

## EGR Temperature Sensor (DTC: 0305)

The EGR temperature sensor detects temperature changes in the EGR passage way. When the EGR valve opens, hot exhaust gases flow, and the temperature in the passage way changes. The EGR temperature sensor is a thermistor that modifies a voltage signal sent from the ECM. This modified signal then returns to the ECM as an input signal. As the temperature increases, EGR temperature sensor resistance decreases. This sensor is not directly used to control the engine system.

Diagnostic Trouble Code No.	Malfunction is detected when ....	Check Items (Possible Cause)
P1401 0305	A) An excessively low voltage from the EGR temperature sensor is sent to ECM even when engine coolant temperature is low.	<ul style="list-style-type: none"> <li>● Harness or connectors (The EGR temperature sensor circuit is shorted.)</li> <li>● EGR temperature sensor</li> </ul>
	B) An excessively high voltage from the EGR temperature sensor is sent to ECM even when engine coolant temperature is high.	<ul style="list-style-type: none"> <li>● Harness or connectors (The EGR temperature sensor circuit is open.)</li> <li>● EGR temperature sensor</li> </ul>

☆ MONITOR
☆ NO FAIL ☐

CMPS•RPM (REF)

0rpm

COOLAN TEMP/S

28°C

RECORD

SEF949N

## DIAGNOSTIC TROUBLE CODE CONFIRMATION PROCEDURE

### Procedure for malfunction A

- 1) Turn ignition switch "ON" and select "DATA MONITOR" mode with CONSULT.
- 2) Confirm that the engine coolant temperature is lower than 50°C (122°F). (If necessary, wait until the engine coolant temperature is the same as atmosphere temperature.)
- 3) Start engine and run it for at least 8 seconds at idle speed. [Under the engine coolant temperature is lower than 50°C (122°F)].

OR

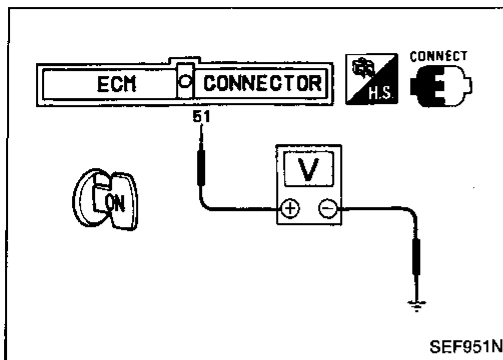
- 1) Turn ignition switch "ON" and select "MODE 1" with GST.
- 2) Confirm that the engine coolant temperature is lower than 50°C (122°F). (If necessary, wait until the engine coolant temperature is the same as atmosphere temperature.)
- 3) Start engine and run it for at least 8 seconds at idle speed. [Under the engine coolant temperature is lower than 50°C (122°F)].
- 4) Select "MODE 3" with GST.

FUEL SYS #1	OPEN
FUEL SYS #2	UNUSED
CALC LOAD	0%
<b>COOLANT TEMP</b>	<b>28°C</b>
SHORT FT #1	0%
LONG FT #1	0%
ENGINE SPD	0RPM
VEHICLE SPD	0km/h
IGN ADVANCE	5.0°
INTAKE AIR	25°C
MAF	0.0gm/sec
THROTTLE POS	0%
O2S LOCATION	3
O2S B1,S1	0.380V
O2FT B1,S1	0%
O2S B1,S2	0.000V

SEF950N

## TROUBLE DIAGNOSIS FOR DTC P1401

### EGR Temperature Sensor (DTC: 0305) (Cont'd)



OR



- 1) Turn ignition switch "ON" and confirm that voltage between ECM terminal 51 and ground is more than 2.35V. (If necessary, wait until the engine coolant temperature is the same as atmosphere temperature.)
- 2) Start engine and run it for at least 8 seconds at idle speed. (Under the voltage between ECM terminal 51 and ground more than 2.35V)
- 3) Turn ignition switch "OFF", wait at least 5 seconds and then turn "ON".
- 4) Perform "Diagnostic Test Mode II (Self-diagnostic results)" with ECM.

#### Procedure for malfunction B



- 1) Start engine and warm it up sufficiently.
- 2) Turn ignition switch "OFF", wait at least 5 seconds and then start engine again.
- 3) Select "DATA MONITOR" mode with CONSULT.
- 4) Run the engine for at least 5 seconds at idle speed.

OR



- 1) Start engine and warm it up sufficiently.
- 2) Turn ignition switch "OFF", wait at least 5 seconds and then start engine again.
- 3) Run the engine for at least 5 seconds at idle speed.
- 4) Select "MODE 3" with GST.

OR

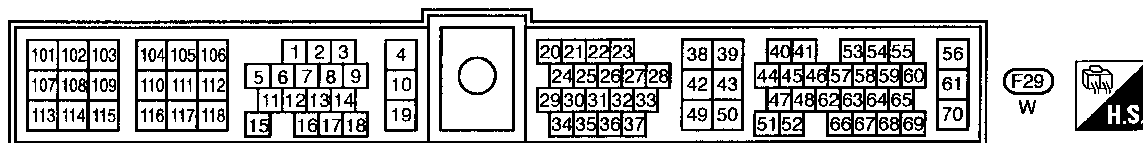
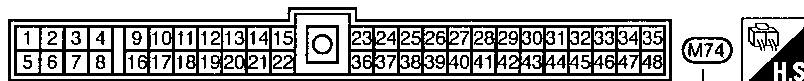
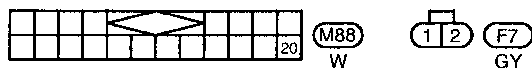
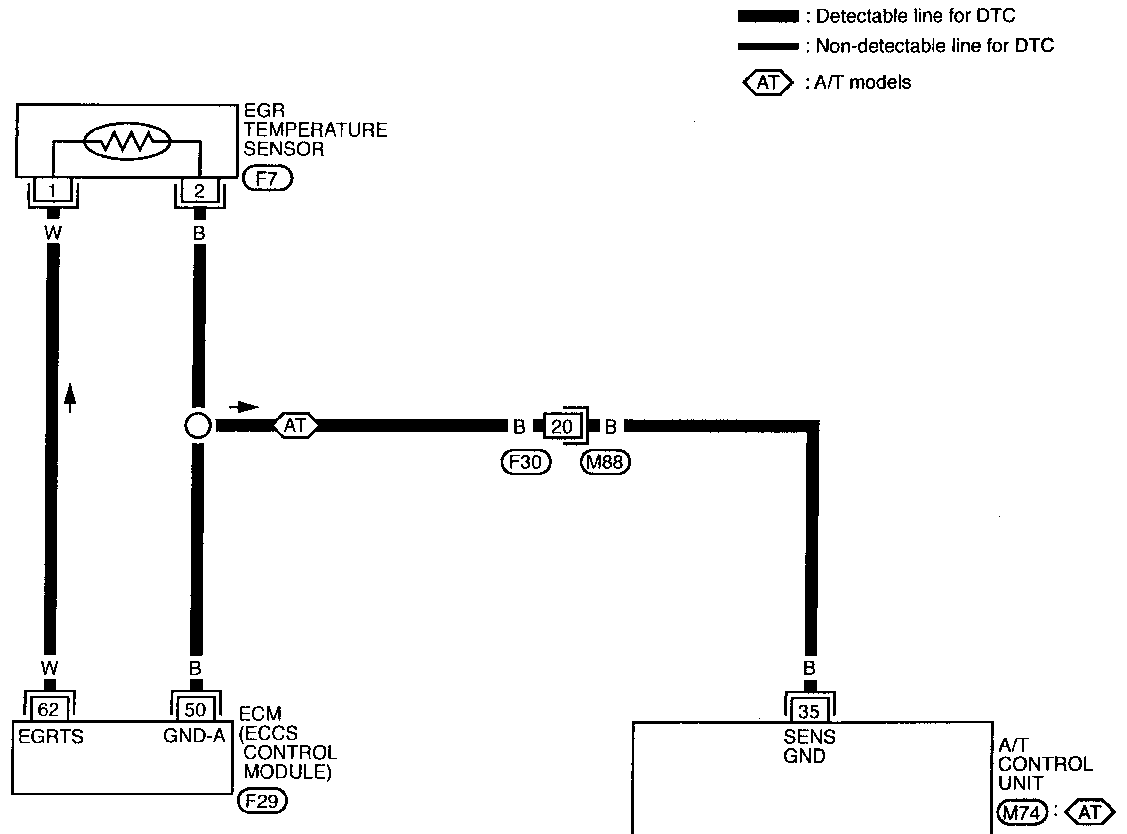


- 1) Start engine and warm it up sufficiently.
- 2) Turn ignition switch "OFF", wait at least 5 seconds and then start engine again.
- 3) Run the engine for at least 5 seconds at idle speed.
- 4) Turn ignition switch "OFF", wait at least 5 seconds and then turn "ON".
- 5) Perform "Diagnostic Test Mode II (Self-diagnostic results)" with ECM.

# TROUBLE DIAGNOSIS FOR DTC P1401

## EGR Temperature Sensor (DTC: 0305) (Cont'd)

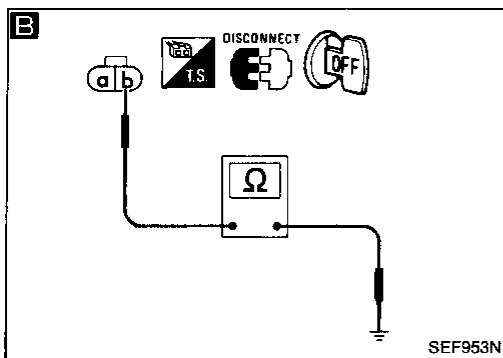
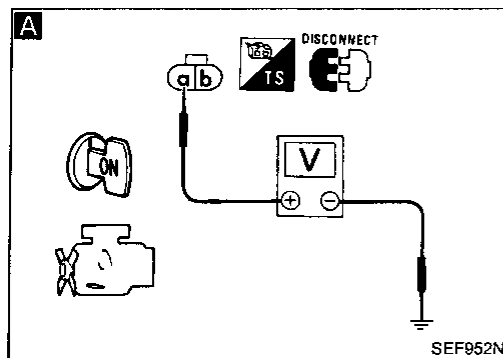
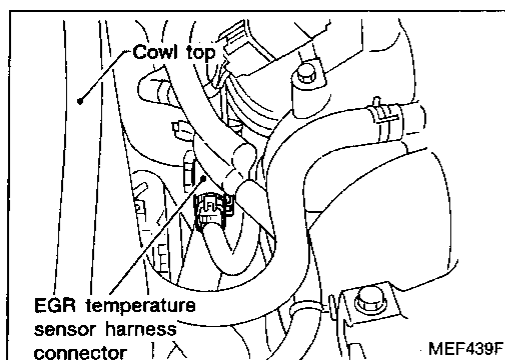
EC-EGR/TS-01



# TROUBLE DIAGNOSIS FOR DTC P1401

## EGR Temperature Sensor (DTC: 0305) (Cont'd)

### DIAGNOSTIC PROCEDURE



INSPECTION START

**A**

#### CHECK POWER SUPPLY.

1. Disconnect EGR temperature sensor harness connector.
2. Turn ignition switch "ON".
3. Check voltage between terminal **(a)** and ground with CONSULT or tester.  
**Voltage: Approximately 5V**

NG

Check the following.

- Harness for open or short between ECM and EGR temperature sensor
- If NG, repair harness or connectors.

OK

**B**

#### CHECK GROUND CIRCUIT.

1. Turn ignition switch "OFF".
2. Check harness continuity between terminal **(b)** and engine ground.  
**Continuity should exist.**  
If OK, check harness for short.

NG

Check the following.

- Harness connectors **(F30)**, **(M88)**
  - Harness for open or short between ECM and EGR temperature sensor
  - Harness for open or short between A/T control unit and EGR temperature sensor
- If NG, repair harness or connector.

OK

#### CHECK COMPONENT

(EGR temperature sensor). Refer to "COMPONENT INSPECTION" on next page.

NG

Replace EGR temperature sensor.

OK

Disconnect and reconnect harness connectors in the circuit. Then retest.

Trouble is not fixed.

Check ECM pin terminals for damage and check the connection of ECM harness connector. Reconnect ECM harness connector and retest.

INSPECTION END

# TROUBLE DIAGNOSIS FOR DTC P1401

## EGR Temperature Sensor (DTC: 0305) (Cont'd)

### COMPONENT INSPECTION

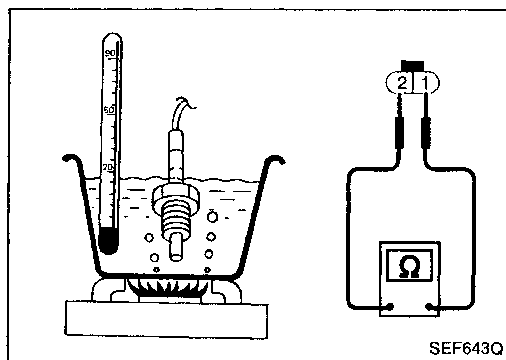
#### EGR temperature sensor

Check resistance change and resistance value.

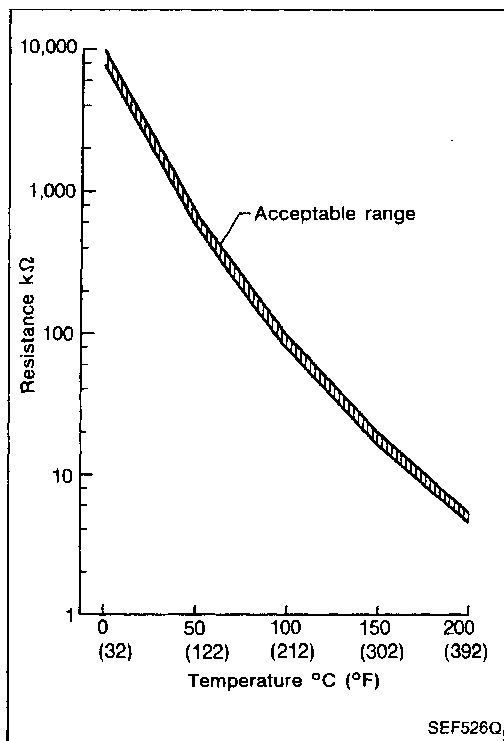
< Reference data >

EGR temperature °C (°F)	Voltage (V)	Resistance (MΩ)
0 (32)	4.81	7.9 - 9.7
50 (122)	2.82	0.57 - 0.70
100 (212)	0.8	0.08 - 0.10

If NG, replace EGR temperature sensor.



SEF643Q



SEF526Q

GI

MA

EM

LC

EC

FE

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MT

AT

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ST

RS

BT

HA

EL

IDX