

BMW · POWERTRAIN

P1115

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1115 · BMW

Coolant Temperature Sensor Plausibility

P1115 on BMW vehicles means the engine control module (DME) has detected an implausible coolant temperature signal during its rationality checks. The DME compares the coolant temperature sensor reading against other temperature inputs and expected warm-up behaviour, and flags the code when the signal does not make physical sense.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	BMW specific	Medium	Intermediate	Fuel and air metering

Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms
- Erratic or inaccurate temperature gauge readings on the instrument cluster
- Poor fuel economy or rough running during cold start and warm-up
- Cooling fan running constantly or not engaging when it should
- Incorrect cold-start enrichment causing a rich or lean condition
- Occasional stalling or hesitation when the engine is warming up

Common causes, most likely first

- 1 Faulty coolant temperature sensor (NTC thermistor) with a skewed resistance curve
- 2 Corroded, loose, or damaged wiring and connector pins at the sensor or DME
- 3 Air pockets or low coolant level causing the sensor to read air instead of coolant
- 4 Thermostat stuck open or closed, preventing the DME from seeing expected warm-up
- 5 Contamination or scale build-up on the sensor tip insulating it from coolant
- 6 DME software or adaptation values that need updating or resetting
- 7 Rare internal DME fault in the temperature input circuit

How to diagnose and fix it

- 1 Check coolant level and bleed the cooling system to rule out air pockets
- 2 Inspect the sensor connector and wiring for corrosion, chafing, or loose pins
- 3 Measure the coolant temperature sensor resistance cold and hot, comparing to BMW specifications
- 4 Use a scan tool to compare the coolant temperature reading with intake air and oil temperature during a cold start
- 5 Test the thermostat operation by monitoring warm-up time and upper hose temperature
- 6 Replace the coolant temperature sensor if resistance testing is out of specification
- 7 Clear adaptations and the fault memory, then road test to confirm the code does not return



Plausibility checks catch what resistance tests miss

- A sensor can pass a simple resistance test at two temperatures yet still fail the DME plausibility check because its response curve is non-linear or slow to react.
- Air trapped in the cooling system after a repair is one of the most common causes of P1115 on BMW engines, and it often sets without any sensor fault at all.
- A thermostat that is stuck open can trigger P1115 because the DME never sees the expected warm-up rate, even though the coolant sensor itself is healthy.
- Comparing the coolant temperature PID with intake air and oil temperature on a cold start is the fastest way to spot a skewed sensor before replacing parts.
- On some BMW models, a low or weak battery can cause implausible temperature readings at cold start, so check battery condition before condemning the sensor.

Can I keep driving with P1115?

You can usually drive the car to a workshop, but avoid hard acceleration and long trips until the fault is diagnosed. If the temperature gauge behaves erratically or the engine overheats, stop driving and have the vehicle towed.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Infrared thermometer
- Coolant refractometer or hydrometer
- Socket set and torx bits for sensor replacement
- Coolant bleeding kit

Reading P1115

P Powertrain: engine, transmission and emissions.

1 Manufacturer-specific code (BMW); its meaning depends on the make.

1 Fuel and air metering.

15 The exact fault within that area.

Often seen with

P1114 Bank 1 Sensor 2 Resistance Too High · **P1114** Intake Air Temperature Sensor Circuit Low Input · **P1114** Engine Coolant Temperature Sensor Intermittent · **P1114** Intake Air Temperature B (IAT2) Circuit Low Input · **P1114** Engine Coolant Temperature (ECT) Sensor Circuit Intermittent · **P0116** Engine Coolant Temperature Circuit Range/Performance · **P0117** Engine Coolant Temperature Circuit Low Input · **P0118** Engine Coolant Temperature Circuit High Input · **P0128** Coolant Thermostat (Coolant Temperature Below Thermostat RegAV

See it working

Watch the animated explainer [Engine Cooling System Trainer: How Engines Stay Cool](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/bmw-p1115/>

