

Diagnostic Procedure

Blue iQ® Fault Code 7299



FC	SPN	FMI	Title
7299	8290	16	Engine Gaseous Fuel Temperature Regulator Intake Temperature - Data Valid But Above Normal Operating Range - Moderately Severe Level

Part(s) Affected pressure/temperature transducer temperature circuit

Warning Statements Used in this Procedure

NOTICE

NOTICE is used to address practices not related to physical injury, such as best practices or tips to help an operation or procedure go smoothly and prevent equipment damage.

WARNING

WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.

Tools Required

Item	Purpose
infrared non-contact thermometer	measure temperature to properly calculate resistance
digital multimeter (DMM)	resistance and voltage measurements
J1939 OBD-II diagnostic interface	connect vehicle to Cummins® INSITE™ on PC
Cummins® INSITE™	diagnostic software
test probe kit	test and back probe circuit terminals and connectors properly

NOTICE

Never probe an electrical connection with anything other than a properly sized and shaped test lead; doing so may result in damage to components.

Diagnostic Overview

Fault Code 7299 is triggered when the Blue iQ® Fuel System Control Module (FSCM) detects pressure/temperature transducer temperature above 95°C (203°F) for more than 2.5 seconds.

Pre-diagnostic Fuel System Check

Use a non-contact infrared thermometer to measure temperature at the pressure/temperature transducer location.

Reading equal to ambient temperature

↳ Fuel is at a safe operating temperature. Fault is caused by the pressure/temperature transducer temperature circuit. **Proceed Circuit / System Verification.**

Reading above 203°F

WARNING

Fuel is not at a safe operating temperature.
Park vehicle in a safe location.
Exit vehicle and move to a safe distance before contacting Hexagon® Agility Customer Care and Technical Services.

↳ Pressure/temperature transducer is accurately reporting ambient temperature.

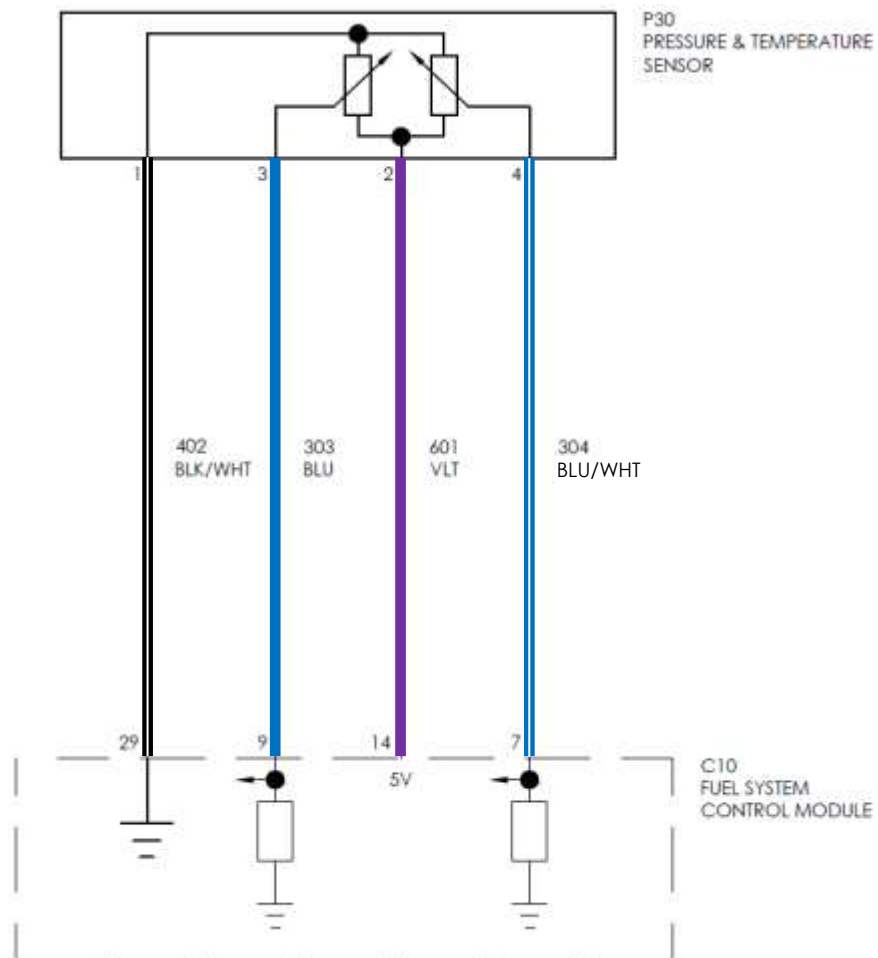
NOTICE

Perform Initial Vehicle Check procedure (*refer to DSM.0009*) prior to performing diagnostic instructions listed below.

Circuit / System Verification

1. Connect J1939 diagnostic interface to vehicle and navigate to the “Agility® Fuel Delivery System, CM1881 AFS(18)” in Cummins® INSITE™.
2. Record all active and stored fault codes and parameters prior to clearing fault codes using INSITE®.
3. Observe and record **Engine Gaseous Fuel Temperature Regulator Intake Temperature Sensor** data from INSITE—is data within reasonable operating range?
 - a. **If not within range** proceed to **Circuit/System Testing**.
 - b. **If within range** proceed to Step 4.
4. Operate the vehicle in the same conditions for enabling the fault code or within the same conditions that triggered the fault code based on recorded data.
5. Verify that the fault code does not set. **If any fault code sets** proceed to **Circuit/System Testing**.
6. While observing **Engine Gaseous Fuel Temperature Regulator Intake Temperature Sensor** parameters perform a wiggle test on the harness and connectors to test for poor or intermittent connections.
 - a. **If any fault code sets**, proceed to **Circuit/System Testing**.
 - b. **If no fault code sets**, system is functioning to design intent.
7. Review **Circuit Schematic** and **Connector End Views** (*below*) to locate test points.

Pressure/temperature Transducer Circuit Diagram



Circuit / System Testing

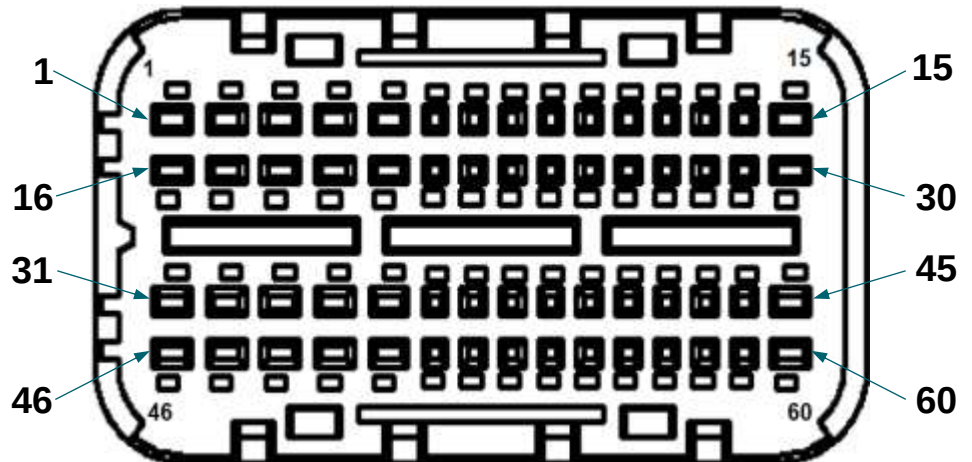
Step 1

- Ignition Off.
- Disconnect and inspect Blue iQ electrical interface points in the following order:
 1. Pressure/temperature transducer 4-pin connector
 2. FSCM 60-pin connector

Pressure/temperature
transducer connector end view



FSCM connector end view



- Examine component and harness connectors for the following issues:
 1. Loose/not seated into connector
 2. Corrosion
 3. Bad termination
 4. Missing cavity plugs

Damage found?

Yes

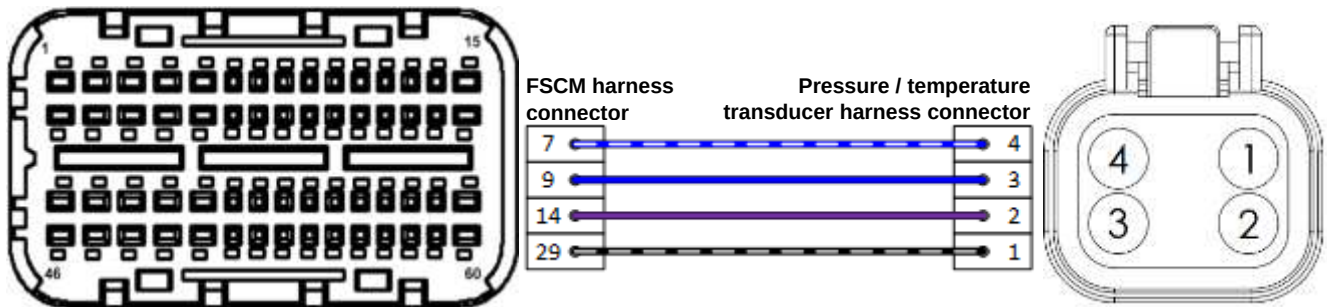
- ↳ Repair or replace (R/R) connector(s). If R/R is not possible, replace harness or component.
- ↳ **Proceed to Reassembly and Validation.**

No

- ↳ **Proceed to Step 2.**

Step 2 Use DMM and appropriate test leads to perform wire-to-wire continuity test to measure resistance of each of the following circuits:

1. FSCM connector **Pin 29** to pressure/temperature transducer connector **Pin 1**.
2. FSCM connector **Pin 9** to pressure/temperature transducer connector **Pin 3**.



Resistance between zero and 1 ohm?

Yes

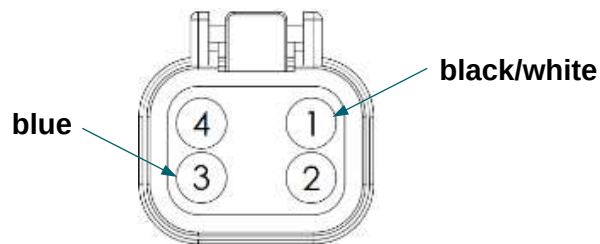
↳ **Proceed to Step 3.**

No

↳ Repair/replace affected circuit wire(s), terminal(s) or connector(s).

↳ **Proceed to Reassembly and Validation.**

- Step 3**
- Reconnect FSCM harness connector and pressure temperature transducer harness connector.
 - **Ignition On.**
 - Use DMM and appropriate test leads to measure voltage between **Pin 1** (black/white) and **Pin 3** (blue) of the pressure/temperature transducer harness connector.



Pressure/temperature transducer harness connector end view

Voltage between to 0.5 V to 4.5 V?

Yes

↳ Repair short to voltage in 5V Signal circuit.

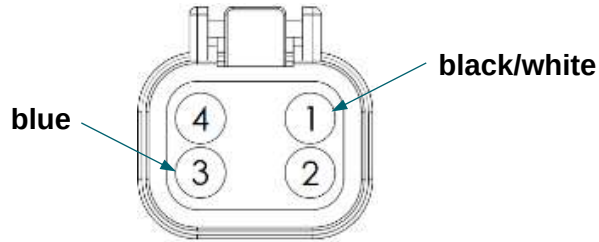
↳ **Proceed to Reassembly and Validation.**

No

↳ **Proceed to Step 4.**

Step
4

- Ignition Off.
- Connect pressure/temperature transducer connector.
- Ignition On.
- Use DMM Voltage setting and appropriate test leads to back probe between pressure/temperature transducer connector **Pin 1** (black/white) and **Pin 3** (blue).



Pressure/temperature transducer harness
connector end view

NOTICE

Exercise great care to prevent damage to connector seals. Failure to use correctly sized and shaped test leads to back probe connectors may result in harness damage.

Voltage between 0.5 and 4.5 V?

Yes

- ↳ Replace pressure/temperature transducer.

WARNING

Always follow OEM fuel system depressurization and repair instructions.

- ↳ Proceed to Reassembly and Validation.

No

- ↳ Record voltage reading and contact Hexagon Agility® Technical Support.

Reassembly and Validation

After completing all repairs, always perform the following steps to confirm the issue is fixed:

1. Reconnect all connectors and verify connections are secure.
2. Reattach any enclosure covers and close any fuel system doors.
3. Clear fault codes using Cummins® INSITE™ tool.
4. Run vehicle until it reaches normal operating temperature. *Refer to OEM instructions.*
5. If fault is cleared, return vehicle to duty.
6. If fault is not cleared, contact Hexagon Agility® Technical Support.

Hexagon Agility® Customer Care and Technical Services

Fuel system warranty or non-warranty product support may be obtained by calling or emailing Hexagon Agility® Customer Care and Technical Services (CCTS).

Please provide **your name, phone number, email address, and complete vehicle information: VIN, year, make, model, mileage, unit number vehicle owner, and current vehicle location.** A service advisor will contact you to arrange vehicle repair or ship a part.

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