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## 2001 FORD Excursion OEM Service and Repair Workshop Manual

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<b>No</b>	GO to <a href="#">C3</a>
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### C3 CHECK THE TR (TRANSMISSION RANGE) SENSOR VREF AND SIGNAL CIRCUITS FOR AN OPEN

- Ignition OFF.
- Disconnect PCM (powertrain control module) C1381T .
- Inspect the connector for damaged or pushed out terminals, corrosion, loose wires and missing or damaged seals.
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C168A-5	$\Omega$	C1381T-86
C168A-6	$\Omega$	C1381T-85
C168A-8	$\Omega$	C1381T-50

**Are the resistances less than 3 ohms?**

<b>Yes</b>	GO to <a href="#">C4</a>
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<b>No</b>	REPAIR the open circuit.
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### C4 CHECK THE TR (TRANSMISSION RANGE) SENSOR VREF AND SIGNAL CIRCUITS FOR A SHORT TO GROUND

- Measure:


Positive Lead	Measurement / Action	Negative Lead
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<b>Yes</b>	REPAIR the short to power.
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<b>No</b>	 <p>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: <a href="#">Transmission Strategy Download</a> (307-01A Automatic Transmission - 10-Speed Automatic Transmission - 10R80, General Procedures).</p>
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**C6 CHECK THE TR (TRANSMISSION RANGE) SENSOR GROUND CIRCUIT**

- Ignition ON.
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C168A-8		C168A-20

**Is the voltage approximately 9 volts?**

<b>Yes</b>	GO to <a href="#">C9</a>
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<b>No</b>	GO to <a href="#">C7</a>
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**C7 CHECK THE TR (TRANSMISSION RANGE) SENSOR GROUND CIRCUIT FOR AN OPEN**

- Ignition OFF.
- Disconnect PCM (powertrain control module) C1381T .

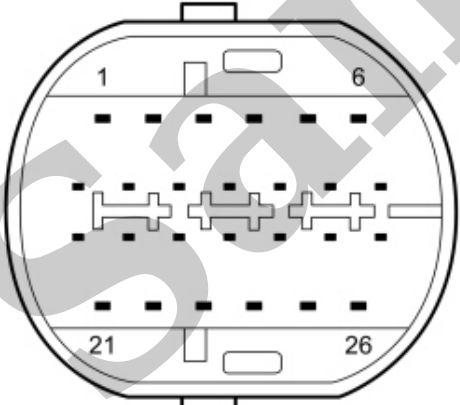
After programming the new PCM (powertrain control module)  
, CARRY OUT the transmission strategy download.

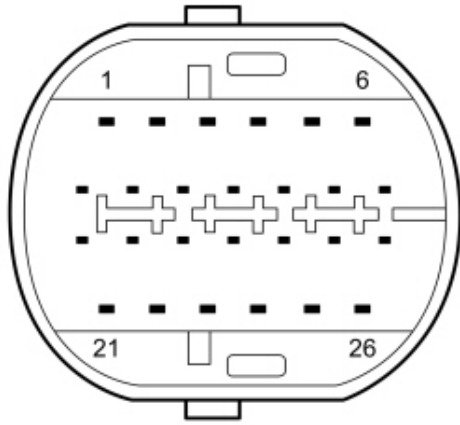
REFER to: [Transmission Strategy Download](#)

(307-01A Automatic Transmission - 10-Speed Automatic Transmission – 10R80, General Procedures).

**C9 CHECK THE TRANSMISSION INTERNAL WIRING HARNESS TR (TRANSMISSION RANGE) SENSOR CIRCUITS FOR AN OPEN**

- Ignition OFF.
- 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).
- Disconnect TR (transmission range) sensor C167 .
- Measure:

Positive Lead	Measurement / Action	Negative Lead
 <p>E275612</p> <p>Transmission component side, pin 5</p>	$\Omega$	C167-2



E275612

Transmission component side, pin 20

$\Omega$

C167-1

**Are the resistances less than 3 ohms?**

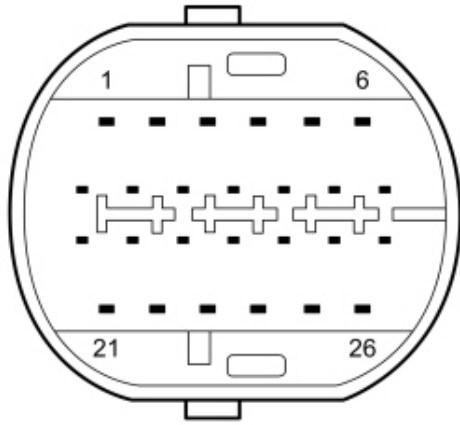
<b>Yes</b>	GO to <a href="#">C10</a>
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<b>No</b>	<p>INSTALL a new transmission case harness.          REFER to: <a href="#">Transmission Internal Wiring Harness</a>          (307-01A Automatic Transmission - 10-Speed Automatic Transmission – 10R80, Removal and Installation).</p>
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**C10 CHECK THE TRANSMISSION INTERNAL WIRING HARNESS TR (TRANSMISSION RANGE) SENSOR CIRCUITS FOR A SHORT TO GROUND**

- Measure:

Positive Lead	Measurement / Action	Negative Lead
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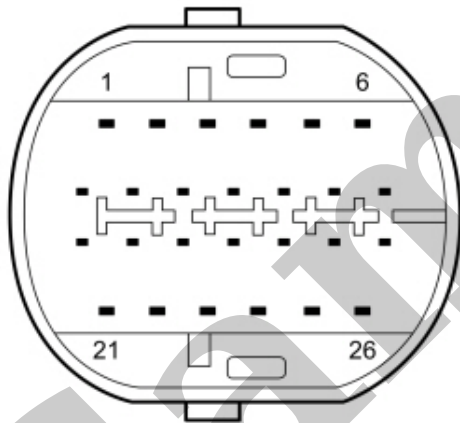


E275612

Transmission component side, pin 8

$\Omega$

Ground



E275612

Transmission component side, pin 20

$\Omega$

Ground

**Are the resistances greater than 10,000 ohms?**

**Yes**

GO to [C11](#)

**No**

INSTALL a new transmission case harness.

REFER to: [Transmission Internal Wiring Harness](#)


(307-01A Automatic Transmission - 10-Speed Automatic Transmission – 10R80, Removal and Installation).

<b>Yes</b>	GO to <a href="#">C13</a>
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<b>No</b>	There is a terminal fitment issue. REPAIR any loose, damaged or bent terminals.
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**C13 CHECK THE TR (TRANSMISSION RANGE) SENSOR GROUND CIRCUIT THROUGH THE BULKHEAD CONNECTOR**

- Ignition ON.
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C167-4		C167-1

**Is the voltage approximately 9 volts?**

<b>Yes</b>	<p>INSTALL a new TR (transmission range) sensor.          REFER to: <a href="#">Transmission Range (TR) Sensor</a>          (307-01A Automatic Transmission - 10-Speed Automatic Transmission – 10R80, Removal and Installation).</p>
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<b>No</b>	There is a terminal fitment issue. REPAIR any loose, damaged or bent terminals.
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**PINPOINT TEST D : TSS, OSS, ISSA, ISSB SENSORS (ELECTRICAL)**

Refer to Wiring Diagrams Cell 30 for schematic and connector information.

**Normal Operation and Fault Conditions TSS Sensor** The TSS (turbine shaft speed) sensor is a Hall-effect type sensor that provides a signal to the PCM (powertrain control module) that changes in frequency as the rotating speed of the planetary carrier No. 2 varies. The PCM (powertrain control module) compares the TSS (turbine shaft speed) sensor signal with the engine speed information to determine the amount of slip occurring in the torque converter. The PCM (powertrain control module) also compares the TSS (turbine shaft speed) sensor signal with the OSS (output shaft speed) sensor signal to determine the gear ratio

PCM (powertrain control module) P0723:00	Output Shaft Speed Sensor Circuit Intermittent: No Sub Type Information	This DTC (diagnostic trouble code) indicates an OSS (output shaft speed) sensor fault, but the fault did not last long enough to set a more specific DTC (diagnostic trouble code) .
PCM (powertrain control module) P077D:00	Output Shaft Speed Sensor Circuit High: No Sub Type Information	This DTC (diagnostic trouble code) indicates a short to power in the OSS (output shaft speed) sensor circuit.
PCM (powertrain control module) P0791:00	Intermediate Shaft Speed Sensor 'A' Circuit: No Sub Type Information	This DTC (diagnostic trouble code) indicates an open circuit or a short to ground in the intermediate shaft speed A (ISSA) sensor circuit.
PCM (powertrain control module) P0793:00	Intermediate Shaft Speed Sensor 'A' Circuit No Signal: No Sub Type Information	This DTC (diagnostic trouble code) illuminates the wrench light in conjunction with P0791, P07C5, and/or P07C6. Resolve the more specific DTC (diagnostic trouble code) first.
PCM (powertrain control module) P0794:00	Intermediate Shaft Speed Sensor 'A' Circuit Intermittent: No Sub Type Information	This DTC (diagnostic trouble code) indicates an intermediate shaft speed A (ISSA) sensor fault, but the fault did not last long enough to set a more specific DTC (diagnostic trouble code) .
PCM (powertrain control module) P07BF:00	Input/Turbine Shaft Speed Sensor 'A' Circuit Low: No Sub Type Information	This DTC (diagnostic trouble code) indicates a short to ground in the TSS (turbine shaft speed) sensor circuit.
PCM (powertrain control module) P07C0:00	Input/Turbine Shaft Speed Sensor 'A' Circuit High: No Sub Type Information	This DTC (diagnostic trouble code) indicates a short to power in the TSS (turbine shaft speed) sensor circuit.
PCM (powertrain control module) P07C5:00	Intermediate Shaft Speed Sensor 'A' Circuit Low: No Sub Type Information	This DTC (diagnostic trouble code) indicates a short to ground in the intermediate shaft speed A (ISSA) sensor circuit.
PCM (powertrain control module) P07C6:00	Intermediate Shaft Speed Sensor 'A' Circuit High: No Sub Type Information	This DTC (diagnostic trouble code) indicates a short to power in the intermediate shaft speed A (ISSA) sensor circuit.
PCM (powertrain control module)	Intermediate Shaft Speed Sensor 'B' Circuit Low: No Sub	This DTC (diagnostic trouble code) indicates a short to ground in the intermediate shaft speed B (ISSB)



- Inspect the connector for damaged or pushed out terminals, corrosion, loose wires and missing or damaged seals.
- Ignition ON.
- For the OSS (output shaft speed) and ISSA sensors, measure:

Positive Lead	Measurement / Action	Negative Lead
C168A-7	$\bar{V}$	Ground

- For the TSS (turbine shaft speed) and ISSB sensors, measure:

Positive Lead	Measurement / Action	Negative Lead
C168A-8	$\bar{V}$	Ground

**Is the voltage approximately 9 volts on the suspect circuit?**

<b>Yes</b>	GO to <a href="#">D4</a>
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<b>No</b>	GO to <a href="#">D3</a>
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## **D2 CHECK THE SENSOR VREF CIRCUIT FOR AN OPEN**

- Ignition OFF.
- Disconnect PCM (powertrain control module) C1381T .
- Inspect the connector for damaged or pushed out terminals, corrosion, loose wires and missing or damaged seals.
- For the OSS (output shaft speed) and ISSA sensors, measure:

Positive Lead	Measurement / Action	Negative Lead
C168A-7	$\Omega$	C1381T-49



**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.

#### D4 CHECK THE SENSOR SIGNAL RETURN CIRCUIT FOR AN OPEN

- Ignition OFF.
- Disconnect PCM (powertrain control module) C1381T .
- Inspect the connector for damaged or pushed out terminals, corrosion, loose wires and missing or damaged seals.
- For the OSS (output shaft speed) sensor, measure:

Positive Lead	Measurement / Action	Negative Lead
C168A-4	$\Omega$	C1381T-71

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

Positive Lead	Measurement / Action	Negative Lead
C168A-1	$\Omega$	C1381T-68

- For the ISSA sensor, measure: