

Output Diagnostic Test Mode (DTM) (scan tool function 03)

Note:

There are two different transmissions:

- ◆ *Transmission with hydraulic controls -E17-, on which the transmission input speed sensor (inductive sensor) is secured to the underside of the valve body.*

- ◆ *Transmission with hydraulic regulation -E18/2-, on which the transmission input speed sensor (camshaft position sensor) is secured behind the valve body at the transmission housing.*

For information on which transmission is installed, refer to tables from the following Repair Manual:

⇒ [Repair Manual, 5 Spd. Automatic Transmission 01V, Repair Group 00](#)

**Output Diagnostic Test Mode (DTM) for transmission with hydraulic regulation -E17-
⇒ [page 01-164](#)**

Output Diagnostic Test Mode (DTM) for transmission with hydraulic regulation -

E18/2- ⇒ [page 01-171](#)

Output Diagnostic Test Mode (DTM) (scan tool function 03), transmissions with hydraulic regulation -E17-

Note:

- ◆ *The Output Diagnostic Test Mode (DTM) can only be performed when the ignition is switched off, the selector lever is in position "P", the engine is not running, and the vehicle is stationary.*
- ◆ *DTM will be terminated when the engine is started.*
- ◆ *The function of solenoid valves 1 -N88-, 2 -N89-, 3 -N90- and the solenoids for the selector lever lock are checked acoustically during the DTM. Avoid noise in the surrounding area during the acoustic check, because the switching noise (clicking) of the actuators is very quiet.*
- ◆ *The solenoid valves 4 -N91-, 5 -N92-, 6 -N93- and 7 -N94- are activated during the DTM. A direct functional check of these valves is not possible. But possible electrical faults which occur during the activation, will be recognized by the On Board Diagnostic (OBD) and stored in the DTC memory.*

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- ◆ *When performing the Output Diagnostic Test Mode (DTM), the individual actuators will be activated until the → button is pressed.*
- ◆ *Only one complete DTM is possible after switching the ignition on. To repeat DTM, the ignition must be switched off and on again.*

Activation sequence
1. Solenoid Valve 1 -N88-
2. Solenoid Valve 2 -N89-
3. Solenoid Valve 3 -N90-
4. Shift Lock solenoid -N110-
5. Solenoid Valve 4 -N91-
6. Solenoid Valve 5 -N92-
7. Solenoid Valve 6 -N93-
8. Solenoid Valve 7 -N94-
9. Kick-down Switch -F8- (Kick-down for air conditioner)
10. Solenoid Valve Relay

Test sequence

- Connect VAS 5051 tester or V.A.G 1551 scan tool and enter address word 02 for "Control module for Transmission electronics" ⇒ [page 01-40](#) .

Ignition must be switched off during this process.

Rapid data transfer HELP
Select function XX



Indicated on display:

- Press keys 0 and 3. (03 selects the function "Output Diagnostic Test Mode").

Rapid data transfer Q
03 - Output Diagnostic Test Mode



Indicated on display

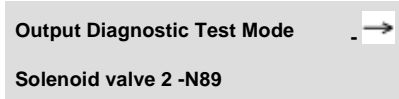
- Press Q- button to confirm entry.

Output Diagnostic Test Mode →
Solenoid valve 1 -N88



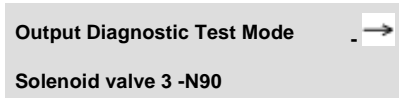
Indicated on display

- Valve is activated (clicks). To switch to next actuator press → key.
- If valve does not click, perform electrical check ⇒ [Page 01-273](#) .
- ◆ Malfunction is stored in DTC memory, see DTC table ⇒ [Page 01-45](#) .



← Indicated on display

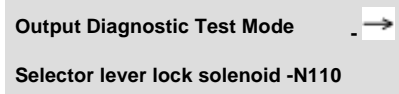
- Valve is activated (clicks) To switch to next actuator press → key.
- If valve does not click, perform electrical check ⇒ [Page 01-273](#) .



← Indicated on display

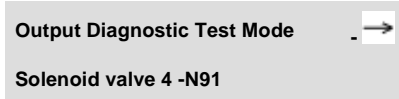
- Valve is activated (clicks). To switch to next actuator press → key.
- If valve does not click, perform electrical check ⇒ [Page 01-273](#) .

Malfunction is stored in DTC memory, DTC table ⇒ [Page 01-45](#) .



← Indicated on display

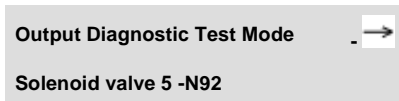
- Solenoid is activated (clicks). Switch to next actuator press → key.
- If solenoid does not click, perform electrical check ⇒ [Page 01-273](#) .
- ◆ Malfunction is stored in DTC memory, DTC table ⇒ [Page 01-45](#) .



← Indicated on display

- Valve is activated (clicks). To switch to next actuator press → key.

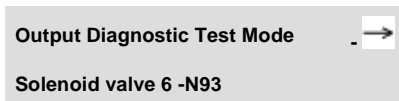
Electrical malfunctions will be stored in DTC memory. See DTC table ⇒ [Page 01-45](#) .



← Indicated on display

- Valve is activated (clicks). To switch to next actuator press → key.

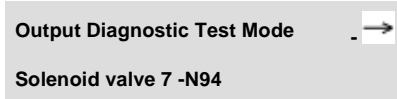
Electrical malfunctions will be stored in DTC memory. See DTC table ⇒ [Page 01-45](#) .



← Indicated on display

- Valve is activated (clicks). Switch to the next actuator press → key.

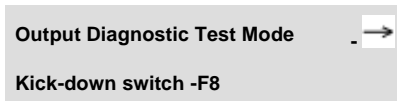
Electrical malfunctions will be stored in DTC memory. See DTC table ⇒ [Page 01-45](#) .



← Indicated on display

- Valve is activated (clicks). To switch to next actuator press → key.

Electrical malfunctions will be stored in DTC memory. See DTC table ⇒ [Page 01-45](#) .



← Indicated on display


Notes:

- ◆ *It is not the kick-down switch -F8-, but the switch-off function for the air conditioner in transmission control module -J217- which is activated.*
- ◆ *If the kick-down switch is operated, the Transmission Control Module (TCM) grounds the output to air conditioner. This briefly switches off the air conditioner compressor.*
- ◆ *Can be disregarded here.*
- ◆ *The signal can be checked in measured value block 011 ⇒ [01-186](#) .*
- ◆ *For checking function of Kick-down switch -F8- ⇒ [Page 01-273](#) Electrical check.*

⇒


- Press → key to switch to the next actuator.

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Output Diagnostic Test Mode 
Solenoid valve relays




Indicated on display

- Solenoid valves activated in position "P" are activated (click), press  key to switch to the next actuator.

◆ Can be disregarded.


- Press  key.

Output Diagnostic Test Mode 
End



Indicated on display

- Press  key

Function is unknown or 
cannot be performed at this time



Indicated on display

- Pressing the  key will terminate the Output Diagnostic Test Mode.

Rapid data transfer **HELP**
Select function XX



Indicated on display:

- To repeat Output Diagnostic Test Mode, the ignition must be switched off and then on again. Now select function 03 - Output Diagnostic Test Mode again.

Output Diagnostic Test Mode (DTM) (scan tool function 03), transmissions with hydraulic regulation -E18/2-

Note:

- ◆ *The Output Diagnostic Test Mode (DTM) can only be performed when the ignition is switched off, the selector lever is in position "P", the engine is not running, and the vehicle is stationary.*
- ◆ *DTM will be terminated if the engine is started.*
- ◆ *The function of solenoid valves 1 -N88-, 2 -N89-, 3 -N90- and the solenoids for the shift lock are checked acoustically during DTM. Avoid noise in the surrounding area during the acoustic check, because the switching noise (clicking) of the final controls is very quiet.*
- ◆ *The pressure control valves 1 -N215-, 2 -N216-, 3 -N217- and 4 -N218- are activated during DTM. A direct functional check of these valves is not possible. But possible electrical faults which occur during the activation will be recognized and stored in DTC memory.*

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- ◆ *When performing the Output Diagnostic Test Mode (DTM) the individual actuators will be activated until the → button is pressed.*
- ◆ *Only one complete DTM is possible after switching the ignition on. To repeat DTM, the ignition must be switched off and on again.*

Activation sequence
1. Solenoid Valve 1 -N88-
2. Solenoid Valve 2 -N89-
3. Solenoid Valve 3 -N90-
4. Shift Lock solenoid -N110-
5. Pressure Control Valve -1- for Auto. Transmission -N215-
6. Pressure Control Valve -2- for Auto. Transmission -N216-
7. Pressure Control Valve -3- for Auto. Transmission -N217-
8. Pressure Control Valve -4- for Auto. Transmission -N218-
9. Voltage supply for solenoid valves

Test sequence

- Connect VAS 5051 tester or V.A.G 1551 scan tool and enter address word 02 for "Control module for transmission electronics" ⇒ [page 01-40](#) .

Ignition must be switched off during this process.

Rapid data transfer HELP
Select function XX



Indicated on display:

- Press keys 0 and 3. (03 selects function "Output Diagnostic Test Mode").

Rapid data transfer Q
03 - Output Diagnostic Test Mode



Indicated on display

- Confirm entry with Q button.

Output Diagnostic Test Mode (DTM)
Shift valve 1 ⇒ Solenoid Valve 1 -N88



Indicated on display:

- Valve is activated (clicks), to switch to the next actuator press → key.
- If valve does not click, perform electrical check ⇒ [Page 01-273](#) .
- ◆ Malfunction is stored in DTC memory, see DTC table ⇒ [Page 01-45](#)

Output Diagnostic Test Mode (DTM)
Shift valve 2 ⇒ Solenoid Valve 2 -N89



Indicated on display:

- Valve is activated (clicks) To switch to next actuator press → key.
- If the valve does not click, perform electrical check ⇒ [Page 01-273](#) .
- ◆ Malfunction is stored in DTC memory, see DTC table ⇒ [Page 01-45](#)

Output Diagnostic Test Mode (DTM)
Shift valve 3 ⇒ Solenoid Valve 3 -N90



Indicated on display:

- Valve is activated (clicks). To switch to the next actuator press → key.
- If valve does not click, perform electrical check ⇒ [Page 01-273](#) .
- ◆ Malfunction is stored in DTC memory, see DTC table ⇒ [Page 01-45](#)

Output Diagnostic Test Mode (DTM)
Shift lock Solenoid -N110



Indicated on display:

- Solenoid is activated (clicks). To switch to the next actuator press →key.
- If solenoid does not click, perform electrical check ⇒ [Page 01-273](#) .
- ◆ Malfunction is stored in DTC memory, DTC table ⇒ [Page 01-45](#)

Output Diagnostic Test Mode (DTM)
Press. control valve -1- for auto. trans. -N215



Indicated on display:

- Pressure control valve -N215- is activated (clicks). To switch to the next actuator press → key.
- ◆ Electrical malfunctions will be stored in DTC see DTC table ⇒ [Page 01-45](#) .

Output Diagnostic Test Mode (DTM)
Press. control valve -2- for auto. trans. -N216



Indicated on display:

- Pressure Control valve -N216- is activated (clicks). To switch to the next actuator press → key.
- ◆ Electrical malfunctions will be stored in DTC, see DTC table ⇒ [Page 01-45](#) .

Output Diagnostic Test Mode (DTM)
Press. control valve -3- for auto. trans -N217



Indicated on display:

- Pressure Control valve -N217- is activated (clicks). To switch to the next actuator press → key.
- ◆ Electrical malfunctions will be stored in DTC, see DTC table ⇒ [Page 01-45](#) .

Output Diagnostic Test Mode (DTM)
Press control valve -4- for auto. trans. -N218

↖ Indicated on display:

- Pressure Control valve -N218- is activated (clicks) To switch to next actuator press → key.

◆ Electrical malfunctions will be stored in DTC memory, see DTC table ⇒ [Page 01-45](#)

Note:

Output Diagnostic Test Mode (DTM)
Press reg. valve -5- for auto trans. -N233

↖ *"Pressure Regulating Valve -5- for Automatic Transmission -N233-" could now be displayed erroneously due to a software error, even though it does not exist. Disregard this display. Press → button to switch to the next actuator.*

Output Diagnostic Test Mode (DTM)
Voltage supply for solenoid valves


↖ Indicated on display:

Solenoid valves activated in position "P" are activated (click). Press → key to switch to the next actuator.

◆ Can be disregarded.

- Press → key.

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Function is unknown or 
cannot be carried out at the moment

← Indicated on display

- Pressing the → key will terminate Output Diagnostic Test Mode.

Rapid data transfer **HELP**
Select function XX

← Indicated on display:

- To repeat Output Diagnostic Test Mode, switch ignition off and then on again. Now select function 03 - Output Diagnostic Test Mode again.

DTC Memory, erasing (scan tool function 05)

Requirement:

- DTC memory checked ⇒ [page 01-43](#) .

After DTC memory has been checked:

Rapid data transfer HELP
Select function XX



Indicated on display:

- Press keys 0 and 5. (With function 05 "Erase DTC memory" is entered)

Rapid data transfer Q
05 Erase DTC memory



Indicated on display:

- Confirm entry with Q button.

WARNING!
DTC memory was not checked



Indicated on display:

Note:

If the ignition was switched off e.g. between checking the DTC memory and erasing DTC memory, the DTC memory is then not erased.

- Exactly follow the work sequence. The DTC memory must first be checked.

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 Rapid data transfer

DTC memory is erased!

⚡ Indicated on display:

(The DTC memory will be erased approx. 5 seconds. after the display appears.)

The DTC memory is now erased.

Note:

Wait about 1 minute before checking the DTC memory again.

System cannot be checked!

⚡ Indicated on display:

1 Fault recognized !

00811 3333

System cannot be checked

⚡ Print out with printer switched on:

Transmission Control Module (TCM) -J217- was not given sufficient time to recognize faults.

- Wait about 1 minute before checking the DTC memory again.
- After checking and erasing DTC memory, test drive the car and check DTC memory again.

When the DTC memory is being checked, the following display should appear:

"No DTC recognized!"