tool.

Normal Operation and Fault Conditions

REFER to: Electric Powertrain Control - Component Location(303-14F Electric Powertrain Control - 3.5L V6 PowerBoost (CN), Description and Operation).

DTC Fault Trigger Conditions

DTC (diagnostic trouble code)	Description	Fault Trigger Condition
SOBDMC (secondary on-board diagnostic control module C) U0288:87	Lost Communication With DC/AC Converter Control Module 'A': Missing Message	This DTC (diagnostic trouble code) sets when messages are missing from the DCACA (Direct Current/Alternating Current Converter Module A) .

Possible Sources

- Communications network concern
- DCACA (Direct Current/Alternating Current Converter Module A)

BL1 CARRY OUT A VEHICLE INSPECTION AND VERIFY THE SELF-TEST PROCEDURE

No	GO to BL4

BL3 CHECK FOR A DCACA (DIRECT CURRENT/ALTERNATING CURRENT CONVERTER MODULE A) CONCERN

- Using a diagnostic scan tool, carry out the DCACA (Direct Current/Alternating Current Converter Module A) self-test.
- Check for any other DCACA (Direct Current/Alternating Current Converter Module A) related symptoms.

Is a concern present?

Yes	DIAGNOSE the DCACA (Direct Current/Alternating Current Converter Module A) concern. REFER to: Direct Current/Alternating Current (DC/AC) Inverter - Vehicles With: 110-120V 2.4kW Pickup Bed Power Outlet (414-05 Voltage Converter/Inverter, Diagnosis and Testing).

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.

BL4 INVERTER SYSTEM CONTROLLER (ISC) SELF-TEST

- Confirm the Inverter System Controller (ISC) was the only module to fail.

Was the Inverter System Controller (ISC) the only module to fail?

Yes	GO to BL5

No	DIAGNOSE the network concern.

BL5 CHECK THE INVERTER SYSTEM CONTROLLER (ISC) B+ CIRCUIT FOR VOLTAGE

- Ignition OFF.
- Disconnect Inverter System Controller (ISC) C1458A .
- Ignition ON.
- Measure and record:

Yes	GO to BL7

No	REPAIR the circuit.

BL7 CHECK THE INVERTER SYSTEM CONTROLLER (ISC) GROUND CIRCUITS FOR AN OPEN

- Ignition OFF.
- Measure and record:

Positive Lead	Measurement / Action	Negative Lead
C1458A-L4	Ω	Ground
C1458A-M4	Ω	Ground

Are the resistances less than 5 ohms?

Yes	DIAGNOSE the network concern.

No	REPAIR the open circuit.

PINPOINT TEST BM : U0298

NOTE

The Inverter System Controller (ISC) is referred to as the SOBDMC (Secondary On-Board Diagnostic Control Module C) in the scan tool.

Normal Operation and Fault Conditions

BM2 CARRY OUT THE NETWORK TEST

- Note: When using FDRS (Ford Diagnosis and Repair System) , the scan tool attempts to communicate with the PCM (powertrain control module) first. After establishing communication with the PCM (powertrain control module) , the scan tool then attempts to communicate with all modules on the vehicle. If an FDRS (Ford Diagnosis and Repair System) session cannot be established, FDRS (Ford Diagnosis and Repair System) may state no communication can be established with the PCM (powertrain control module) :
  - Choose No when the scan tool prompts whether or not to retry communication.
  - Enter a PCM (powertrain control module) part number, tear tag or calibration number to identify the vehicle and start a session. The PCM (powertrain control module) part number and 4-character tear tag are located on the PCM (powertrain control module) .
- Ignition ON.

Do all modules indicate pass?

Yes	GO to BM3
No	GO to BM4

BM3 CHECK FOR A DCDC (DIRECT CURRENT/DIRECT CURRENT CONVERTER CONTROL MODULE) CONCERN

- Using a diagnostic scan tool, carry out the DCDC (direct current/direct current converter control module) self-test.
- Check for any other DCDC (direct current/direct current converter control module) related symptoms.

Is a concern present?

Yes	DIAGNOSE the DCDC (direct current/direct current converter control module) concern. REFER to: Direct Current/Direct Current (DC/DC) Converter Control Module - Electric (414-05 Voltage Converter/Inverter, Diagnosis and Testing).
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.

C1458A-K3		Ground

- Ignition ON.
- Measure and record:

Positive Lead	Measurement / Action	Negative Lead
C1458A-L2	V	Ground
C1458A-M2	V	Ground

Are the voltages greater than 10.5 volts?

Yes	GO to BM7

No	REPAIR the circuit.

BM7 CHECK THE INVERTER SYSTEM CONTROLLER (ISC) GROUND CIRCUITS FOR AN OPEN

- Ignition OFF.
- Measure and record:

Positive Lead	Measurement / Action	Negative Lead
C1458A-L4	Ω	Ground
C1458A-M4	Ω	Ground

Are the resistances less than 5 ohms?

- electrical connections

- Verify the correct procedure was used to activate the self-test for the scan tool.
  REFER to: Electronic Engine Controls - System Operation and Component Description(303-14C Electronic Engine Controls - 3.5L EcoBoost (BM), Description and Operation).
  Recreating the Fault.

Was the correct self-test procedure used?

Yes	GO to BN2

No	REFER to: Electronic Engine Controls - System Operation and Component Description(303-14C Electronic Engine Controls - 3.5L EcoBoost (BM), Description and Operation). Recreating the Fault.

BN2 CARRY OUT THE NETWORK TEST

- Note: When using FDRS (Ford Diagnosis and Repair System) , the scan tool attempts to communicate with the PCM (powertrain control module) first. After establishing communication with the PCM (powertrain control module) , the scan tool then attempts to communicate with all modules on the vehicle. If an FDRS (Ford Diagnosis and Repair System) session cannot be established, FDRS (Ford Diagnosis and Repair System) may state no communication can be established with the PCM (powertrain control module) :
  - Choose No when the scan tool prompts whether or not to retry communication.
  - Enter a PCM (powertrain control module) part number, tear tag or calibration number to identify the vehicle and start a session. The PCM (powertrain control module) part number and 4-character tear tag are located on the PCM (powertrain control module) .
- Ignition ON.

Do all modules indicate pass?

Yes	GO to BN3

No	GO to BN4

BN3 CHECK FOR A PCM (POWERTRAIN CONTROL MODULE) CONCERN

- Using a diagnostic scan tool, carry out the PCM (powertrain control module) self-test.

No	REPAIR the circuit.

BN6 CHECK THE INVERTER SYSTEM CONTROLLER (ISC) VPWR CIRCUITS FOR VOLTAGE

- Ignition OFF.
- Connect a 5A fused jumper between:

Positive Lead	Measurement / Action	Negative Lead
C1458A-K3		Ground

- Ignition ON.
- Measure and record:

Positive Lead	Measurement / Action	Negative Lead
C1458A-L2	V	Ground
C1458A-M2	V	Ground

Are the voltages greater than 10.5 volts?

Yes	GO to BN7

No	REPAIR the circuit.

BN7 CHECK THE INVERTER SYSTEM CONTROLLER (ISC) GROUND CIRCUITS FOR AN OPEN

- Ignition OFF.
- Measure and record:

Possible Sources

- Communications network concern
- ABS (anti-lock brake system) module

BO1 CARRY OUT A VEHICLE INSPECTION AND VERIFY THE SELF-TEST PROCEDURE

NOTE

If the self-test or communication concern occurred after a failed or 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 electrical damage:
  - harness wiring
  - electrical connections
- Verify the correct procedure was used to activate the self-test for the scan tool.
  REFER to: Electronic Engine Controls - System Operation and Component Description(303-14C Electronic Engine Controls - 3.5L EcoBoost (BM), Description and Operation).
  Recreating the Fault.

Was the correct self-test procedure used?

Yes	GO to BO2

No	REFER to: Electronic Engine Controls - System Operation and Component Description(303-14C Electronic Engine Controls - 3.5L EcoBoost (BM), Description and Operation). Recreating the Fault.

BO2 CARRY OUT THE NETWORK TEST

- Note: When using FDRS (Ford Diagnosis and Repair System) , the scan tool attempts to communicate with the PCM (powertrain control module) first. After establishing communication with the PCM (powertrain control module) , the scan tool then attempts to communicate with all modules on the vehicle. If an FDRS (Ford Diagnosis and Repair System) session cannot be established, FDRS (Ford Diagnosis and Repair System) may state no communication can be established with the PCM (powertrain control module) :
  - Choose No when the scan tool prompts whether or not to retry communication.
  - Enter a PCM (powertrain control module) part number, tear tag or calibration number to identify the vehicle and start a session. The PCM (powertrain control module) part number and 4-