

FORD · POWERTRAIN

P1118

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1118 · Ford

Manifold Absolute Temperature Circuit Low Input

P1118 on Ford vehicles means the powertrain control module (PCM) has detected a low input voltage from the manifold absolute temperature (MAT) sensor circuit, indicating the sensor signal is below the expected range for current conditions. The PCM uses this sensor to measure intake air temperature after the manifold, and a low voltage typically corresponds to an unusually cold or shorted signal.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Ford specific	Low	Intermediate	Fuel and air metering

Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms
- Rough idle or stumbling when the engine is cold, especially in cold weather
- Poor fuel economy or rich-running condition due to incorrect air density calculation
- Hesitation or flat spots during acceleration from a stop
- In rare cases, a no-start condition if the sensor signal is completely shorted
- Often no symptoms besides the warning light

Common causes, most likely first

- 1 Faulty manifold absolute temperature sensor internally shorted or out of specification
- 2 Damaged or chafed wiring between the MAT sensor and the PCM, causing a short to ground
- 3 Corroded or loose electrical connector at the MAT sensor
- 4 Water intrusion into the sensor connector or sensor body
- 5 PCM internal fault on the MAT input circuit, though this is less common
- 6 Aftermarket intake or sensor installation error that pinches or grounds the signal wire



How to diagnose and fix it

- 1 Connect a scan tool and record the MAT sensor voltage and temperature readings with the key on and engine cold, then compare to ambient temperature to confirm the low input
- 2 Visually inspect the MAT sensor connector and wiring for corrosion, water, or chafing, and repair any damaged terminals or harness sections
- 3 Disconnect the MAT sensor and measure resistance across the sensor terminals, comparing to Ford's temperature-resistance chart for the specific engine
- 4 With the sensor disconnected, check for a short to ground on the signal wire between the sensor connector and the PCM using a multimeter
- 5 If wiring and connector are good, substitute a known-good MAT sensor and clear the code to see if it returns
- 6 If the code persists with a known-good sensor and verified wiring, perform a wiggle test on the harness while monitoring MAT voltage to catch intermittent shorts
- 7 As a last step, diagnose the PCM input circuit or replace the PCM only after all other causes are ruled out

Why a low MAT reading is not always the sensor

- A shorted signal wire to ground is a more common cause of P1118 than a failed sensor itself, especially on older Ford trucks where the harness rubs near the intake manifold.
- The MAT sensor on many Ford engines is integrated into the mass airflow (MAF) sensor housing, so technicians who replace only the separate MAT sensor miss the actual fault.
- Water intrusion from a missing or damaged air box seal can pool in the MAT connector and create a low-voltage short that appears only after rain or a car wash.
- P1118 can set intermittently from a loose ground connection at the engine block, which affects the reference voltage the PCM uses for the MAT circuit.
- Do not confuse P1118 with P0113 (intake air temperature circuit high input); the two codes point to opposite ends of the same circuit and require different diagnostic paths.

Can I keep driving with P1118?

You can generally continue driving with P1118 because the engine will still run, but expect slightly poor fuel economy and cold-start drivability until it is repaired. Avoid heavy towing or sustained high-load driving in cold weather, and have the circuit checked soon to prevent the fault from masking a more serious sensor failure.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Ford service information or wiring diagram for the specific model
- Temperature-resistance chart for the MAT sensor
- Basic hand tools for connector and sensor access
- Electrical contact cleaner and dielectric grease



Reading P1118

- P** Powertrain: engine, transmission and emissions.
- 1** Manufacturer-specific code (Ford): its meaning depends on the make.
- 1** Fuel and air metering.
- 18** The exact fault within that area.

Often seen with

P0102 Mass/Volume Air Flow Circuit Low Input · **P0111** Intake Air Temperature Circuit Range/Performance · **P0112** Intake Air Temperature Circuit Low Input · **P0113** Intake Air Temperature Circuit High Input · **P0172** System Too Rich (Bank 1)

See it working

Watch the animated explainer [How ABS Works: Anti-Lock Brakes in X-Ray](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/ford-p1118/>

