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Wiring Diagram (fold-out page)
• Before starting a vehicle always be seated in the driver’s seat, move the shift lever to neutral, and set the parking brakes.
• If engine cranks in any other gear than neutral, service your vehicle neutral safety start circuit and start enable relay circuit immediately.
• Before working on a vehicle or leaving the cab with engine running, place the transmission in neutral, set the parking brakes, AND block the wheels.
• Do not release the parking brake or attempt to select a gear until the air pressure is at the correct level.
• For safety reasons, always engage the service brakes when moving the shift lever from neutral to one of the other gear positions.
• When parking the vehicle or leaving the cab, always place the shift lever in neutral and set the parking brakes.
• TOWING: To avoid damage to the transmission during towing, place the transmission in neutral and lift the drive wheels off the ground or disconnect the driveline.

Every effort has been made to ensure the accuracy of all information in this manual. However, Eaton Transmission Division makes no expressed or implied warranty or representation based on the enclosed information. Any errors or omissions may be reported to Training and Publications, Eaton Transmission Division, P.O. Box 4013, Kalamazoo, MI 49003
Complaint Isolation, Verification & Remedy Procedure

Complaint

- Identify System Error via Fault Codes
  - Using: Service Transmission Light
  - Service Transmission Light

Able to Identify Fault Codes

- Utilize Trouble Shooting Guide
  - Fault Code Diagnosis

Observe and Record Symptoms

- Utilize Trouble Shooting Guide
  - Symptom Driven Diagnosis

Isolate System or Component Failure

Follow Trouble Shooting Guide Test Sequences

- PASS

  Follow Trouble Shooting Guide
  Remedy Sequence Instructions

- FAIL

  Proceed to
  Next Step in Trouble Shooting Guide
  as Required for Further Diagnosis or Repair

Re-Test
How To Use this Troubleshooting Guide

The purpose of this manual is to assist in the diagnosis and verification of your electronically managed heavy-duty transmission system. It should be used in conjunction with Eaton Driver Instructions, Illustrated Parts List, Installation Guide, and Service Manual -- as well as OEM service related material.

This guide provides three functions:
1. Service Transmission Light Diagnostics: designed to lead the service technician to the source of a problem through flashing error codes.
2. Performance Evaluation: designed to lead the service technician to the source of a problem through a performance evaluation.
3. Test and remedy Sequences: detailed component testing designed to isolate and resolve system failures.

Service Transmission Light Diagnostics
The Service Transmission indicator light, which is also the torque converter open lamp, assists the mechanic in problem diagnosis via flashing signals equal to Fault Code numbers as listed in the Fault Codes Diagnosis section of this manual.

If a driver reports a degraded mode of operation, advise that the capabilities of the truck should be assessed and then taken to a service site. The transmission temperature should be monitored during the trip to the service site. Examples of potential problem conditions under which a vehicle with a Converter Enhanced Mechanical Transmission can be driven include:

- Transmission fails to lock torque converter, but vehicle can still proceed although speed and/or power is limited.
- Transmission is not able to select all ratios and limits the gears available.

1. Using the Service Transmission Light for Diagnostics: To activate the retrieval of fault codes via the Service Transmission light perform the following steps:

   - Active Codes: Place the Shift Lever in Neutral. Set the parking brakes. Begin with the key in the off position. Turn the key off and back on two (2) times within 5 seconds (OFF/ON/OFF/ON). It is OK if the engine stops, or continues running, however do not re-energize the starter when retrieving Fault Codes as you may cause codes to clear.
   - If there are no active fault codes, then retrieve the intermittent codes.
   - Intermittent codes: Follow instructions for Active Codes, but turn key OFF and ON four (4) times.
   - To clear fault codes: Follow instructions for Active Codes, but turn key OFF and ON six (6) times. Fault codes should be cleared each time the transmission is serviced.
1a. After activating the retrieval of codes, to read transmission errors via the Service Transmission light, observe the sequence of flashes exhibited by the light. The Service Transmission light will flash in coded sequences equal to Fault Codes identified in this manual. A long pause (5 seconds) follows each code before it is repeated, or the next codes sequence is given.

Examples:
- Flash / Pause / Flash = Fault Code 11 System Controller
- Flash - Flash / Pause / Flash - Flash - Flash = Fault Code 23 Engine Speed Sensor
- Flash / Pause / Flash - Long Pause - Flash - Flash / Pause / Flash - Flash - Flash = Fault Codes 11 & 23.

1b. To identify fault codes and applicable tests signalled by the Service Transmission light refer to the Fault code Diagnosis section of this manual.

Symptom Diagnosis
1. Refer to the Performance Evaluation test in this manual.
2. Locate and perform appropriate Test Sequence as indicated by the Performance Evaluation Test.

Before Beginning Diagnostic Procedures
It is possible to “clear” or “reset” the Converter Enhanced Mechanical Electronic Control Unit (ECU) for some transmission errors. If the transmission is not functioning properly try these steps before beginning diagnostic procedures:
1. Stop the vehicle.
2. Place the shift lever in neutral.
3. Set the parking brakes.
4. Turn off the engine/ignition and wait for one minute.
5. Restart the engine.
6. Resume operation.

Test Sequence and Remedy Sequence
1. Locate the correct Test Sequence.
2. Always perform pre-test procedures found at the top of each Test Sequence page before beginning test procedure.
3. Follow test steps in sequence.
4. Go to Remedy Sequence when required.
5. Perform appropriate removal, replacement or adjustment procedures.
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<th>Fault Code</th>
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<td>57</td>
<td>Output Shaft Speed Sensor Test</td>
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</table>
If no fault codes exist perform the Performance Evaluation Test. Locate and perform appropriate test sequence as indicated by the evaluation.
For all questions concerning inspection, removal, replacement, or adjustment procedures, refer to Eaton or OEM Service and Parts Literature.

Measure voltage across vehicle battery terminals [voltage = 12.6 volts].

Is voltage correct?

YES

NO

Refer to Figure A below. Disconnect vehicle interface harness connector J1 from ECU.

Repair low voltage problem. Contact OEM for service information.

Refer to Figure B below. Measure resistance between pins A3, B3, C3, and battery negative terminal [resistance = 0.0-0.4 ohms].

Is resistance correct?

YES

NO

Refer to Figure B on page 9. Measure voltage between harness connector pins A3 and G2 [voltage = battery voltage].

A problem exists with transmission electrical grounds. Contact OEM for service information.

Is voltage correct?

YES

NO

Refer to Figure B below. Measure voltage between harness connector pins A3 and G1 [voltage = 0 volts].

A problem exists in vehicle interface harness or battery supply circuit breaker. Contact service information.

Is voltage correct?

YES

NO

CONTINUE

A problem exists in vehicle interface harness or ignition voltage supply circuit breaker. Contact OEM for service information.
Transmission
Electrical
Test

For all questions concerning inspection, removal, replacement, or adjustment procedures, refer to Eaton or OEM Service and Parts Literature.

**Continuation**

Turn the ignition key "ON".

Refer to Figure B on page 12. Measure the voltage between the harness connector pins A3 and G1 [voltage = battery voltage]. Is voltage correct?

**YES**  **NO**

Turn ignition key "OFF".

A problem exists in vehicle interface harness or ignition voltage supply circuit breaker. Contact OEM for service information.

Refer to Figure B below. Place jumper wire across vehicle interface harness connector pins F1 and A3.

Refer to Figure B below. Measure voltage between harness connector pins B3 and E1 [voltage = battery voltage]. Is voltage correct?

**YES**  **NO**

Refer to Figure A on page 8. Disconnect vehicle interface harness J2 connector from ECU.

A problem exists in transmission power relay or vehicle interface harness. Contact OEM for service information.

Refer to Figure C on page 12. Measure voltage between J1 connector pin B3 and J2 connector pin A3 [voltage = battery voltage]. Is voltage correct?

**YES**  **NO**

Test complete

Repair/replace vehicle interface harness according to OEM service information.
Before beginning test procedure:
1. Set parking brakes.
2. Perform Transmission Electrical Test.
3. Turn ignition key “OFF”.

- Turn ignition key “ON”.
- Does converter open lamp turn “ON”?
  - YES
  - NO

- Perform fault code retrieval as outlined in the introduction section of this manual. Are fault codes present?
  - YES
  - NO

- Perform diagnostics for fault codes as outlined in the fault code diagnostic section of this manual.
- Start the vehicle and allow the air system to reach governor cut off [90-120 psi].
- Allow the transmission temperature to reach operating temperature [180-220°F].
- Fully depress the clutch pedal and place the shift lever in gear. Does the transmission engage gears without harsh grinding?
  - YES
  - NO

- Does the vehicle move?
  - YES
  - NO

- Perform the Inertia Break Test.
- Perform the Interrupt Clutch Solenoid Test and the Hydraulic System Test.
  - YES
  - NO

Continue
Drive the vehicle and increase engine rpm to 1600 rpm. Does the torque converter open lamp turn “OFF”?

- **YES**
  - Perform range shift. Does range shift complete properly?
    - **YES**
      - Perform Hydraulic System Test.
    - **NO**
      - Perform range system evaluation according to Eaton Fuller Air System Troubleshooting and Operation Guide.

- **NO**
  - Perform splitter shift. Does the splitter shift complete properly?
    - **YES**
      - Perform range system evaluation according to Eaton Fuller Air System Troubleshooting and Operation Guide.
    - **NO**
      - Does engine flare after clutch pedal release?
        - **YES**
          - Perform Hydraulic System Test.
        - **NO**
          - Perform splitter system evaluation according to Eaton Fuller Air System Troubleshooting and Operation Guide.

- **YES**
  - Does vehicle have trouble pulling light loads?
    - **YES**
      - Test complete
    - **NO**
      - Perform Hydraulic System Test
For all questions concerning inspection, removal, replacement, or adjustment procedures, refer to Eaton or OEM Service and Parts Literature.

**Before beginning test procedure:**
1. Set parking brakes.
2. Perform Transmission Electrical Test.
3. Turn ignition key “OFF”.

Refer to Figure A below. Disconnect vehicle interface harness J1 connector from the transmission ECU.

Refer to Figure B below. Measure resistance between J1 connector pins F1 and G2 [resistance = 40-90 ohms]. Measure voltage between G2 and vehicle ground, F1 and vehicle electrical ground [should = battery voltage].

**YES | NO**

Replace transmission ECU.

Locate power relay assembly and disconnect vehicle interface harness from relay assembly.

Refer to Figure C below. Measure resistance between pins 85 and 86 of each power relay [resistance = 40-90 ohms]. Is resistance correct?

**YES | NO**

Replace vehicle interface harness according to OEM service information.

Replace power relay assembly according to OEM service information.

Test complete
Before beginning test procedure:
1. Set parking brakes.
2. Perform Transmission Electrical Test.
3. Turn ignition key “OFF”.

Measure voltage across vehicle battery terminals [voltage = 12.6 volts].
Is voltage correct?

YES    NO

Repair low voltage problem. Contact OEM for service information.

Refer to Figure A below. Disconnect vehicle interface harness connector J1 from ECU.

Refer to Figure B below. Measure resistance between pins A3, B3, C3, and battery negative terminal [resistance = 0.0-0.4 ohms].
Is resistance correct?

YES    NO

Refer to Figure B below. A problem exists with transmission electrical grounds. Contact OEM for service information.

Refer to Figure B below. Measure voltage between harness connector pins A3 and G2 [voltage = battery voltage].
Is voltage correct?

YES    NO

A problem exists in vehicle interface harness or battery supply circuit breaker. Contact OEM for service information.

Refer to Figure B below. Measure voltage between harness connector pins A3 and G1 [voltage = 0 volts].
Is voltage correct?

YES    NO

A problem exists in vehicle interface harness or ignition voltage supply circuit breaker. Contact OEM for service information.

Continue
For all questions concerning inspection, removal, replacement, or adjustment procedures, refer to Eaton or OEM Service and Parts Literature.

Turn the ignition key “ON”.

Refer to Figure B below. Measure the voltage between the harness connector pins A3 and G1 [voltage = battery voltage]. Is voltage correct?

YES | NO

Turn ignition key “OFF”.

A problem exists in vehicle interface harness or ignition voltage supply circuit breaker. Contact OEM for service information.

Refer to Figure B below. Place jumper wire across vehicle interface harness connector pins F1 and A3.

Refer to Figure B below. Measure voltage between harness connector pins B3 and E1 [voltage = battery voltage]. Is voltage correct?

YES | NO

Refer to Figure A at left. Disconnect vehicle interface harness J2 connector from ECU.

A problem exists in transmission power relay or vehicle interface harness. Contact OEM for service information.

Refer to Figure C at left. Measure voltage between J1 connector pin B3 and J2 connector pin A3 [voltage = battery voltage]. Is voltage correct?

YES | NO

Test Complete

Repair/replace vehicle interface harness according to OEM service information.
Before beginning test procedure:
1. Set parking brakes.
2. Perform Transmission Electrical Test.
3. Turn ignition key "OFF".

Refer to Figure A below. Disconnect inertia brake solenoid from the transmission electrical harness.

Measure resistance between inertia brake solenoid connector pins [resistance = 11-18 ohms]. Measure resistance between inertia brake solenoid and vehicle electrical ground [resistance = infinity].  

Is resistance correct?

YES  NO

Connect inertia brake solenoid to transmission harness.
Replace inertia brake solenoid.

Disconnect transmission harness from vehicle interface harness.

Refer to Figure B below. Measure resistance between transmission harness pins G and H [resistance = 11-18 ohms]. Measure resistance between transmission harness pin H and vehicle electrical ground [resistance = infinity].  

Is resistance correct?

YES  NO

Connect transmission harness to vehicle interface harness.
Replace transmission harness.

Continue

For all questions concerning inspection, removal, replacement, or adjustment procedures, refer to Eaton or OEM Service and Parts Literature.
Refer to Figure C below. Disconnect vehicle interface harness J1 connector from transmission ECU.

Refer to Figure D below. Measure resistance between vehicle interface harness connector pins E1 and H1 [resistance = 11-18 ohms]. Measure resistance between pin H1 and vehicle electrical ground [resistance = infinity]. Is resistance correct?

YES  NO

Replace transmission ECU. Replace vehicle interface harness according to OEM service information.

Test complete
Before beginning test procedure:
1. Set parking brakes.
2. Perform Transmission Electrical Test.
3. Turn ignition key “OFF”.

Refer to Figure A below. Install 0-100 psi air gauge in inertia brake air line. Gauge should be installed in “T” fashion.

Start vehicle and allow air pressure to reach governor cut off [90-125 psi].

With the vehicle at idle fully depress clutch pedal and monitor air pressure gauge. Does the inertia brake air pressure cycle on and off?

YES  NO

Replace inertia brake according to service manual.

Refer to Figure B below. Disconnect vehicle interface harness connector J1 from transmission ECU.

Refer to Figure C below. Place jumper wire between pins G2 and E1.

Refer to Figure C below. Place jumper wire between pins H1 and A3. Monitor pressure gauge. Does the inertia brake air pressure read 85-95 psi?

YES  NO

Go to Inertia Brake Switch Test

Remove air gauge from inertia brake air line.

Go to Inertia Brake Air Supply Test

For all questions concerning inspection, removal, replacement, or adjustment procedures, refer to Eaton or OEM Service and Parts Literature.
Before beginning test procedure:
1. Set parking brakes.
2. Perform Transmission Electrical Test.
3. Turn ignition key “OFF”.

Refer to Figure A below. Disconnect vehicle interface harness connector J2 from the transmission ECU.

Refer to Figure B below. Measure the resistance between pin F3 and vehicle electrical ground [resistance = infinity]. Is resistance correct?

**YES** | **NO**
---|---

Fully depress the clutch pedal. | Repair inertia brake switch according to OEM service information.

Refer to Figure A below. Measure the resistance between pin F3 and vehicle electrical ground [resistance = 0-5 ohms]. Is resistance correct?

**YES** | **NO**
---|---

Replace transmission ECU according to transmission service manual. | Repair inertia brake switch circuit according to OEM service information.

For all questions concerning inspection, removal, replacement, or adjustment procedures, refer to Eaton or OEM Service and Parts Literature.
**Before beginning test procedure:**

1. Set parking brakes.
2. Perform Transmission Electrical Test.
3. Turn ignition key “OFF”.

Refer to Figure A below. Install 0-100 psi air gauge in inertia brake solenoid air regulator port.

Start the vehicle and allow air system to reach governor cut-off [90-120 psi]. Monitor air pressure gauge. **Does air pressure equal 73-83 psi?**

<table>
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<th>YES</th>
<th>NO</th>
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Replace inertia brake solenoid according to transmission service manual.

Replace air filter regulator according to transmission service manual.

---

Figure A
Before beginning test procedure:
1. Set parking brakes.
2. Perform Transmission Electrical Test.
3. Turn ignition key “OFF”.

Refer to Figure A below. Disconnect vehicle interface harness connector J1 from the transmission ECU.

Refer to Figure B below. Place jumper wire between pins G2 and E1. Place jumper wire between pins C2 and A3. *Does Converter open lamp turn “ON”?

| YES | NO |

Replace transmission ECU according to OEM service information. Replace converter open lamp and inspect the vehicle interface harness.

Does condition still exist?

| YES | NO |

Perform Transmission Electrical Test. Test Complete
Before beginning test procedure:
1. Set parking brakes.
2. Perform Transmission Electrical Test.
3. Turn ignition key "OFF".

Refer to Figure A below. Disconnect engine speed sensor from transmission electrical harness.

Measure resistance between engine speed sensor connector pins [resistance = 3k-4k ohms]. Measure resistance between engine speed sensor pin A and vehicle electrical ground [resistance = infinity]. Is resistance correct?

**YES**
- Connect engine speed sensor to transmission harness.
- Replace engine speed sensor.

**NO**

Refer to Figure B below. Disconnect transmission harness from the vehicle interface harness.

Measure resistance between transmission harness pins N and P [resistance = 3k-4k ohms]. Measure resistance between transmission harness pin P and vehicle electrical ground [resistance = infinity]. Is resistance correct?

**YES**
- Connect transmission harness to vehicle interface harness.

**NO**
- Replace transmission harness.

Continue
For all questions concerning inspection, removal, replacement, or adjustment procedures, refer to Eaton or OEM Service and Parts Literature.

Refer to Figure C below. Disconnect vehicle interface harness J1 connector from transmission ECU.

Refer to Figure D below. Measure resistance between vehicle interface harness connector pins J3 and K3 [resistance = 3k-4k ohms]. Measure resistance between pin K3 and vehicle electrical ground [resistance = infinity]. Is resistance correct?

YES | NO

Replace transmission ECU.
Replace vehicle interface harness according to OEM service information.

Test complete
**Before beginning test procedure:**
1. Set parking brakes.
2. Perform Transmission Electrical Test.
3. Turn ignition key "OFF".

Refer to Figure A below. Disconnect torque converter harness from transmission electrical harness.

- Measure resistance between torque converter harness pins A and B (resistance = 2.5-4 ohms). Measure resistance between torque converter harness pin A and vehicle electrical ground (resistance = infinity).  
  - **Is resistance correct?**  
    - **YES**
      - Connect torque converter harness to transmission harness.
    - **NO**
      - Replace torque converter harness.

Refer to Figure B below. Disconnect transmission harness from the vehicle interface harness.

- Measure resistance between transmission harness pins A and B (resistance = 2.5-4 ohms). Measure resistance between transmission harness pin B and vehicle electrical ground (resistance = infinity).  
  - **Is resistance correct?**  
    - **YES**
      - Connect transmission harness to vehicle interface harness.
    - **NO**
      - Replace transmission harness.

**Figure A: Torque Converter Harness Connector**

**Figure B: Transmission Harness Connector**

For all questions concerning inspection, removal, replacement, or adjustment procedures, refer to Eaton or OEM Service and Parts Literature.
Before beginning test procedure:
1. Set parking brakes.
2. Perform Transmission Electrical Test.
3. Turn ignition key “OFF”.

Refer to Figure C below. Disconnect vehicle interface harness J1 connector from transmission ECU.

Refer to Figure D below. Measure resistance between vehicle interface harness connector pins E1 and K2 [resistance = 2.5-4 ohms]. Measure resistance between vehicle electrical ground pins E1 and C1 [resistance = 2.5-4 ohms]. Measure resistance between pin C1 and vehicle electrical ground [resistance infinity]. Is resistance correct?

YES | NO

Replace transmission ECU. Replace vehicle interface harness according to OEM service information.

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Figure D: Connector J1

ECU

EATON

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Before beginning test procedure:
1. Set parking brakes.
2. Perform Transmission Electrical Test.
3. Turn ignition key “OFF”.

Disconnect torque converter harness from transmission harness.

Refer to Figure A below. Measure resistance between torque converter harness pins C and D [resistance = 2.5-4 ohms]. Is resistance correct?

YES  NO

Refer to Figure A below. Measure resistance between torque converter harness pin C and vehicle electrical ground [resistance = infinity]. Is resistance correct?

YES  NO

Turn ignition key “ON”.

Replace torque converter harness.

Refer to Figure A at right. Measure voltage between transmission harness pins C and D [voltage = battery voltage]. Is voltage correct?

YES  NO

Depress clutch pedal.

Continue
For all questions concerning inspection, removal, replacement, or adjustment procedures, refer to Eaton or OEM Service and Parts Literature.

Refer to Figure A below. Measure voltage between transmission harness pins C and D [voltage = 0 volts]. Is voltage correct?

YES NO

Test Complete Release clutch pedal.

Connect torque converter harness to transmission harness. Disconnect transmission harness from vehicle interface harness.

Refer to Figure B below. Measure voltage between vehicle interface harness pins C and D [voltage = battery voltage]. Is voltage correct?

YES NO

Depress clutch pedal.

Refer to Figure B at left. Measure voltage between vehicle interface harness pins C and D [voltage = 0 volts]. Is voltage correct?

YES NO

Replace transmission harness

A problem exists in the vehicle interface harness, clutch switch or power connect relay. Contact OEM for service information.
Hydraulic System Test

Before beginning test procedure:
1. Set parking brakes.
2. Perform Transmission Electrical Test.
3. Turn ignition key "OFF".

Set Parking brake and place shift lever in neutral position.

Refer to Figure A below. Connect 0-300 psi gauges to main interrupt and bypass/lockup torque converter ports.

Refer to Figure A below. Connect 0-100 psi gauge to torque converter lube port.

Start vehicle and allow transmission temperature to reach 180-220°F.

Depress clutch pedal.

Monitor pressure gauges.
Main pressure: 225-255 psi
Interrupt pressure: 0 psi
Bypass/lockup pressure: 0 psi
Lube pressure: 20-35 psi
Are the pressures correct?

YES NO

Release clutch pedal.
Inspect/clean oil strainer in oil pan. Replace hydraulic valve. If conflict still exists, a failure has occurred in the hydraulic system.

Monitor pressure gauges.
Main pressure: 225-255 psi
Interrupt pressure: ±5 psi of main
Bypass/lockup pressure: 0 psi
Lube pressure: 15-20 psi
Are the pressures correct?

Continue
For all questions concerning inspection, removal, replacement, or adjustment procedures, refer to Eaton or OEM Service and Parts Literature.

Increase engine rpm to 1600 rpm to lock up the torque converter. Torque converter open light turns “OFF”. Note: Light should come back on at 1400 rpm.

Monitor pressure gauges:
- Main pressure: 225-255 psi
- Interrupt pressure: ±5 psi of main
- Bypass/lockup pressure: ±5 psi of main
- Lube pressure: 15-20 psi

Are the pressures correct?

YES
- Replace hydraulic valve. If conflict still exists, a failure has occurred in the hydraulic system.

NO
- Replace hydraulic valve. If conflict still exists, a failure has occurred in the hydraulic system.

Test complete
Before beginning test procedure:
1. Set parking brakes.
2. Perform Transmission Electrical Test.
3. Turn ignition key “OFF”.

Refer to Figure A below. Disconnect input shaft speed sensor from the transmission electrical harness.

Measure resistance between input shaft speed sensor connector pins [resistance = 3k-4k ohms]. Measure resistance between input shaft speed sensor pin A and vehicle electrical ground [resistance = infinity].

Is resistance correct?

YES NO

Connect input shaft speed sensor to transmission harness.

Replace the input shaft speed sensor.

Refer to Figure B below. Disconnect transmission harness from vehicle interface harness.

Measure resistance between transmission harness pins J and K [resistance = 3k-4k ohms]. Measure resistance between transmission harness pin K and vehicle electrical ground [resistance = infinity].

Is resistance correct?

YES NO

Connect transmission harness to transmission electrical harness.

Replace the transmission harness.

Continue
For all questions concerning inspection, removal, replacement, or adjustment procedures, refer to Eaton or OEM Service and Parts Literature.

Refer to Figure C below. Disconnect vehicle interface harness J1 connector from transmission ECU.

Refer to Figure D below. Measure resistance between vehicle interface harness connector pin G3 and H3 [resistance = 3k-4k ohms]. Measure resistance between pin H3 and vehicle electrical ground [resistance = infinity]. Is resistance correct?

YES    NO

Replace transmission ECU.

Replace vehicle interface harness according to OEM service information.

Test Complete
Before beginning test procedure:
1. Set parking brakes.
2. Perform Transmission Electrical Test.
3. Turn ignition key “OFF”.

Refer to Figure A below. Disconnect output shaft speed sensor from the transmission electrical harness.

Measure resistance between output shaft speed sensor connector pins [resistance = 3k-4k ohms]. Measure resistance between output shaft speed sensor pin A and vehicle electrical ground [resistance = infinity].

Is resistance correct?

YES NO

Connect output shaft speed sensor to transmission harness.

Replace the output shaft speed sensor.

Refer to Figure B below. Disconnect transmission harness from vehicle interface harness.

Measure resistance between transmission harness pins E and F [resistance = 3k-4k ohms]. Measure resistance between transmission harness pin F and vehicle electrical ground [resistance = infinity].

Is resistance correct?

YES NO

Connect transmission harness to transmission electrical harness.

Replace the transmission harness.

Continue
For all questions concerning inspection, removal, replacement, or adjustment procedures, refer to Eaton or OEM Service and Parts Literature.

Refer to Figure C below. Disconnect vehicle interface harness J1 connector from transmission ECU.

Refer to Figure D below. Measure resistance between vehicle interface harness connector pins A1 and B1 [resistance = 3k-4k ohms]. Measure resistance between pin B1 and vehicle electrical ground [resistance = infinity]. Is resistance correct?

YES

Replace transmission ECU.

NO

Replace vehicle interface harness according to OEM service information.

Test complete

Figure C: Vehicle Interface Harness

Figure D: Connector J1
System Overview

For all questions concerning inspection, removal, replacement, or adjustment procedures, refer to Eaton or OEM Service and Parts Literature.
For all questions concerning inspection, removal, replacement, or adjustment procedures, refer to Eaton or OEM Service and Parts Literature.

Electrical Schematic

*Ground pin J2 only for 11118. Leave open for a 9118.

Everything in dashed boxes supplied by OEM.
The Roadranger System is an unbeatable combination of the best products from Eaton and Dana: partnering to provide you the most advanced, most trouble-free drivetrain in the industry. And it's backed by the Roadrangers: the most experienced, most expert, most accessible drivetrain consultants in the business.

For spec'ing or service assistance, call 1-800-826-HELP (4357) 24 hours a day, 7 days a week, (Mexico: 001-800-826-HELP (4357)) for more time on the road. Or visit our web site at www.roadranger.com.