P0714: TRANSMISSION FLUID TEMPERATURE SENSOR A CIRCUIT INTERMITTENT

OVERVIEW

Severity	:	High
DIY Difficulty Level	:	Intermediate
Repair Cost	:	**$100-$250**
Can I Still Drive?	:	**Yes**

What Does The P0714 Code Mean?

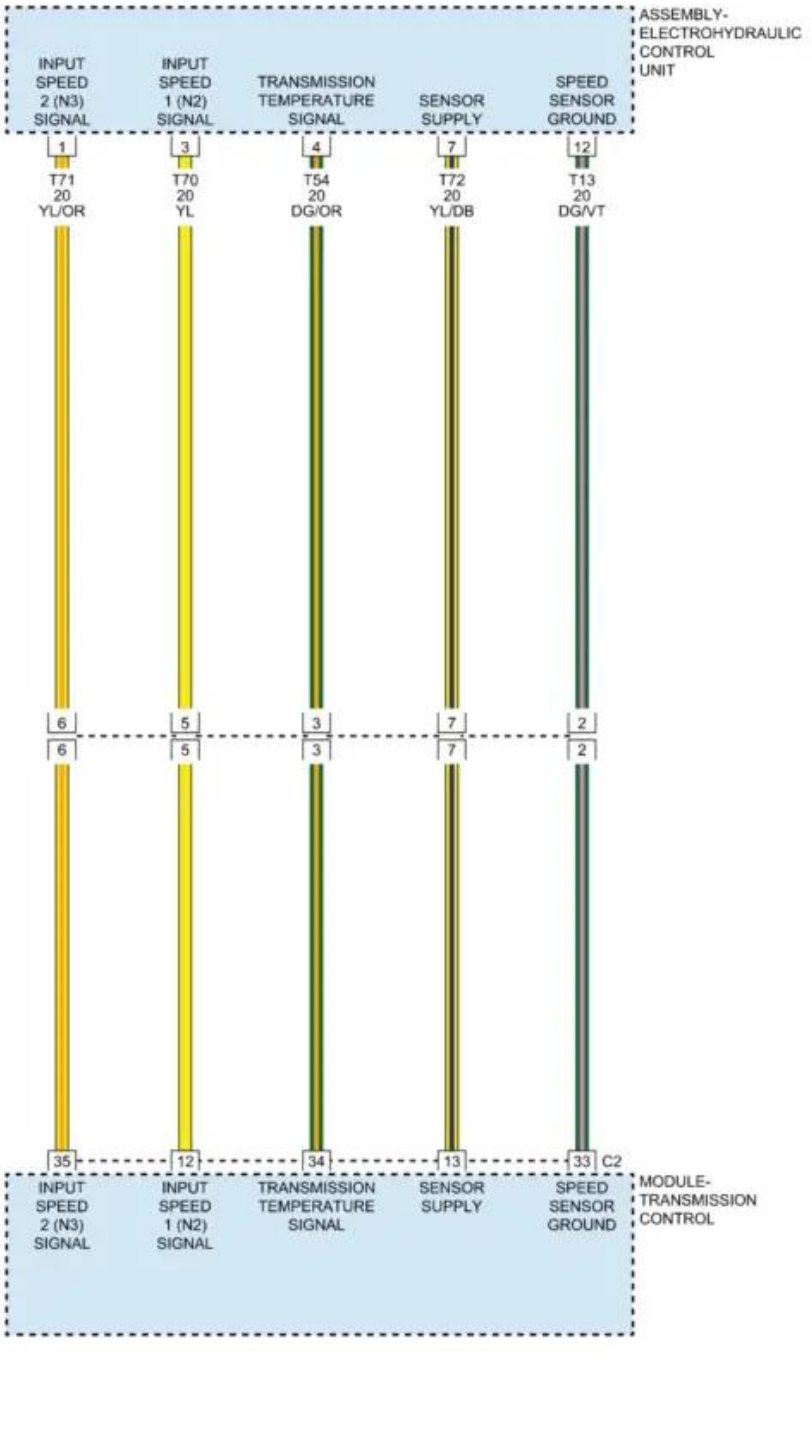
This diagnostic trouble code (DTC) is a generic powertrain code, which means it applies to OBD-II equipped vehicles which have a transmission fluid temperature sensor (Jeep, Ford, Nissan, Toyota, Honda, Infiniti, Acura, Jaguar, Lexus, etc.). Although generic, the exact repair steps may vary depending on make/model.

The transmission fluid temperature sensor (TFT) sensor produces a signal that is used by the powertrain control module (PCM) to determine shift points, line pressure and torque converter clutch (TCC) control. The sensor is often located in the transmission oil pan.

The TFT sensor receives a reference voltage (usually 5 volts) from the PCM. It the varies its internal resistance in relation to transmission fluid temperature to send a return voltage signal to the PCM.

TFT sensors are a type of negative temperature coefficient (NTC) thermistor. This means internal resistance of the sensor is inversely proportional to the oil temperature. The TFT sensor signal voltage goes down when the transmission fluid temperature goes up and vice versa.

Code P0714 is set when the PCM detects an intermittent problem with the transmission fluid temperature sensor.



P0714 wiring diagram

Related trans fluid temperature sensor “A” circuit codes:

- P0710: Transmission Fluid Temperature Sensor A Circuit Malfunction
- P0711: Transmission Fluid Temperature Sensor A Circuit Range/Performance
- P0712: Transmission Fluid Temperature Sensor A Circuit Low Input
- P0713: Transmission Fluid Temperature Sensor A Circuit High Input

What Are The Symptoms Of The P0714 Code?

Symptoms of a P0714 engine code may include:

- Illuminate check engine light
- Improper torque converter clutch operation
- Harsh or delayed shifts
- Vehicle stuck in limp mode

What Are The Potential Causes Of The P0714 Code?

Causes for this trouble code may include:

- Faulty transmission fluid temperature sensor
- Transmission problems
- Wiring problems
- Faulty PCM

How Can You Fix The P0714 Code?

Begin by visually inspecting the transmission fluid temperature sensor and the corresponding wiring. Look for loose connections, damaged wiring, etc.

If damage is found, repair as necessary, clear the code and see if it returns. Next, check for technical service bulletins (TSBs) regarding the issue. If nothing is found, you will need to move forward to step by step diagnosis of the system.

The following is a generalized procedure, as testing for this code varies between vehicles. To accurately test the system, you’ll want to refer to the manufacturer’s diagnostic flow chart.

Do some preliminary circuit testing

Use a scan tool to monitor the transmission temperature sensor data parameter. Disconnect the TFT sensor; the scan tool value should drop to a very low value. Next, connect a jumper wire across the terminals.

If the scan tool now displays a very high temperature, the connections are sound and the ECM can

recognize the input. This means the problem is most like the sensor and not a circuit or PCM problem.

Test the sensor

Disconnect the transmission fluid temperature sensor connector. Next, measure the resistance between the two sensor terminals using a digital multimeter set to ohms.

Start the engine and watch the meter value; the values should decrease smoothly as the engine warms up (check the engine temperature gauge on the dash to ensure the engine reaches operating temperature). If engine temperature increases but TFT resistance does not decrease, the sensor is faulty and should be replaced.

Check the circuit

Check the reference voltage side of the circuit: with the ignition on, use a digital multimeter set to volts to check for a 5-volt reference from the PCM at one of the two transmission fluid temperature sensor terminals.

If no reference signal is present, connect the meter set to ohms (with the ignition off) between the reference voltage pin on the TFT and the reference voltage pin on the PCM. If the meter reads out of limits (OL) there is an open circuit between the PCM and sensor that will need to be located and repaired. If the meter reads a numeric value, there is continuity.

If everything is good up to this point, you'll want to check that there is 5-volts coming out of the PCM at the reference voltage terminal. If there is not a 5-volt reference from the PCM, the PCM is probably faulty.

Check the ground side of the circuit

Connect the meter set to ohms (with the ignition off) between the ground terminal on the transmission fluid temperature sensor and the ground terminal on the PCM. If the meter reads out of limits (OL) there is an open circuit between the PCM and sensor that will need to be located and repaired.

If the meter reads a numeric value, there is continuity. Finally, check that the PCM has a good ground by attaching one meter lead to the PCM ground terminal and the other to chassis ground. Once again, If the meter reads out of limits (OL) there is an open circuit between the PCM and ground that will need to be located and repaired.

If everything in the circuit checks out, there may be a problem with the transmission. This is especially true if the transmission fluid temperature codes are set along with other transmission codes.

Severity Description

The severity of this code is moderate to severe. In some cases, this code can indicate a transmission problem. It's a good idea to address this code as soon as possible.

Reference Sources

P0714 Trans Fluid Temp Sensor A Circuit Intermittent, OBD-Codes.