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2005 FORD Explorer Sport Trac OEM Service and Repair Workshop Manual

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C1836-1	Ω	C1551T-69

- For the ISSB sensor, measure:

Positive Lead	Measurement / Action	Negative Lead
C1837-1	Ω	C1551T-70

Is the resistance less than 3 ohms on the suspect circuit?

Yes	GO to D12

No	There is a terminal fitment issue. REPAIR any loose, damaged or bent terminals.

D12 CHECK THE SENSOR VREF CIRCUIT FOR VOLTAGE AT THE SENSOR

- Connect PCM (powertrain control module) C1551T .
- Ignition ON.
- For the OSS (output shaft speed) sensor, measure:

Positive Lead	Measurement / Action	Negative Lead
C1107-2	V	Ground

- For the TSS (turbine shaft speed) sensor, measure:

Positive Lead	Measurement / Action	Negative Lead
C3106-2	V	Ground

Normal Operation and Fault Conditions The transmission fluid auxiliary pump keeps the transmission fluid circulating and the transmission engaged during auto start-stop events. The transmission fluid auxiliary pump has an internal microprocessor and communicates with the PCM (powertrain control module) over a PWM (pulse width modulation) circuit with a frequency of 150 Hz and a duty cycle range of 10% to 90%.

DTC Fault Trigger Conditions

DTC (diagnostic trouble code)	Description	Fault Trigger Condition
PCM (powertrain control module) P0C28:00	Electric/Auxiliary Transmission Fluid Pump 'A' Motor Current High: No Sub Type Information	This DTC (diagnostic trouble code) indicates the transmission fluid auxiliary pump communication is OK, the frequency is between 125 Hz and 175 Hz, but a high current is detected (20% to 25% duty cycle).
PCM (powertrain control module) P0C29:00	Electric/Auxiliary Transmission Fluid Pump 'A' Driver Circuit Performance: No Sub Type Information	This DTC (diagnostic trouble code) indicates the transmission fluid auxiliary pump communication is OK, the frequency is between 125 Hz and 175 Hz, but a high current is detected and the pump speed is out of range (75% to 80% duty cycle)
PCM (powertrain control module) P0C2A:00	Electric/Auxiliary Transmission Fluid Pump 'A' Motor Stalled: No Sub Type Information	This DTC (diagnostic trouble code) indicates the PCM (powertrain control module) commanded the transmission fluid auxiliary pump on but did not detect a corresponding increase in pump speed, indicating a stalled pump motor (35% to 40% duty cycle).
PCM (powertrain control module) P0C2C:00	Electric Transmission Fluid Pump Control Module Feedback Signal Range/Performance: No Sub Type Information	This DTC (diagnostic trouble code) indicates the transmission fluid auxiliary pump frequency is between 125 and 175Hz but has an invalid duty cycle, or the frequency is outside of the 125-175Hz range. This can be caused by a loss of power to the transmission fluid auxiliary pump.
PCM (powertrain control module) P0C2D:00	Electric Transmission Fluid Pump Control Module Feedback Signal Low: No Sub Type Information	This DTC (diagnostic trouble code) indicates the transmission fluid auxiliary pump duty cycle is less than 10%. This DTC can set while using output state control to command a pump speed outside of normal operating parameters.

- Inspect the connector for damaged or pushed out terminals, corrosion, loose wires and missing or damaged seals.
- Ignition ON.
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C168A-10	V	Ground

Is the voltage greater than 11 volts?

Yes	GO to E3

No	VERIFY the BJB (battery junction box) fuse F67 (20A) is OK. If the fuse is OK, REFER to the Wiring Diagrams manual to identify and repair an open circuit. If the fuse is not OK, REFER to the Wiring Diagrams manual to identify and repair a short to ground.

E3 CHECK THE TRANSMISSION FLUID AUXILIARY PUMP TASV CIRCUIT FOR VOLTAGE

E5 CHECK THE TRANSMISSION FLUID AUXILIARY PUMP TASV CIRCUIT FOR A SHORT TO GROUND

- Measure:

Positive Lead	Measurement / Action	Negative Lead
C168A-12	Ω	Ground

Is the resistance greater than 10,000 ohms?

Yes	 Guided Routine available in the on-line Workshop Manual. After programming the new PCM (powertrain control module), CARRY OUT the transmission strategy download. REFER to: Transmission Strategy Download (307-01A Automatic Transmission - 10-Speed Automatic Transmission – 10R80, General Procedures).

No	REPAIR the short to ground.

E6 CHECK THE TRANSMISSION FLUID AUXILIARY PUMP GROUND CIRCUIT FOR AN OPEN

- Ignition OFF.
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C168A-17	Ω	Ground

Is the resistance less than 3 ohms?

E8 CHECK THE TRANSMISSION FLUID AUXILIARY PUMP ATFPC AND ATFPM CIRCUITS FOR A SHORT TO GROUND

- Measure:
  ATFPC

Positive Lead	Measurement / Action	Negative Lead
C168A-18	Ω	Ground

ATFPM

Positive Lead	Measurement / Action	Negative Lead
C168A-19	Ω	Ground

Are the resistances greater than 10,000 ohms?

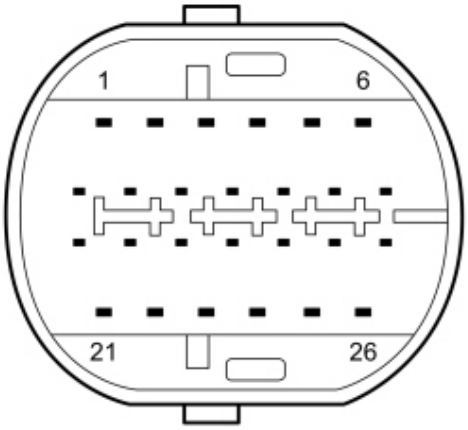
Yes	GO to E9

No	REPAIR the short to ground.

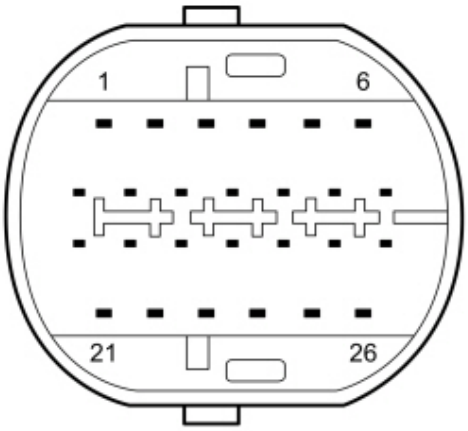
E9 CHECK THE TRANSMISSION FLUID AUXILIARY PUMP ATFPC AND ATFPM CIRCUITS FOR A SHORT TO POWER

- Ignition ON.
- Measure:
  ATFPC

Positive Lead	Measurement / Action	Negative Lead
C168A-18	V	Ground

C1792-4	Ω	 E275612 Transmission component side, pin 18

ATFPM

Positive Lead	Measurement / Action	Negative Lead
C1792-5	Ω	 E275612 Transmission component side, pin 19

Are the resistances less than 3 ohms?

Yes	GO to E11

E12 CHECK THE TRANSMISSION CASE WIRING HARNESS TRANSMISSION FLUID AUXILIARY PUMP POWER CIRCUITS

- Ignition OFF.
- Connect Transmission vehicle harness C168A .
- Connect PCM (powertrain control module) C1551T .
- Connect BJB (battery junction box) fuse F67 (20A) (if previously disconnected).
- Ignition ON.
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C1792-1	V	Ground
C1792-3	V	Ground

Are the voltages greater than 11 volts?

Yes	GO to E13

No	INSTALL a new transmission case wiring harness. REFER to: Transmission Internal Wiring Harness (307-01A Automatic Transmission - 10-Speed Automatic Transmission – 10R80, Removal and Installation).

E13 CHECK THE TRANSMISSION CASE WIRING HARNESS TRANSMISSION FLUID AUXILIARY PUMP GROUND CIRCUIT

- Ignition ON.
- Measure:

Positive Lead	Measurement / Action	Negative Lead

PCM (powertrain control module) P0C27:00	Electric/Auxiliary Transmission Fluid Pump 'A' Motor Current Low: No Sub Type Information	This DTC (diagnostic trouble code) indicates the transmission fluid auxiliary pump communication is OK, the frequency is between 125 Hz and 175 Hz, but a low current is detected (10% to 15% duty cycle). Possible causes are a low transmission fluid level or leaking pump seals.
PCM (powertrain control module) P175A:00	Transmission Fluid Over Temperature Condition - Electric Transmission Fluid Pump Disabled: No Sub Type Information	This DTC (diagnostic trouble code) sets if the auxiliary pump communication is OK, the frequency is between 130 Hz and 170 Hz, but an over temperature condition is detected (30% to 34% duty cycle). This DTC (diagnostic trouble code) can be caused by high transmission fluid temperatures.

Possible Sources

- Low transmission fluid level
- Transmission fluid auxiliary pump seals
- Transmission fluid auxiliary pump

F1 CHECK THE TRANSMISSION FLUID LEVEL

- Check the transmission fluid level.
  REFER to: Transmission Fluid Level Check(307-01A Automatic Transmission - 10-Speed Automatic Transmission – 10R80, General Procedures).

Is the transmission fluid level correct?

Yes	GO to F2

No	CORRECT the transmission fluid to the proper level, clear the DTC (diagnostic trouble code) and road test the vehicle. If the DTC (diagnostic trouble code) returns, GO to F2

F2 CHECK THE PCM (POWERTRAIN CONTROL MODULE) FOR DIAGNOSTIC TROUBLE CODES (DTCS)

- Ignition ON.
- Using a diagnostic scan tool, retrieve all diagnostic trouble codes (DTCs) from the PCM (powertrain control module) .

Is DTC (diagnostic trouble code) P0B0D, P0C27 and/or P175A present?

F5 CHECK THE TRANSMISSION FLUID AUXILIARY PUMP SEALS

- Drain the transmission fluid and remove the transmission fluid pan.
  REFER to: Transmission Fluid Pan, Gasket and Filter(307-01A Automatic Transmission - 10-Speed Automatic Transmission – 10R80, Removal and Installation).
- Remove the transmission fluid auxiliary pump tube and inspect the seals.

Are the transmission fluid auxiliary pump seals OK?

Yes	INSTALL a new transmission fluid auxiliary pump. REFER to: Transmission Fluid Auxiliary Pump (307-01A Automatic Transmission - 10-Speed Automatic Transmission – 10R80, Removal and Installation).

No	INSTALL new seals on the transmission fluid auxiliary pump tube. REFER to: Transmission Fluid Auxiliary Pump (307-01A Automatic Transmission - 10-Speed Automatic Transmission – 10R80, Removal and Installation).

F6 CHECK FOR TRANSMISSION OVER TEMPERATURE DIAGNOSTIC TROUBLE CODES (DTCS)

- Ignition ON.
- Using a diagnostic scan tool, retrieve all continuous memory diagnostic trouble codes (CMDTCs) from the PCM (powertrain control module) .

Is DTC (diagnostic trouble code) P0218 and/or P1783 present?

Yes	RESOLVE those diagnostic trouble codes (DTCs) first. REFER to the DTC (diagnostic trouble code) chart.

No	GO to F7

F7 RECHECK FOR DTC (DIAGNOSTIC TROUBLE CODE) P175A

- Allow the transmission to cool.
- Ignition ON.
- Using a diagnostic scan tool, clear all diagnostic trouble codes (DTCs) from the PCM (powertrain control module) .