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1994 FORD Scorpio Sedan OEM Service and Repair Workshop Manual

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Yes	GO to AG5

No	REPAIR the short circuit. CLEAR the diagnostic trouble codes (DTCs) and REPEAT the self-test.

AG5 CHECK THE INVERTER SYSTEM CONTROLLER (ISC) CIRCUITS FOR SHORTED TOGETHER

- Measure and record:

Positive Lead	Measurement / Action	Negative Lead
C1458A-A1	Ω	C1458A-B1
C1458A-A1	Ω	C1458A-A2
C1458A-A1	Ω	C1458A-B2
C1458A-A1	Ω	C1458A-A3
C1458A-A1	Ω	C1458A-B3
C1458A-B1	Ω	C1458A-A2
C1458A-B1	Ω	C1458A-B2

- Ignition ON.
- Measure and record:

Positive Lead	Measurement / Action	Negative Lead
C1458A-A1	V	Ground
C1458A-B1	V	Ground
C1458A-A2	V	Ground
C1458A-B2	V	Ground
C1458A-A3	V	Ground
C1458A-B3	V	Ground

Is any voltage present?

Yes	REPAIR the short circuit. CLEAR the diagnostic trouble codes (DTCs) and REPEAT the self-test.

No	GO to AG7

AG7 CHECK FOR CORRECT INVERTER SYSTEM CONTROLLER (ISC) OPERATION

- Ignition OFF.

DTC (diagnostic trouble code)	Description	Fault Trigger Condition
SOBDMC (secondary on-board diagnostic control module C) P0C65:00	Generator Position Sensor Circuit 'A' Range/Performance: No Sub Type Information	This DTC (diagnostic trouble code) sets when a generator resolver failure is detected.

Possible Sources

- Wiring, terminals or connectors
- Inverter System Controller (ISC)

AH1 CHECK THE INVERTER SYSTEM CONTROLLER (ISC) CALIBRATION LEVEL

- Verify the Inverter System Controller (ISC) is at the latest calibration level.

Is the Inverter System Controller (ISC) at the latest calibration level?

Yes	GO to AH2

No	UPDATE the Inverter System Controller (ISC) to the latest calibration level.

AH2 CHECK FOR DIAGNOSTIC TROUBLE CODES (DTCS)

- Ignition ON.
- Using a diagnostic scan tool, run the Inverter System Controller (ISC) self-test.

Was DTC (diagnostic trouble code) P0C65 read from the Inverter System Controller (ISC)?

Yes	GO to AH3

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.

AH3 VISUAL INSPECTION OF THE LOW VOLTAGE SYSTEM

- Ignition OFF.
- De-energize the high voltage system.

Possible Sources

- Wiring, terminals or connectors
- Front module (electric motor)
- Inverter System Controller (ISC) calibration

AI1 CHECK THE INVERTER SYSTEM CONTROLLER (ISC) CALIBRATION LEVEL

NOTE

Wiring overlays or repinning of circuits are NOT appropriate for DTC P0C5A due to risk of hardware damage.

- Verify the Inverter System Controller (ISC) is at the latest calibration level.

Is the Inverter System Controller (ISC) at the latest calibration level?

Yes	GO to AI2

No	UPDATE the Inverter System Controller (ISC) to the latest calibration level.

AI2 CHECK FOR DTC (DIAGNOSTIC TROUBLE CODE) P0C5A

- Ignition ON.
- Using a diagnostic scan tool, retrieve all Inverter System Controller (ISC) diagnostic trouble codes (DTCs).

Was DTC (diagnostic trouble code) P0C5A read from the Inverter System Controller (ISC)?

Yes	GO to AI3

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.

AI3 VISUAL INSPECTION OF THE LOW VOLTAGE SYSTEM

- Ignition OFF.
- De-energize the high voltage system.

- Measure and record:

Positive Lead	Measurement / Action	Negative Lead
C1458A-B3	Ω	C1280-6

Is the resistance less than 5 ohms?

Yes	GO to AI6

No	REPLACE the harness. CLEAR the diagnostic trouble codes (DTCs) and REPEAT the self-test.

AI6 CHECK FOR CORRECT INVERTER SYSTEM CONTROLLER (ISC) OPERATION

- Disconnect and inspect all Inverter System Controller (ISC) 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 Inverter System Controller (ISC) connectors. Make sure they seat and latch correctly.
- Connect Transmission Sensor Speed Resolver C1280 .
- Ignition ON.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	CHECK OASIS (Online Automotive Service Information System) for any applicable service articles: TSB (Technical Service Bulletin) , GSB (General Service Bulletin) , SSM (special service message) or FSA (Field Service Action) . If a service article exists for this concern, DISCONTINUE this test and FOLLOW the service article instructions. If no service articles address this concern, GO to Pinpoint Test V(In step V3 continue through to step V4 regardless of DTC presence.)

No	The system is operating correctly at this time. The concern may have been caused by module

No	UPDATE the Inverter System Controller (ISC) to the latest calibration level.

AJ2 CHECK FOR DTC (DIAGNOSTIC TROUBLE CODE) P0C5C

- Ignition ON.
- Using a diagnostic scan tool, retrieve all Inverter System Controller (ISC) diagnostic trouble codes (DTCs).

Was DTC (diagnostic trouble code) P0C5C read from the Inverter System Controller (ISC)?

Yes	GO to AJ3

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.

AJ3 VISUAL INSPECTION OF THE LOW VOLTAGE SYSTEM

- Ignition OFF.
- De-energize the high voltage system.
  REFER to: High Voltage System De-energizing - Full Hybrid Electric Vehicle (FHEV)(414-03A High Voltage Battery, Mounting and Cables, General Procedures).
- Remove the high voltage traction battery service disconnect plug.
- Visually inspect all the low voltage cables.
- Make sure all the low voltage connectors are correctly and securely connected.
- Examine all the low voltage cables and connectors for damaged, burned or overheated insulation and loose or broken connections.

Is a concern present?

Yes	REPAIR as necessary. CLEAR the diagnostic trouble codes (DTCs) and REPEAT the self-test.

No	GO to AJ4

AJ4 CHECK THE GS1 CIRCUIT FOR A SHORT TO GROUND

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 AK : P0C5D

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) P0C5D:00	Drive Motor 'B' Position Sensor Circuit 'A' High: No Sub Type Information	This DTC (diagnostic trouble code) sets when a short to power is detected in the generator resolver circuit.

Possible Sources

- Wiring, terminals or connectors
- Front module (electric motor)
- Inverter System Controller (ISC) calibration

AK1 CHECK THE INVERTER SYSTEM CONTROLLER (ISC) CALIBRATION LEVEL

NOTE

Wiring overlays or repinning of circuits are NOT appropriate for DTC P0C5D due to risk of hardware damage.

- Verify the Inverter System Controller (ISC) is at the latest calibration level.

Is the Inverter System Controller (ISC) at the latest calibration level?

Yes	GO to AK2

- Disconnect Transmission Sensor Speed Resolver C1280 .
- Disconnect Inverter System Controller (ISC) C1458A .
- Ignition ON.
- Measure and record:

Positive Lead	Measurement / Action	Negative Lead
C1458A-A3	V⎓	Ground

Is any voltage present?

Yes	REPLACE the harness. CLEAR the diagnostic trouble codes (DTCs) and REPEAT the self-test.

No	GO to AK5

AK5 CHECK FOR CORRECT INVERTER SYSTEM CONTROLLER (ISC) OPERATION

- Disconnect and inspect all Inverter System Controller (ISC) 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 Inverter System Controller (ISC) connectors. Make sure they seat and latch correctly.
- Connect Transmission Sensor Speed Resolver C1280 .
- Ignition ON.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	CHECK OASIS (Online Automotive Service Information System) for any applicable service articles: TSB (Technical Service Bulletin) , GSB (General Service Bulletin) , SSM (special service message) or FSA (Field Service Action) . If a service article exists for this concern, DISCONTINUE this test and FOLLOW the service article instructions. If no service articles address this concern, GO to Pinpoint Test V(In step V3 continue through to step V4 regardless of DTC presence.)

No	UPDATE the Inverter System Controller (ISC) to the latest calibration level.

AL2 CHECK FOR DTC (DIAGNOSTIC TROUBLE CODE) P0C66

- Ignition ON.
- Using a diagnostic scan tool, retrieve all Inverter System Controller (ISC) diagnostic trouble codes (DTCs).

Was DTC (diagnostic trouble code) P0C66 read from the Inverter System Controller (ISC)?

Yes	GO to AL3

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.

AL3 VISUAL INSPECTION OF THE LOW VOLTAGE SYSTEM

- Ignition OFF.
- De-energize the high voltage system.
  REFER to: High Voltage System De-energizing - Full Hybrid Electric Vehicle (FHEV)(414-03A High Voltage Battery, Mounting and Cables, General Procedures).
- Remove the high voltage traction battery service disconnect plug.
- Visually inspect all the low voltage cables.
- Make sure all the low voltage connectors are correctly and securely connected.
- Examine all the low voltage cables and connectors for damaged, burned or overheated insulation and loose or broken connections.

Is a concern present?

Yes	REPAIR as necessary. CLEAR the diagnostic trouble codes (DTCs) and REPEAT the self-test.

No	GO to AL4