Remote Diagnostic Report

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Mercedes-Benz GLE (W166) · P0101FA follow-up road test

Prepared for the garage · AI Mechanic remote diagnostics · 4 November 2026

Vehicle	Mercedes-Benz GLE, chassis 166 (W166), diesel	VIN	WDC·111
Engine control unit	CR43	Date	4 November 2026
Session	Remote, live recording via the Gateway PRO dongle	Recorded	14:40–15:41 UTC, ~21 km, up to 105 km/h

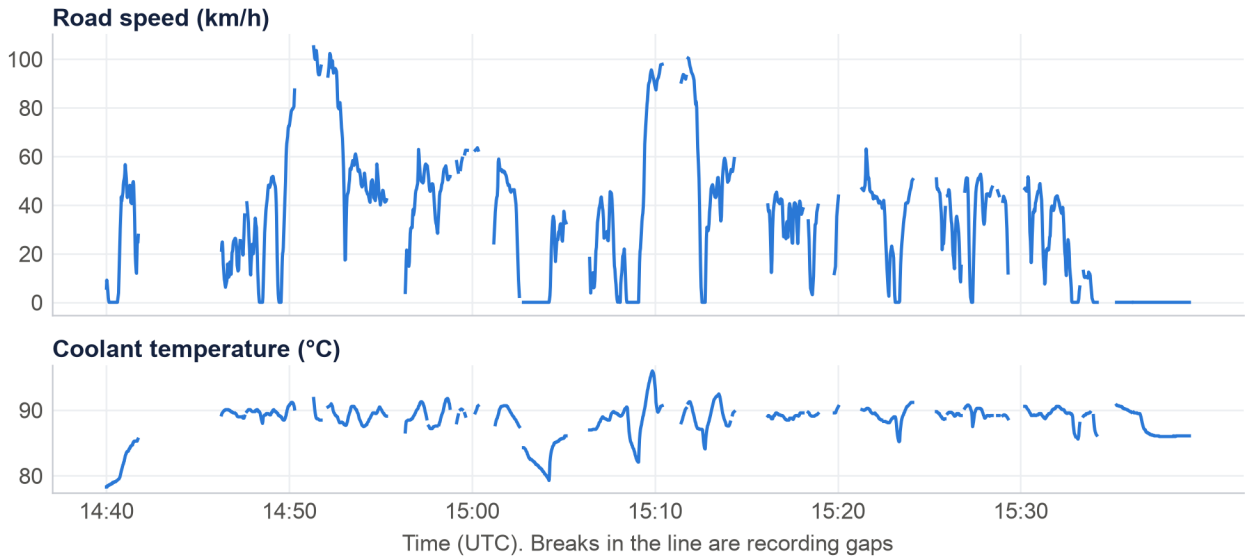
Summary

• **P0101FA did not come back.** No pending or confirmed faults at 15:01, 15:06 and 15:36. Engine warning lamp **off** at 15:16 and 15:52, no stored emission codes.
• **The ECU ran its own air-mass plausibility test during this drive and it passed.** At the start the test showed as "not completed since clear"; by 15:06 it had completed with no failure.
• **All live values were in range**: MAF correction factor 1.0 and drift close to zero, EGR valve follows its demand and closes fully on every overrun, normal air-filter restriction, DPF pressure, rail pressure, temperatures and charging.
• **New finding.** The "EGR flow with the valve closed" that the ECU booked yesterday only appears in the first seconds after lifting off, while boost is still above its setpoint. Across 87 matched overrun samples the two move together almost exactly (correlation 0.96). Once the overrun settles, the ECU model and the MAF agree (median 3 kg/h). Yesterday's fault snapshot sits on the same line.
• **Revised assessment:** a leaking EGR valve is now **less likely** than stated in our 3 November report. The most likely explanation is a **one-off borderline trip** of the plausibility test during a low-speed lift-off, about 94 km after the new MAF was fitted with its adaptation reset. This is likely, not proven: the exact 16 km/h lift-off was not repeated with fast logging.
• **The fault memory had been cleared** before our session today (yesterday's P0101FA and the 15 history codes were gone). Please confirm who cleared it and when.

1. Fault memory and warning lamp during the session

Time (UTC)	Check	Result
≈14:05	Full fault memory, engine idling at the workshop	No pending, confirmed or history faults. All entries only "test not yet run". P0101FA: test not completed since clear
15:01	Pending / confirmed faults, during the road test	None
15:06	Full fault memory	None failed. **P0101FA test completed and passed**; 72 further monitors completed since the morning
15:16	Engine warning lamp (MIL) and emission fault count	Lamp **off**, 0 codes
15:36	Full fault memory	None failed, P0101FA still passed, 5 more monitors completed
15:52	Engine warning lamp	Lamp **off**, 0 codes (car parked)

2. The drive and live values with a warm engine



Road speed and coolant temperature over the recorded drive.

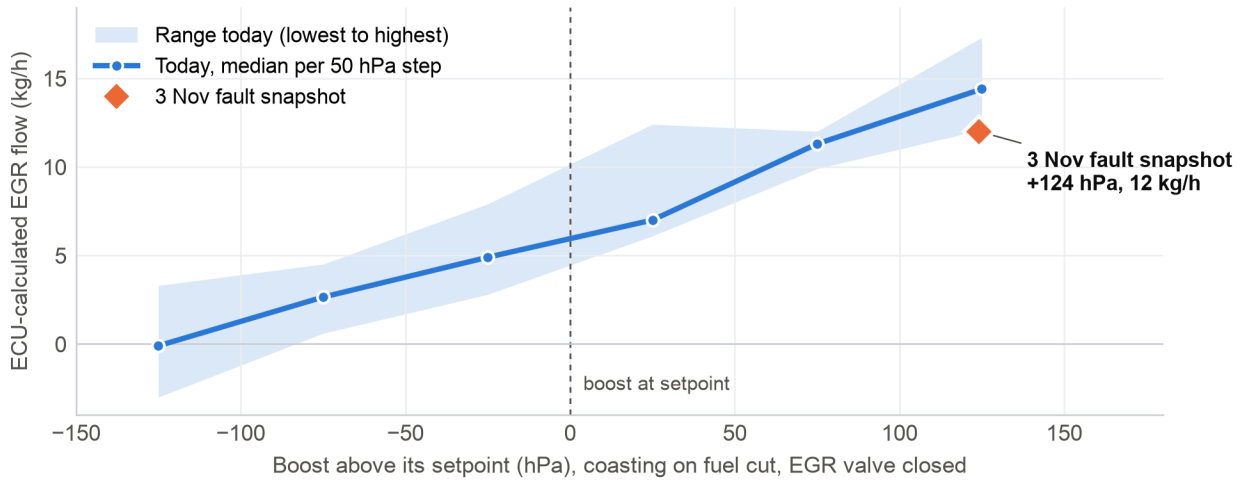
1297 warm-engine samples between 14:40 and 15:41 UTC, recorded at about 1 sample per second on the workshop Wi-Fi and one every 1–3 seconds on the road.

Value	Recorded	Assessment
EGR valve actual vs demand (steady driving)	90% of samples within -4 / +4 %	Follows demand. Larger gaps only for a second on quick pedal changes
EGR valve on overrun	−0.2 to 0.3 % (demand 0 %)	Closes fully every time
MAF drift / correction factor	-0.3 – 1.5 kg/h / 1.0	Nothing being corrected
Air-filter pressure drop	median 4 hPa, max 24 hPa	Filter not restricted
DPF differential pressure	3 – 60 hPa	Low, filter not loaded
Rail pressure	241 – 1910 bar	Follows load
Coolant / oil temperature	78 – 96 / 88 – 98 °C	Thermostat and cooling normal
Charge-air temperature	max 34 °C	Intercooler working
Supply voltage	mostly 14.2–14.4 V; 10.4–10.9 V only at engine restarts	Charging normal; start/stop restarts clean
Lambda	active once warm	Normal (inactive while cold is expected)

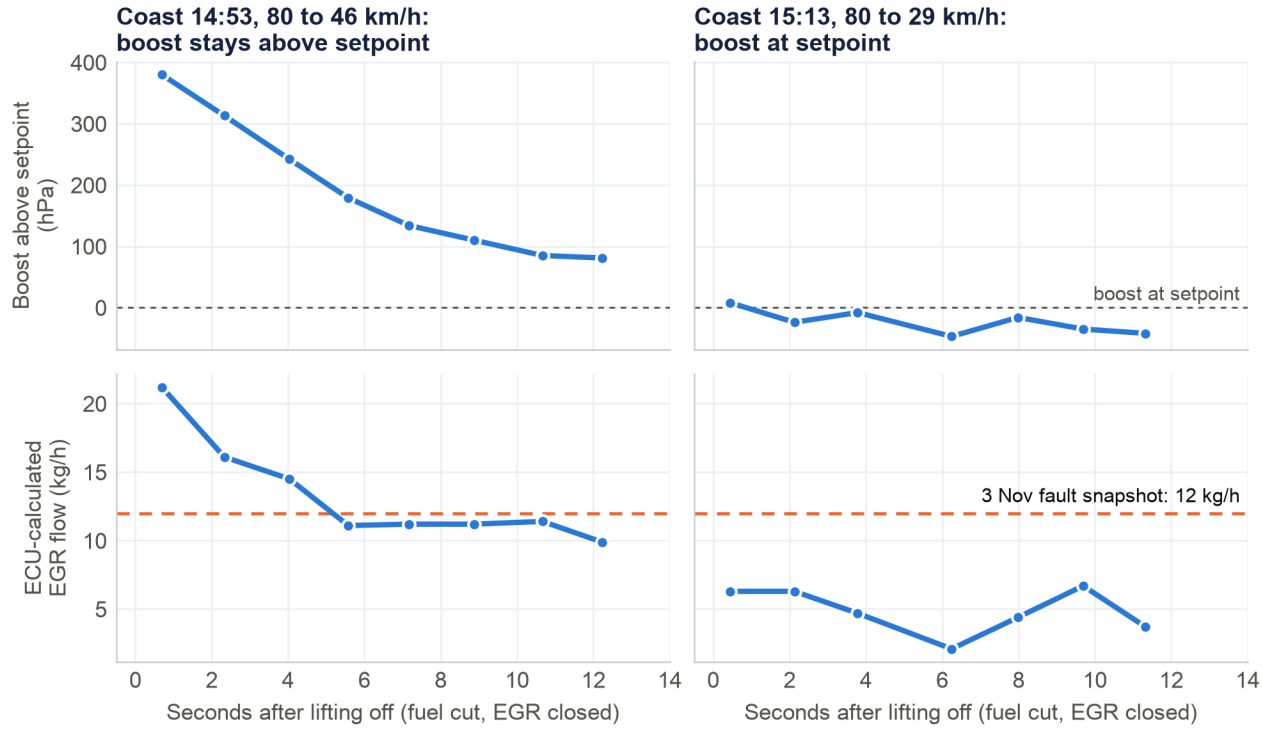
3. Yesterday's fault snapshot compared with today

Same conditions: coasting on fuel cut, 950–1,300 rpm, warm engine, EGR valve closed. "Air vs boost" is air per stroke divided by charge-air density, so samples at different boost can be compared. A lower number means less fresh air than the boost pressure suggests.

	Speed	rpm	MAF kg/h	Air / stroke	Boost / setpoint hPa	ECU EGR flow (valve closed)	Air vs boost
Fault snapshot, 3 Nov	16	1,100	80	608 mg	**1,360 / 1,236** (+124)	**12 kg/h**	133
Today, overrun settled (75 samples)	18–64	1,169	89	630 mg	1,178 / 1,249 (-71)	**3 kg/h** (-3 to 11)	155
Today, just after lift-off (10 samples)	29–53	1,178	88	626 mg	1,344 / 1,250 (+99)	**12 kg/h** (10 to 38)	135



Coasting on fuel cut with the EGR valve closed, 87 samples today. The line is the median in each 50 hPa step of boost above setpoint, and the shaded band is the full range.



Two coasts from about 80 km/h today. When boost stays above its setpoint after lift-off (left), the ECU books EGR flow at around the 3 November level. When boost is at its setpoint (right), it stays low.

What this shows. A leaking EGR valve would let exhaust into the intake all the time it is closed, so the ECU would book EGR flow through the whole overrun. Instead it books it only while boost is still above setpoint just after a lift-off, and the amount follows the excess boost (correlation 0.96). Right after a lift-off the intake is still pressurised while the MAF already measures the lower flow, and the ECU's model books that gap as EGR. Yesterday's snapshot (+124 hPa, 12 kg/h) fits the same pattern. It set at only 16 km/h, a very low-speed lift-off, close to the limit of the plausibility test.

4. Other observations

• **Boost on hard acceleration:** on brief, hard tip-ins at 1,300–1,700 rpm, boost was 0.5–1.7 bar below its setpoint for 1–2 seconds, then reached or exceeded it (for example 2.46 bar against 2.70 bar at 2,460 rpm). This looks like normal turbo lag. No underboost fault was stored. At 1–3 samples per second the full spool-up is

not visible.

• **Start/stop** stopped and restarted the engine normally at standstill (14:49, 15:03, 15:09, 15:13). Engine state "ready" each time, clean restarts.

• **Engine light-off at the workshop:** idle 750 rpm steady, cold-start values normal, EGR and MAF steady during warm-up.

5. Next driving cycle: instructions for the driver

1	**Before you set off.** Leave the AI Mechanic dongle plugged in. Do **not** clear fault codes. If you want us to record live during the drive, message us before you leave and we will send you the phone-hotspot setup.
2	**Warm up.** Drive normally for at least 10 minutes until the temperature gauge reads normal (about 80–90 °C).
3	**Low-speed lift-off (the original fault condition, most important).** On a quiet road: accelerate briskly in 2nd gear to about 25–30 km/h, then take your foot **completely** off the pedal and let the car coast in gear down to about 10 km/h. Repeat 4–5 times with about 30 seconds of normal driving between.
4	**Medium-speed coasts.** From about 50 km/h, foot fully off, coast in gear down to about 15 km/h. Repeat 3 times.
5	**One firm acceleration.** If safe: 3rd gear from about 1,200 rpm, pedal to the floor for 4–5 seconds up to about 3,500 rpm. Once only.
6	**Normal driving.** At least 20 minutes of mixed driving in total, ideally over several days of normal use.
7	**Report.** Message us when you are back, and straight away if the engine warning light comes on, the car loses power or smokes. We will scan the fault memory remotely within minutes.

6. Next steps for the workshop

• **If P0101FA does not return within 2 weeks of normal use** (our remote scans show it passed and nothing pending): treat it as a one-off trip after the MAF replacement. No parts needed.

• **If it returns,** especially again on a low-speed lift-off: we will read the new fault snapshot and compare it with this report. Then go ahead with the physical EGR tests from our 3 November report (EGR closed against open at warm idle, temporary blanking test, inspect the valve seat, plate and cooler bypass).

• **Please confirm** who cleared the fault memory between our 3 November read and this session, and the date and mileage of the Xentry software update, to complete the history.

7. Method and limitations

• Remote session by AI Mechanic (www.aimechanic.uk) through the Gateway PRO dongle in the vehicle, over the workshop Wi-Fi and then a phone hotspot. Read-only: fault memory, warning-lamp status and live values from the engine control unit (CR43). Nothing was cleared, coded, adapted or written.

• Values were read 1–3 times per second, in groups. Values in different groups are up to about 1 second apart, so moments right after a lift-off are approximate.

• The recording has gaps (about 14:42–14:47 when the hotspot dropped, about one minute between recording blocks, and 15:44–15:53), and covers about 21 km of the drive. The low-speed lift-off test (section 5, step 3) was not completed during this session.

• The assessment in section 3 is engineering judgement from the recorded data. It changes the leading suspect in our 3 November report from "EGR not sealing" to "one-off borderline plausibility trip". Confirm with the next driving cycle before replacing parts.