Check engine light with fault code P300EB in the CDI control unit CDI (N3/28)

Topic number	LI49.20-N-076565
Version	2
Function group	49.20 - Exhaust gas aftertreatment
Date	9/24/24
Validity	Model 907 with engine 642
Reason for change	Remedy Update

Complaint

Check engine light with fault code: P300E3B the efficiency of component 'SCR catalytic converter' is not sufficient, is present in the CDI control unit CDI (N3/28).

Cause

This subject is currently being analyzed for all 907s equipped with the OM642 engine. Follow the instructions related to this subject to collect information about your vehicle. After completing the checks, please open a TIPS case and attach the collected information.

Remedy

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IMPORTANT: Do not replace any components unless instructed through TIPS!

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Please complete the following inspections and tests:

1. Perform a tailpipe wipe test and document the results along with photographs.

2. Inspect the NOx connectors, pins, crimps, and harnesses between N37/7 and N37/8 to F152f59, Z7108, W105/3, and X30/81.

3. Provide actual values/sensor plausibility test results for all pressure and temperature sensors with the engine completely cooled off for at least eight hours, the key on, and the engine off. Repeat the test with the engine/exhaust at operating temperature and the engine idling.

4. Perform a pressurized smoke test of the intake, charge air system, and exhaust to verify that there are no leaks. Apply overpressure (not exceeding 26 psi) from the exhaust pipe end and seal the system at the clean airline toward the air filter housing. Manipulate all components during the smoke test.

5. Provide diesel particulate filter actual values and regeneration history.

6. Inspect the SCR temperature sensor wirings and pins for electrical and physical correctness. Determine whether this sensor reaches operating temperature while driving and document the time it takes to reach operating temperature.

7. Inspect the Adblue injector nozzle/s for clogging or leaking, and provide photographs.

8. With the Adblue injector/s removed from the exhaust system, perform two to three Adblue pressure tests and check for leaks. If leaks are detected, provide photographs.

9. Collect an Adblue sample, test fluid quality, and provide notes on its condition and quantity (color, clarity, separation, odor, etc.), along with a photograph for review. Also, provide a photograph of the spray pattern.

10. Separate the exhaust pipe downstream of the diesel particulate filter, inspect the diesel particulate filter and SCR, and note any soot, blockage, or damage. Provide photographs.

11. Inspect the SCR catalyst interior for dried Adblue residue, and provide photographs.

12. Perform several test drives at varying speeds to gather graphical illustrations (screenshots of the completed graphs in PDF format) of signals from NOx sensors. Provide three to four graphs or actual values of operational NOx sensors with XENTRY; see attachments for examples. Additionally, provide one graph/screenshot of the vehicle idling at operating temperature. Disconnect the Adblue injection valve, drive for approximately 30 minutes to exhaust all Adblue within the SCR catalytic converter, and provide two to three additional NOx graphs/screenshots with the sensor disconnected. (see attachments for needed graphs)

Once all of the above inspections have been completed, open a TIPS case and attach the gathered information.

Attachments	
File	Description
NOx Unplugged.pdf	NOx Unplugged 1 Good
NOx Unplugged 2.pdf	NOx Unplugged 2 Good
NOx Plugged in Failed.pdf	NOx Plugged in Failed 1
NOx Plugged in Failed 2.pdf	NOx Plugged in Failed 2

Disclaimer

NOTE: The information contained in this document is intended for use by trained, professional technicians with the knowledge to properly and safely perform diagnosis and repairs on Mercedes-Benz vehicles, using Mercedes-Benz approved tools and equipment. It informs service technicians about conditions that could occur in certain vehicles and provides information that could assist in proper vehicle diagnosis, service, or repair. It does not indicate that a defect is present in any vehicle referenced in this document nor does it imply warranty coverage. DO NOT assume that a symptom or condition, or a described cause of a symptom or condition, affects any particular vehicle or groups of vehicles, or that a described repair applies to any particular vehicle or groups of vehicles. There can be multiple causes resulting in the same or similar symptoms or conditions described in this document, and trained professional service technicians must use their diagnostic skills to make evaluations on a case-by-case basis. The information contained in this document does not guarantee warranty coverage nor does it extend the vehicle's warranty in any way.

Symptoms
Communication/information > Information display > Indicator lamp > Malfunction
Overall vehicle > Networking > Diagnosis/software > Current problems
Communication/information > Information display > Displays > Multifunction display > Multifunction display, error messages > Drivetrain - Malfunction (white warning message)
Power generation > Engine management > Function > Malfunction

Control unit/fault code	
Control unit	Fault text
N3/28 - Motor electronics 'CDI61NFZ' for combustion engine 'OM642' (CDI) (CR61NFZ)	P300E3B - The efficiency of component 'SCR catalytic converter' is not sufficient.

Operation numbers/damage codes				
Op. no.	Operation text	Time	Damage code	Note