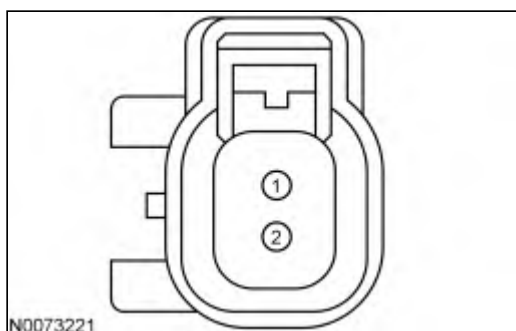
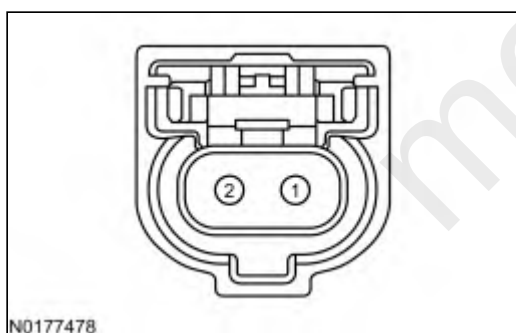


WA: Exhaust Gas Recirculation Temperature (EGRT) Sensor

Note: Regeneration may occur during normal operation. During regeneration, diagnostic procedures may display biased values. If a regeneration occurs during diagnostic procedures, allow the process to complete before continuing diagnostics.

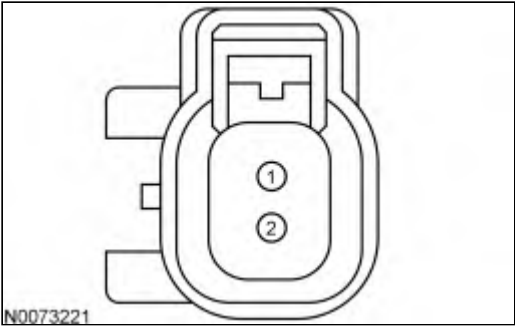
This pinpoint test is intended to diagnose the following:

- harness circuits: EGRT11, EGRT12, and SIGRTN
- EGRT11 and EGRT12 sensors
- PCM (12A650)

Exhaust Gas Recirculation Temperature Bank 1, Sensor 1 (EGRT11) Sensor Connector**A****B**

Vehicle	Connector	Pin	Circuit
F-650 / F-750, F-Series Super Duty	A	2 1	SIGRTN EGRT11
F-150, Transit	A	1 2	SIGRTN EGRT11
Transit Connect	B	2 1	SIGRTN EGRT11

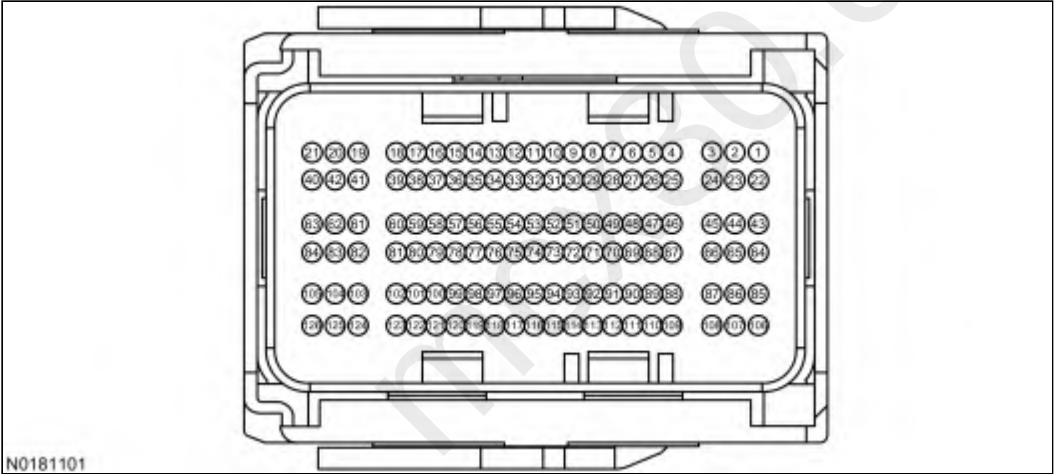
Exhaust Gas Recirculation Temperature Bank 1, Sensor 2 (EGRT12) Sensor Connector



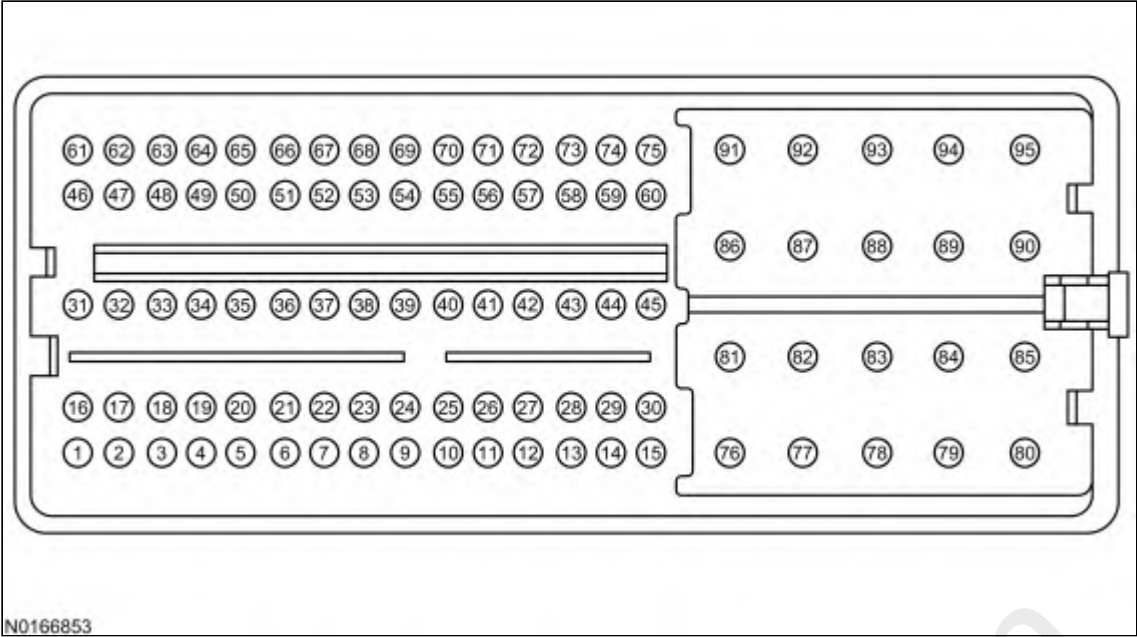
Pin	Circuit
2	SIGRTN (Signal Return)
1	EGRT12 (Exhaust Gas Recirculation Temperature Bank 1, Sensor 2)

Powertrain Control Module-E (PCM-E) Connector

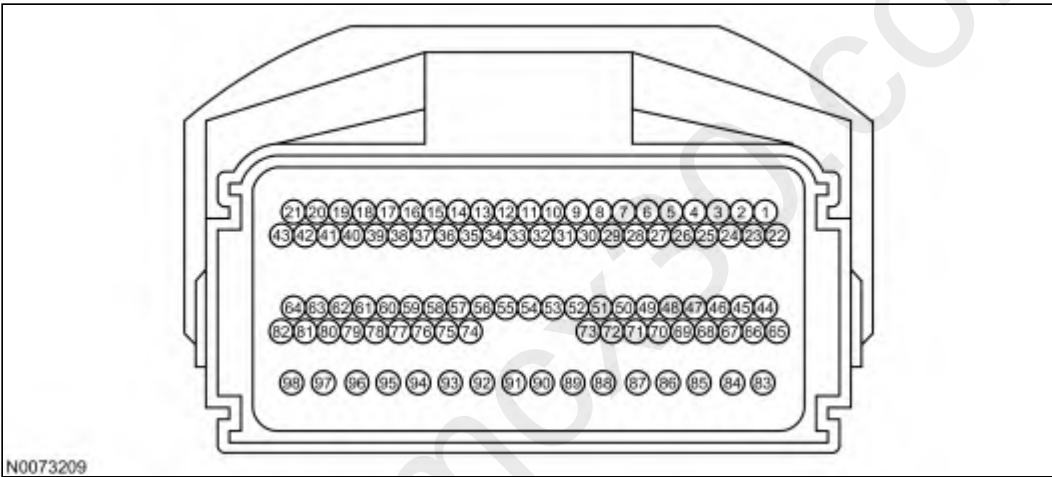
A



B

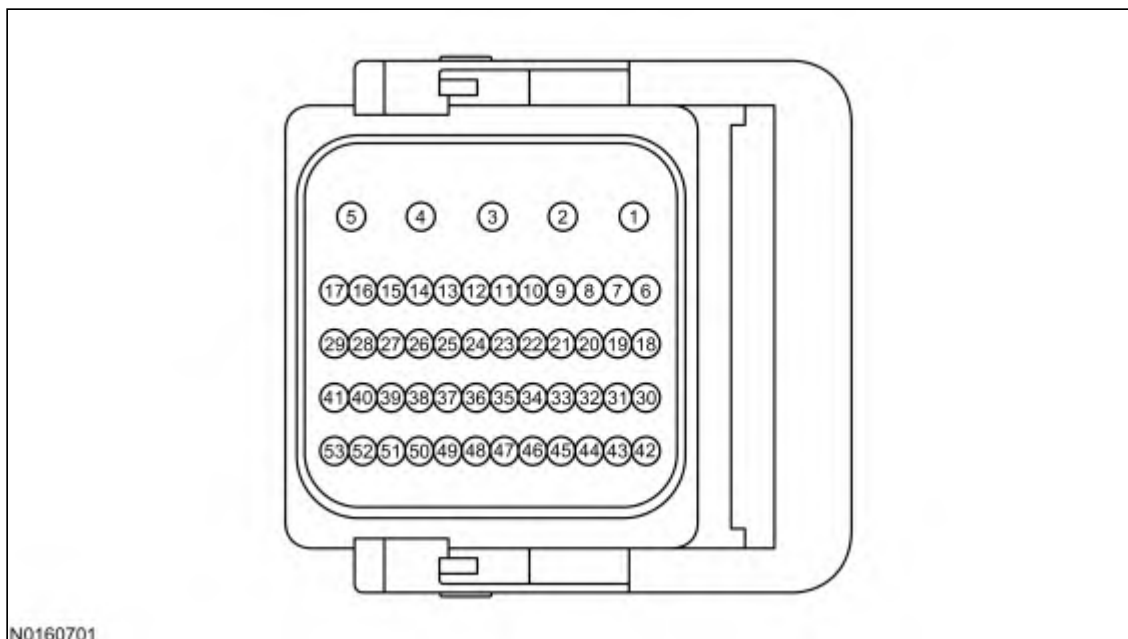


C



Vehicle	Connector	Pin	Circuit
F-Series Super Duty	A	78 99 101	EGRT12 SIGRTN EGRT11
Transit Connect	B	30 42	SIGRTN EGRT11
All other vehicles	C	37 4 27	EGRT12 SIGRTN EGRT11

Powertrain Control Module-T (PCM-T) Connector



N0160701

Pin	Circuit
45	SIGRTN (Signal Return)
32	EGRT12 (Exhaust Gas Recirculation Temperature Bank 1, Sensor 2)
53	SIGRTN (Signal Return)
7	EGRT11 (Exhaust Gas Recirculation Temperature Bank 1, Sensor 1)

WA1 DIAGNOSTIC TROUBLE CODES (DTCs) P040B, P040C, P040D AND P041B: PRELIMINARY DIAGNOSIS
 Are DTCs P040A, P040B, P040C, P040D, P041B, P041C or P041D present?

Yes	GO to WA2 .
No	For symptoms without DTCs, GO to WA2 . For all others, RETURN to Section 3, Symptom Charts for further direction.

WA2 CHECK EGRT11 AND EGRT12 SENSORS RELATED CONNECTORS AND TERMINALS

- Inspect the EGRT11 sensor circuits at the sensor and the PCM.
- Inspect the EGRT12 sensor circuits at the sensor and the PCM.

Is a concern present?

Yes	REPAIR as necessary. Clear the PCM DTCs. REPEAT the self-test.
No	GO to WA3 .

WA3 CHECK FOR AN OPEN

- Ignition OFF.
- For EGRT11,
- EGRT11 Sensor connector disconnected.
- For Transit,
- PCM-T connector disconnected.

- Measure the resistance between:

(+) PCM-T Connector, Harness Side	(-) EGRT11 Sensor Connector, Harness Side
EGRT11 - Pin 7	EGRT11
SIGRTN - Pin 53	SIGRTN

- For all others,
- PCM-E connector disconnected.
- Measure the resistance between:

(+) PCM-E Connector, Harness Side	(-) EGRT11 Sensor Connector, Harness Side
EGRT11	EGRT11
SIGRTN	SIGRTN

- For EGRT12,
- For Transit,
- PCM-T connector disconnected.
- Measure the resistance between:

(+) PCM-T Connector, Harness Side	(-) EGRT12 Sensor Connector, Harness Side
EGRT12 - Pin 32	EGRT12 - Pin 1
SIGRTN - Pin 45	SIGRTN - Pin 2

- For all others,
- EGRT12 Sensor connector disconnected.
- Measure the resistance between:

(+) PCM-E Connector, Harness Side	(-) EGRT12 Sensor Connector, Harness Side
EGRT12	EGRT12 - Pin 1
SIGRTN	SIGRTN - Pin 2

Are the resistances less than 5 ohms?

Yes	GO to WA4 .
No	REPAIR the open circuit. Clear the PCM DTCs. REPEAT the self-test.

WA4 CHECK FOR A SHORT TO GROUND

- For EGRT11,
- Measure the resistance between:

(+) EGRT11 Sensor Connector, Harness Side	(-)
EGRT11	Ground

- For all others,
- Measure the resistance between:

(+) EGRT12 Sensor Connector, Harness Side	(-)
EGRT12 - Pin 1	Ground

Are the resistances greater than 10K ohms?

Yes	GO to WA5 .
No	REPAIR the short circuit. Clear the PCM DTCs. REPEAT the self-test.

WA5 CHECK FOR A SHORT TO VOLTAGE

- Ignition ON, engine OFF.
- For EGRT11,
- Measure the voltage between:

(+) EGRT11 Sensor Connector, Harness Side	(-)
EGRT11	Ground

- For all others,
- Measure the voltage between:

(+) EGRT12 Sensor Connector, Harness Side	(-)
EGRT12 - Pin 1	Ground

Is any voltage present?

Yes	REPAIR the short circuit. Clear the PCM DTCs. REPEAT the self-test.
No	GO to WA6 .

WA6 CHECK THE EGRT SENSOR OPERATION

- Ignition OFF.
- PCM-E connector connected.
- PCM-T connector connected.
- For EGRT11,
- EGRT11 Sensor connector connected.
- Ignition ON, engine OFF.
- Access the PCM and monitor the EGRTA (TEMP) PID.
- Record the PID value.
- For EGRT12,
- EGRT12 Sensor connector connected.
- Ignition ON, engine OFF.
- Access the PCM and monitor the EGRTC (TEMP) PID.
- Record the PID value.
- Drive the vehicle while monitoring the PID.

- Engine at normal operating temperature.
- Record the PID value.

Does the PID value change from the initial recorded value?

Yes	For symptoms without DTCs, Unable to duplicate the condition. CHECK for a loose connection, and damaged or corroded terminals. WIGGLE the harness attempting to recreate the concern. REPAIR as necessary. REFER to Section 3, Section 3, if a driveability concern exists. For all others, GO to WA7 .
No	INSTALL a new EGRT sensor. REFER to the Workshop Manual Section 303-08, Engine Emission Control. Clear the PCM DTCs. REPEAT the self-test.

WA7 CHECK FOR CORRECT PCM OPERATION

- Disconnect all the PCM connectors.
- Visually inspect for:
 - pushed out pins
 - corrosion
- Connect all the PCM connectors and make sure they seat correctly.
- Carry out the PCM self-test.
- Verify the concern is still present.

Is the concern still present?

Yes	INSTALL a new PCM. REFER to Section 2, Flash Electrically Erasable Programmable Read Only Memory (EEPROM) .
No	The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector.