

Diagnosis - Diagnostic Trouble Code (DTC) Memory

Preliminary work:

Engine Test and Adjustment DM, Engine, Volume 1, Section B1

The individual test steps (e. g. ignition coils, distributor cap etc.) are organized into a test program.

If a complaint is determined through engine diagnosis in Engines, Volume 1, which refers to a specific test step, only the specific test step should be performed and not the entire test program.

The DTC readout is cleared by switching off the ignition. With the engine running, a DTC currently displayed can be cleared by pressing the start button for longer than 5 seconds.

Diagnostic Trouble Code (DTC) Readout with Impulse Counter Scan Tool

The ignition control module (N1/3) is equipped with diagnostics **without** DTC memory. In other words, the control module (N1/3) does not have the capability to store DTC's for recall at a later date.

The DTC readout can only be performed with the engine running. DTC's ranging from 1 to 17 may appear on the display of the impulse counter scan tool.

The DTC 1 indicates: No fault recognized in system.

All further DTC's refer to a particular malfunction source. If there are multiple system malfunctions, the malfunction assigned with the lowest DTC will be displayed first.

If the DTC indicated first reappears after more than two DTC readouts, then no further malfunctions are present in the system.

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Preparation for Test with Impulse Counter Scan Tool

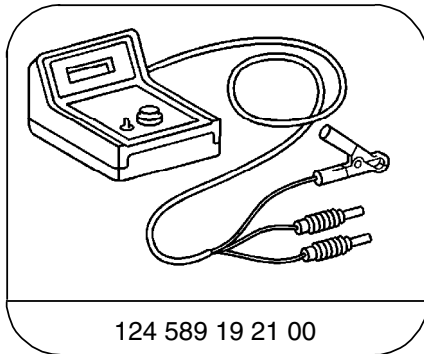
- Connect impulse counter scan tool according to connection diagram, perform DTC readout (see section 0).
Ignition control module socket 8.

Note:

- Check voltage between socket 1 and socket 16 of data link connector X11/4, nominal value 6 – 12 V.
- Start engine and run for at least 8 seconds at 3100 – 3600 rpm with vacuum hose connected to ignition control module (N1/3).
- Pull off vacuum hose with engine at idle.

- With engine at idle, move transmission range selector lever from “P” or “N” position to “D” and back again.
- Run engine for at least 2 seconds above 5000 rpm.
- With engine at idle, reconnect vacuum hose.
- Raise engine speed to approx. 2300 rpm and then briefly apply wide open throttle (wide open throttle contact must close briefly).
- Engine at idle.

Special Tools



124 589 19 21 00

Pulse counter

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DTC	Possible cause	Remedy/test step ¹⁾
1	No fault in system	–
2	Maximum retard setting on at least one cylinder has been reached	24 ⇒ 1.0
3	Engine coolant temperature sensor (B11/2)	24 ⇒ 2.0
4	Load sensor in ignition control module (N1/3)	24 ⇒ 3.0
5	Knock sensors (A16) 1 and/or 2	24 ⇒ 4.0
6	Camshaft position sensor (L5/1)	24 ⇒ 5.0
7	Knock control–output switch in ignition control module (N1/3)	Ignition control module (N1/3)
8, 9	Transmission overload protection switch (S65)	24 ⇒ 6.0
10	Data exchange from ignition control module (N1/3) to CFI control module (N3) defective	24 ⇒ 7.0
11	Reference resistor (DI) (R16/2)	24 ⇒ 8.0
12	TN engine speed signal is outside the tolerance range	24 ⇒ 9.0
13	Wide open throttle contact does not open	24 ⇒ 10.0
14	Closed throttle position contact does not open	24 ⇒ 11.0
15	Ignition coil 1 output from ignition control module (N1/3)	24 ⇒ 12.0
Engine 119 only! 16	Ignition coil 2 output from ignition control module (N1/3)	24 ⇒ 13.0
17	Crankshaft position sensor (L5)	23 ⇒ 3.0, 24 ⇒ 14.0

¹⁾ Observe Preparation for Test, see 22.