Remote Diagnostic Report

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Mercedes-Benz GLE (W166) · P0101FA has returned

Prepared for the garage · AI Mechanic remote diagnostics · 9 November 2026

Vehicle	Mercedes-Benz GLE, chassis 166 (W166), diesel	VIN	WDC·111
Engine control unit	CR43	Date	9 November 2026
Session	Remote, read-only via the Gateway PRO dongle	Odometer	172,212 km

Summary

• **P0101FA (mass air flow sensor 1 plausibility) has set again**, about 4 km before our read, 129 km after our 3 November read. It is the only fault entry in the engine control unit.
• **Status: pending, not confirmed.** The engine warning lamp is **off** and there are no confirmed emission codes. It has been recorded once since the memory was cleared.
• **It set in exactly the same situation as on 3 November:** foot off the pedal (overrun, fuel cut) with the EGR valve closed and **boost still well above its setpoint**: +203 hPa today against +124 hPa on 3 November, at 33 km/h against 16 km/h.
• **Revised assessment:** this is **not a one-off trip** (our 4 November conclusion). The repeat confirms the pattern from the 4 November road test: the fault is set when boost does not fall quickly after lifting off. The leading suspect is the **turbocharger boost control on lift-off** (regulating flaps or bypass, their actuators, vacuum supply and control valves). A **MAF sensor characteristic problem** is the second candidate: the new MAF was fitted only 94 km before the first trip.
• **Nothing was cleared.** Please do not clear the code until the checks in section 5 are done. The stored snapshot is the evidence.

1. Fault memory today

Check	Result
Vehicle identity	VIN read from the engine control unit matches WDC·111
Engine control unit (CR43) fault memory	**P0101FA** Mass air flow sensor 1 has a malfunction. Status: **pending** (failed since the last clear, not confirmed). Recorded once.
Other entries	None failed. All other monitors show "not completed since clear". The 15 short-circuit history codes from 3 November are no longer stored.
Engine warning lamp (MIL)	Off, 0 confirmed emission codes
When it set	About 4 km before our read (ECU fault-entry distance 70,782 km, now 70,786 km). Dashboard odometer now 172,212 km (3 Nov: 172,083 km).

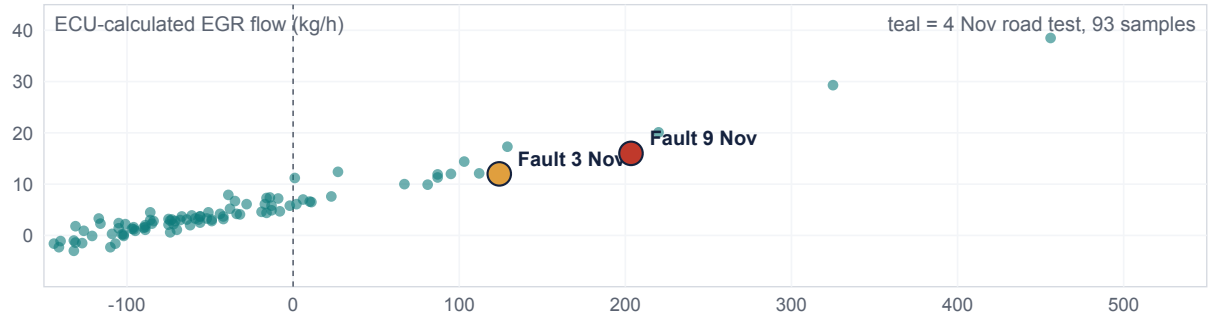
2. Fault snapshot: today compared with 3 November

Values the engine control unit stored at the moment the test failed. On both days the first and last occurrence are identical (one event).

Value	3 November	9 November	Unit
Road speed	16	33	km/h
Engine speed	1,100	1,520	rpm
Injection quantity	0.0	0.0	mm³/stroke
Lambda	25.5	25.5	
Measured air mass (MAF)	80	136	kg/h
Air per stroke (MAF)	608	744	mg
MAF ratio to the ECU air model	1.185	1.155	
Boost pressure	1,360	1,543	hPa
Boost setpoint	1,236	1,340	hPa
Boost above setpoint	**+124**	**+203**	hPa
Exhaust pressure before turbine	1,314	1,704	hPa
Turbo regulating flap actuator	78	70	%
Turbo bypass actuator	79	76	%
EGR valve position	0	0	%
ECU-calculated EGR flow	12	16	kg/h
Coolant / oil temperature	85 / 84	88 / 96	°C
Outside temperature / pressure	6 / 1,012	9 / 1,021	°C / hPa
Intake air / charge air temperature	16 / 25	12 / 23	°C
Rail pressure	293	362	bar
DPF soot load / pressure difference	3.8 / 31.2	5.4 / 62.7	g / hPa
Battery voltage	14.4	14.4	V

Odometer at the fault: 3 Nov 70,636 km, 9 Nov 70,782 km (ECU fault-entry distance, which counts on a different basis from the dashboard).

3. Why we link it to boost on lift-off



Teal: every 4 November road-test sample coasting on fuel cut with the EGR valve closed (950–1,300 rpm). Correlation 0.97. Both fault snapshots sit on the same line, today's further out because the boost excess was larger.

What this shows. With the EGR valve closed, the ECU should calculate close to zero EGR flow. It calculates EGR flow only while boost is still above setpoint after a lift-off, and the amount follows the boost excess. The air model from boost pressure then expects more air than the MAF measures, and the plausibility test fails once that gap is large enough. Today's gap was the largest we have seen (+203 hPa, 16 kg/h).
What it points to. Something keeps the boost up after lift-off: turbo regulating flap or bypass slow to open, a sticking actuator or linkage, a vacuum leak or weak vacuum to the actuators, or a faulty control valve. Less likely, but possible: the MAF under-reads at high flow (sensor characteristic or fitment), or unmetered air enters between the MAF and the turbo inlet. A leaking EGR valve is still unlikely: it would show EGR flow through the whole overrun, not only while boost is high.

4. MAF and sensor checks from the data

Item	Reading	Assessment
New MAF registered	at ECU distance 70,542 km, 94 km before the first trip on 3 Nov	Please confirm the part number (genuine or aftermarket)
MAF learned corrections	idle -0.6 %, load point 1 +0.9 %, load point 2 +0.3 %	Small, normal. Learning has started since 4 Nov (all were 0)
MAF adaptation points 1–4	0	Nothing learned or drifted
Boost pressure sensor, engine off	1,008 hPa (outside 1,013 hPa, air filter 1,010 hPa)	Agrees with outside pressure: no offset. Read shortly after switch-off (coolant 44 °C)
Exhaust pressure before turbine, engine off	1,062 hPa	**About 49 hPa above outside pressure** with the engine off; worth checking

5. Recommended workshop checks (in this order)

1	**Turbo boost control.** Check the turbo regulating flap and bypass actuators move freely through their full travel, and their linkages. With Xentry actuations, or by hand, check they open fully and quickly.
2	**Vacuum supply and control valves.** Check the vacuum lines to the turbo actuators for cracks, splits and loose connections. Check the vacuum level and the boost/flap control valves, and that each actuator holds vacuum.
3	**Exhaust pressure sensor before the turbine.** It reads about 49 hPa above outside pressure with the engine off. Compare it with the boost and ambient sensors at key-on after the engine has fully cooled, and check its pipe for blockage or condensation.
4	**MAF and intake.** Confirm the MAF part number (genuine Mercedes or Bosch, correct for this engine) and the connector. Check the intake between the MAF and the turbo inlet for splits, loose clamps or a disconnected breather (unmetered air).
5	**EGR.** Only if all of the above is in order: the physical EGR tests from our 3 November report. Please do not clear P0101FA before these checks.
6	**Repeat with live recording.** After a repair, or if nothing is found, do a road test with the dongle online and tell us before you set off. We will record boost, setpoint, turbo actuators and the air model during low-speed lift-offs (2nd gear, 25–30 km/h, foot fully off, coast to 10 km/h, 4–5 times) to see whether boost now follows its setpoint down.

6. Method and limitations

• Remote session by AI Mechanic (www.aimechanic.uk) through the Gateway PRO dongle in the vehicle. Read-only: identity, fault memory, the stored fault snapshot, warning-lamp status and selected values from the engine control unit (CR43). Nothing was cleared, coded, adapted or written. Only the engine control unit was read.

• The engine was off by the time of our value read, so section 3 uses the stored fault snapshots and the 4 November road test. It is engineering judgement: it identifies the situation that sets the fault, not the failed part. Confirm with section 5 before replacing parts.