

Your Ultimate Source for OEM Repair Manuals

FactoryManuals.net is a great resource for anyone who wants to save money on repairs by doing their own work. The manuals provide detailed instructions and diagrams that make it easy to understand how to fix a vehicle.

1997 FORD Scorpio Sedan OEM Service and Repair Workshop Manual

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| DTC (diagnostic trouble code) | Description | Fault Trigger Condition |
|---|--|--|
| SOBDMC (secondary on-board diagnostic control module C) P0A47:00 | Drive Motor 'B' Position Sensor Circuit Low: No Sub Type Information | This DTC (diagnostic trouble code) sets when a resolver wiring fault is detected. |
| SOBDMC (secondary on-board diagnostic control module C) P0C64:00 | Generator Position Sensor Circuit A: No Sub Type Information | This DTC (diagnostic trouble code) sets when a generator resolver failure is detected. |

Possible Sources

- Wiring, terminals or connectors
- Front Module (Electric Motor)
- Inverter System Controller (ISC)

V1 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 V2 |
|-----|--------------------------|

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

V2 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 the low voltage cables between the Inverter System Controller (ISC) and the electric motor.
- 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?

C1280 pin 3, component side

C1280 pin 4, component side

Is the resistance between 8 and 18 ohms?

Yes

GO to [V5](#)

No

INSTALL a new electric motor.

REFER to: [Hybrid Drive Unit](#)

(303-01F Electric Motor - 3.5L V6 PowerBoost (CN), Removal and Installation).

CLEAR the Inverter System Controller (ISC) diagnostic trouble codes (DTCs). REPEAT the self-test.

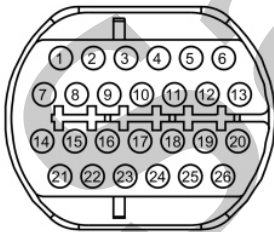
V5 CHECK THE TRANSMISSION SENSOR SPEED RESOLVER RESISTANCES

- Ignition OFF.
- Disconnect Transmission Sensor Speed Resolver C1280 .
- Measure and record:

Positive Lead

Measurement /
Action

Negative Lead



E305010

C1280 pin 2, component side

Ω



E305010

C1280 pin 6, component side

Is the resistance between 32 and 42 ohms?

Yes

GO to [V6](#)

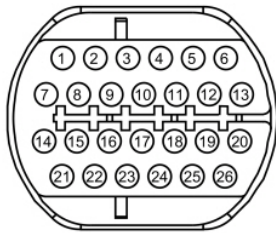
No

INSTALL a new electric motor.

Positive Lead

Measurement /
Action

Negative Lead



E305010

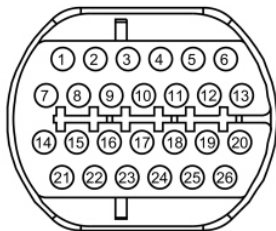
Ω



E305010

C1280 pin 3, component side

C1280 pin 2, component side



E305010

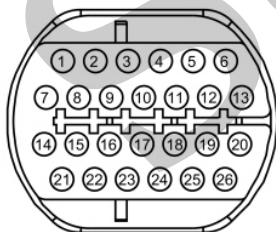
Ω



E305010

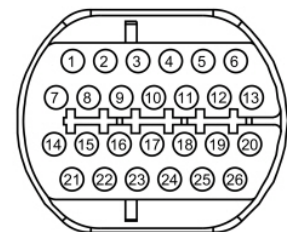
C1280 pin 3, component side

C1280 pin 1, component side



E305010

Ω



E305010

C1280 pin 1, component side

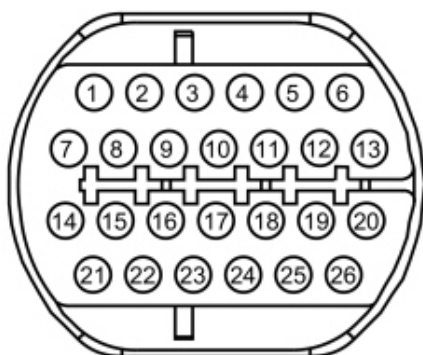
C1280 pin 2, component side

Are the resistances greater than 10K ohms?

Yes

GO to [V8](#)

C1280 pin 3, component side



E305010

Ω

Ground

C1280 pin 1, component side

Are the resistances greater than 10K ohms?

Yes

GO to [V9](#)

No

INSTALL a new electric motor.

REFER to: [Hybrid Drive Unit](#)

(303-01F Electric Motor - 3.5L V6 PowerBoost (CN), Removal and Installation).

CLEAR the Inverter System Controller (ISC) diagnostic trouble codes (DTCs). REPEAT the self-test.

V9 CHECK THE TRANSMISSION SENSOR SPEED RESOLVER CIRCUITS FOR AN OPEN

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

| Positive Lead | Measurement / Action | Negative Lead |
|---------------|----------------------|---------------|
| C1280-3 | Ω | C1458A-A1 |

| | | |
|---------|----------|---------|
| C1280-1 | Ω | C1280-2 |
|---------|----------|---------|

Are the resistances greater than 10K ohms?

| | |
|------------|---------------------------|
| Yes | GO to V11 |
|------------|---------------------------|

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

V11 CHECK THE TRANSMISSION SENSOR SPEED RESOLVER CIRCUITS FOR A SHORT TO GROUND

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

| Positive Lead | Measurement / Action | Negative Lead |
|---------------|----------------------|---------------|
| C1280-3 | Ω | Ground |
| C1280-4 | Ω | Ground |
| C1280-1 | Ω | Ground |
| C1280-5 | Ω | Ground |
| C1280-2 | Ω | Ground |

| | | |
|---------|---|--------|
| C1280-6 |  | Ground |
|---------|---|--------|

Is any voltage present?

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

| | |
|-----------|---------------------------|
| No | GO to V13 |
|-----------|---------------------------|

V13 CHECK THE TRANSMISSION SENSOR SPEED RESOLVER CIRCUITS FOR A SHORT TO THE SHIELD

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

| Positive Lead | Measurement / Action | Negative Lead |
|---------------|----------------------|---------------|
| C1458A-A1 | Ω | C1458A-A4 |
| C1458A-B1 | Ω | C1458A-A4 |
| C1458A-A2 | Ω | C1458A-A4 |
| C1458A-B2 | Ω | C1458A-A4 |
| C1458A-A3 | Ω | C1458A-A4 |

V15 CHECK FOR APPLICABLE SERVICE ARTICLES

- 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) .

Was a service article found?

| | |
|------------|--|
| Yes | DISCONTINUE this test and FOLLOW the service article instructions. |
| No | REFER to: Powertrain Control Module (PCM) Input and Output Controls (303-14E Electronic Engine Controls - 3.5L V6 PowerBoost (CN), Diagnosis and Testing). Pinpoint Test Z. |

PINPOINT TEST W : P0A4C

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) P0A4C:00 | Generator Position Sensor Circuit Range/Performance: No Sub Type Information | This DTC (diagnostic trouble code) sets when an error is detected with the position reading's rationality check. |

Possible Sources

- Inverter System Controller (ISC)

NOTE

Wiring overlays or repinning of circuits are NOT appropriate for DTC P0A4D due to risk of hardware damage.

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

| Positive Lead | Measurement / Action | Negative Lead |
|---------------|----------------------|---------------|
| C1458A-A1 | Ω | C1280-3 |
| C1458A-B1 | Ω | C1280-4 |
| C1458A-A2 | Ω | C1280-1 |
| C1458A-B2 | Ω | C1280-5 |
| C1458A-A3 | Ω | C1280-2 |
| C1458A-B3 | Ω | C1280-6 |

Are the resistances less than 5 ohms?

Yes

GO to [X2](#)

- Measure and record:

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

Are the resistances greater than 10K ohms?

| | |
|------------|--------------------------|
| Yes | GO to X3 |
|------------|--------------------------|

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

X3 CHECK THE INVERTER SYSTEM CONTROLLER (ISC) CIRCUITS FOR SHORTED TOGETHER

- Measure and record: