

Diagnostic Procedure

Blue iQ® Fault Code 6963



FC	SPN	FMI	Title
6963	8241	0	Fuel Storage Compartment 1 Temperature - Data Valid But Above Normal Operating Range - Most Severe Level

Part(s) Affected Thermistor 1—called “Fuel Storage Compartment Temperature Sensor 1” by INSITE™

Diagnostic Overview

Fault Code 6963 is triggered when the Blue iQ™ Fuel System Control Module (FSCM) detects Thermistor 1 temperature above 82.2° C (180° F).

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.

Tools Required

Item	Purpose
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	properly test and back probe circuit terminals and connectors
infrared non-contact thermometer	measure ambient temperature

NOTICE

Never probe an electrical connection with anything other than a properly sized and shaped test lead; doing so may damage terminals and/or connectors.

NOTICE

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

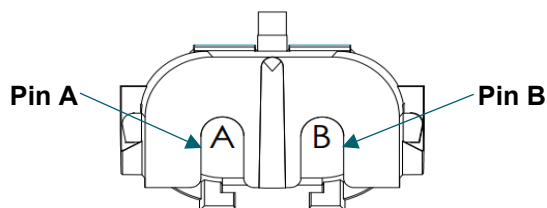
Circuit / System Verification

1. Connect Cummins® INSITE™ diagnostic tool to vehicle using J1939 OBD-II diagnostic interface and PC and navigate to the “Agility® Fuel Delivery System, CM1881 AFS(18)”.
2. Record all active and stored fault codes and parameters prior to clearing fault codes using INSITE™.
3. Observe and record **Fuel Storage Compartment Temperature Sensor 1** 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 the **Fuel Storage Compartment Temperature Sensor 1** parameters in INSITE™ perform a wiggle test on the **FSCM 60-pin connector** and **Thermistor 1 connector and harness** (refer to **DSM.0001**) 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** (refer to **DSM.0001**) to locate test points.

Circuit / System Testing

- Step 1**
- **Ignition Off.**
 - Unplug Thermistor 1 from Blue iQ harness.
 - Use a DMM and appropriate test leads to probe between **Pin A** and **Pin B** of Thermistor 1 to measure the resistance and **record the ohms reading**.

Thermistor connector end view



- Use a non-contact infrared thermometer to measure temperature at Thermistor 1 and **record the value**.
- Use **TABLE 1** below to determine temperature-adjusted thermistor resistance range.

TABLE 1.

Thermistor Resistance* vs. Temperature.

Temp		Resistance Range (Ohms)		
°F	°C			
-40	-40	32277	to	35177
-22	-30	17083	to	18359
-4	-20	9413	to	10015
14	-10	5397	to	5673
32	0	3197	to	3335
50	10	1954	to	2026
77	25	989	to	1011
86	30	796	to	816
104	40	524	to	542
122	50	352	to	368
140	60	243	to	255
158	70	170	to	180
176	80	122	to	130
194	90	89	to	95
212	100	66	to	70

Resistance within specifications per TABLE 1?

Yes

↳ **Proceed to Step 2.**

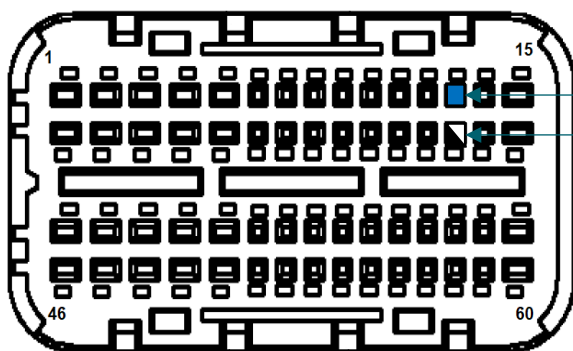
No

↳ **Replace Thermistor 1. Refer to appropriate procedure in *DSM.0001*.**

↳ **Proceed to Reassembly and Validation.**

**Step
2**

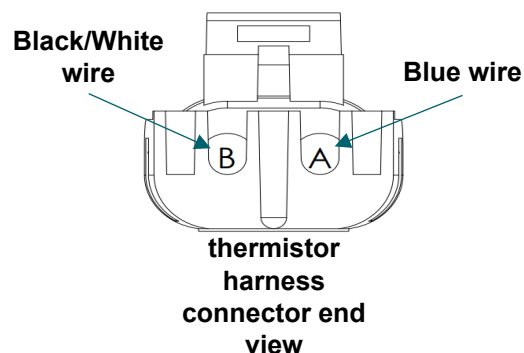
- Ignition Off.
- Unplug FSCM 60-pin connector.
- Inspect and **FSCM 60-pin connector** and **Thermistor 1 connector** and associated harness wires and for the following conditions:
 1. corrosion
 2. missing cavity plugs
 3. bad termination
 4. damaged or loose terminals



FSCM harness connector end view

Pin 13 –
Blue wire

Pin 28 –
Black/white
wire



thermistor
harness
connector end
view

Damage found?

Yes

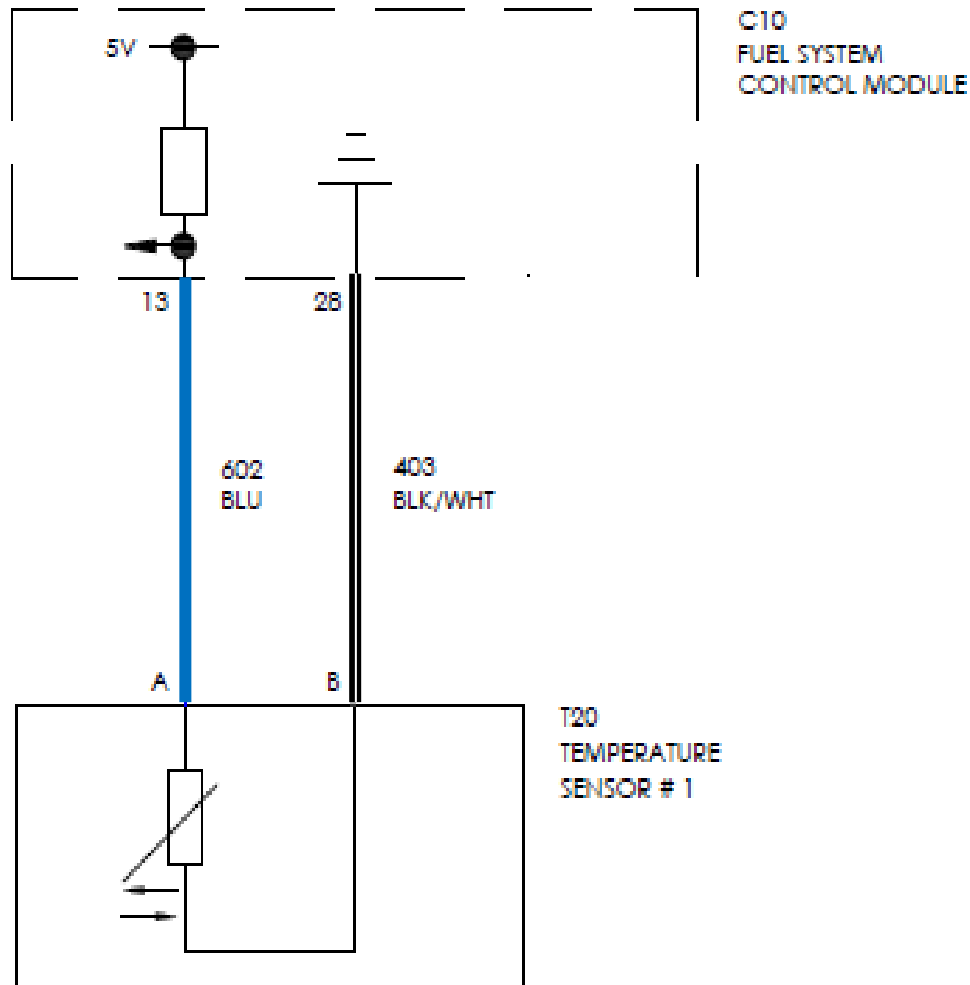
- ↳ Repair affected connector(s).
- ↳ Proceed to Reassembly and Validation.

No

- ↳ Proceed to Step 3.

**Step
3**

- **Ignition Off.**
- Use a DMM and appropriate test leads to perform a wire-to-wire resistance test on the following connectors using the diagram below:
 1. FSCM **Pin 13** to Thermistor 1 **Pin A** – Blue wire
 2. FSCM **Pin 28** to Thermistor 1 **Pin B** – Black/White wire



Resistance between zero and 1 ohms?

Yes

- ↳ Circuits are within specifications.
- ↳ **Contact Hexagon Agility® Technical Support.**

No

- ↳ **Repair affected circuit(s).**
- ↳ **Proceed to Reassembly and Validation.**

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.

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.

+1 855 500 2445
(toll-free, U.S. and Canada)
+1 949 267 7745

Support
support@hexagonagility.com

Parts Orders
parts@hexagonagility.com

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3335 Susan Street, Suite 100 Costa Mesa, CA 92626 USA

www.hexagonagility.com