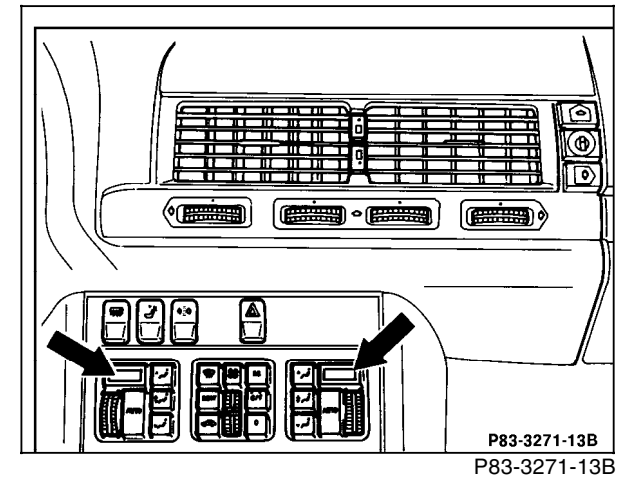


Diagnosis – Diagnostic Trouble Code (DTC) Memory

Notes for Diagnosis

- The A/C pushbutton control module (N22) has DTC memory and the capability to display the codes via the temperature display windows (arrows) on the A/C pushbutton control panel. The stored DTC's will remain in memory even with the vehicle battery disconnected.
- The DTC memory can also be read using the Hand-Held Tester (HHT).
- The DTC readout differentiates between continuous as well as intermittent faults.

Figure 1



Diagnosis – Diagnostic Trouble Code (DTC) Memory

Preparation for Test

1. Turn left temperature selector wheel to “red” detent.
2. Turn right temperature selector wheel to “blue” detent.
3. Turn ignition **ON**.
4. Press **AUTO**.
5. Within 20 seconds simultaneously press **REST** and **0** for > 2 seconds.
6. The display will show permanent DTC's stored in memory (see table on following page). Press right **AUTO** until all stored DTC's are displayed. Record each DTC as it is displayed.
7. Each malfunction (short circuit, open circuit, etc.) has a specific DTC. The letter “E” (Error) along with the hundredth digit of the DTC is displayed in the left window. The tenth and single digit of the DTC is displayed in the right window. By pressing the right **AUTO** button the next DTC stored in memory will be displayed.

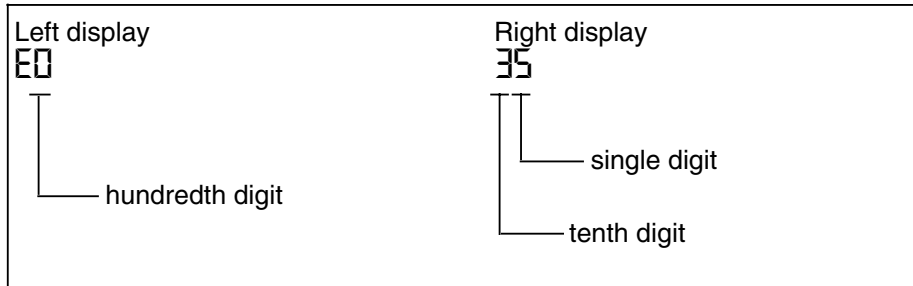
8. Turn ignition **OFF** and repair recorded DTC's according to the respective diagnostic chart.
9. Turn ignition **ON** and press left **AUTO** button. A “d” (delete) is displayed in the left window.

By pressing the right **AUTO** button the DTC will be deleted from memory. Continue to press the left and right **AUTO** buttons until all DTC's are deleted from memory (display will show “E0 00”).

10. Return temperature selector wheels to normal setting.

Note:

The red diode in the recirculation switch will blink during the test as of software status 6.2 (Bosch) or 06 (Kammerer).



Diagnosis – Diagnostic Trouble Code (DTC) Memory

Diagnostic Trouble Code (DTC)	Possible Cause	Test Step/Remedy ¹⁾
E0 01	No malfunction stored in memory	–
E0 02	A/C pushbutton control module (N22)	A/C pushbutton control module (N22).
E0 03	Rear A/C pushbutton control module (N22/3)	Rear A/C pushbutton control module (N22/3).
E0 06	Connection to switchover valve block (Y11)	Wiring.
E0 07	Data exchange (CAN B), short circuit	Wiring.
E0 08	Data exchange (CAN A), short circuit	Wiring.
E0 09	Data exchange (CAN A and B), short circuit	Wiring.
E0 10	Repeat DTC readout	–
E0 11	Data exchange (CAN B), open circuit	Wiring.
E0 12	Data exchange (CAN A), open circuit	Wiring.
E0 13	Connection to rear A/C pushbutton control module	Wiring.
E0 14	Data exchange (CAN B), open circuit (rear A/C control module)	Wiring.
E0 15	Data exchange (CAN A), open circuit (rear A/C control module)	Wiring.

¹⁾ Observe Preparation for Test, see 22.

Diagnosis – Diagnostic Trouble Code (DTC) Memory

Diagnostic Trouble Code (DTC)	Possible Cause	Test Step/Remedy ¹⁾
E0 16	In-car temperature sensor (B10/4), short circuit ²⁾	23 ⇒ 4.0
E0 17	In-car temperature sensor (B10/4), short circuit ³⁾	23 ⇒ 4.0
E0 18	In-car temperature sensor (B10/4), open or short circuit ²⁾	23 ⇒ 4.0
E0 19	In-car temperature sensor (B10/4), open or short circuit ³⁾	23 ⇒ 4.0
E0 24	Left heater core temperature sensor (B10/2), short circuit ²⁾	23 ⇒ 7.0
E0 25	Left heater core temperature sensor (B10/2), short circuit ³⁾	23 ⇒ 7.0
E0 26	Left heater core temperature sensor (B10/2), open or short circuit ²⁾	23 ⇒ 7.0
E0 27	Left heater core temperature sensor (B10/2), open or short circuit ³⁾	23 ⇒ 7.0
E0 28	Right heater core temperature sensor (B10/3), short circuit ²⁾	23 ⇒ 8.0
E0 29	Right heater core temperature sensor (B10/3), short circuit ³⁾	23 ⇒ 8.0
E0 30	Right heater core temperature sensor (B10/3), open or short circuit ²⁾	23 ⇒ 8.0
E0 31	Right heater core temperature sensor (B10/3), open or short circuit ³⁾	23 ⇒ 8.0
E0 32	Outside temperature sensor (B10/5), short circuit ²⁾	23 ⇒ 5.0
E0 33	Outside temperature sensor (B10/5), short circuit ³⁾	23 ⇒ 5.0

1) Observe Preparation for Test, see 22.

2) Continuous faults.

3) Intermittent faults.

Diagnosis – Diagnostic Trouble Code (DTC) Memory

Diagnostic Trouble Code (DTC)	Possible Cause	Test Step/Remedy ¹⁾
E0 34	Outside temperature sensor (B10/5), open or short circuit ²⁾	23 ⇒ 5.0
E0 35	Outside temperature sensor (B10/5), open or short circuit ³⁾	23 ⇒ 5.0
E0 36	Evaporator temperature sensor (B10/6), short circuit ²⁾	23 ⇒ 6.0
E0 37	Evaporator temperature sensor (B10/6), short circuit ³⁾	23 ⇒ 6.0
E0 38	Evaporator temperature sensor (B10/6), open or short circuit ²⁾	23 ⇒ 6.0
E0 39	Evaporator temperature sensor (B10/6), open or short circuit ³⁾	23 ⇒ 6.0
E0 40	ECT sensor (B10/8), short circuit ²⁾	23 ⇒ 9.0
E0 41	ECT sensor (B10/8), short circuit ³⁾	23 ⇒ 9.0
E0 42	ECT sensor (B10/8), open or short circuit ²⁾	23 ⇒ 9.0
E0 43	ECT sensor (B10/8), open or short circuit ³⁾	23 ⇒ 9.0
E0 44	Refrigerant pressure sensor (B12), short circuit ²⁾	23 ⇒ 10.0
E0 45	Refrigerant pressure sensor (B12), short circuit ³⁾	23 ⇒ 10.0
E0 46	Refrigerant pressure sensor (B12), open or short circuit ²⁾	23 ⇒ 10.0
E0 47	Refrigerant pressure sensor (B12), open or short circuit ³⁾	23 ⇒ 10.0

1) Observe Preparation for Test, see 22.

2) Continuous faults.

3) Intermittent faults.

Diagnosis – Diagnostic Trouble Code (DTC) Memory

Diagnostic Trouble Code (DTC)	Possible Cause	Test Step/Remedy ¹⁾
E0 48	Left temperature selector wheel, short circuit ²⁾	23 ⇒ 12.0
E0 49	Left temperature selector wheel, short circuit ³⁾	23 ⇒ 12.0
E0 50	Left temperature selector wheel, open or short circuit ²⁾	23 ⇒ 12.0
E0 51	Left temperature selector wheel, open or short circuit ³⁾	23 ⇒ 12.0
E0 52	Right temperature selector wheel, short circuit ²⁾	23 ⇒ 11.0
E0 53	Right temperature selector wheel, short circuit ³⁾	23 ⇒ 11.0
E0 54	Right temperature selector wheel, open or short circuit ²⁾	23 ⇒ 11.0
E0 55	Right temperature selector wheel, open or short circuit ³⁾	23 ⇒ 11.0
E0 72	Heater supply unit coolant circulation pump (A31m1), short circuit ²⁾	23 ⇒ 24.0
E0 73	Heater supply unit coolant circulation pump (A31m1), short circuit ³⁾	23 ⇒ 24.0
E0 74	Coolant circulation pump (A31m1), open or short circuit ²⁾	23 ⇒ 24.0
E0 75	Coolant circulation pump (A31m1), open or short circuit ³⁾	23 ⇒ 24.0
E0 76	Coolant circulation pump (A31m1), over load ²⁾	Check mechanical function of circulation pump
E0 77	Coolant circulation pump (A31m1), over load ³⁾	Check mechanical function of circulation pump

1) Observe Preparation for Test, see 22.

2) Continuous faults.

3) Intermittent faults.

Diagnosis – Diagnostic Trouble Code (DTC) Memory

Diagnostic Trouble Code (DTC)	Possible Cause	Test Step/Remedy ¹⁾
E0 80	Left duovalve (A31y1), short circuit ²⁾	23 ⇒ 26.0
E0 81	Left duovalve (A31y1), short circuit ³⁾	23 ⇒ 26.0
E0 82	Left duovalve (A31y1), open or short circuit ²⁾	23 ⇒ 26.0
E0 83	Left duovalve (A31y1), open or short circuit ³⁾	23 ⇒ 26.0
E0 84	Right duovalve (A31y2), short circuit ²⁾	23 ⇒ 25.0
E0 85	Right duovalve (A31y2), short circuit ³⁾	23 ⇒ 25.0
E0 86	Right duovalve (A31y2), open or short circuit ²⁾	23 ⇒ 25.0
E0 87	Right duovalve (A31y2), open or short circuit ³⁾	23 ⇒ 25.0
E0 88	A/C compressor ground activation ²⁾	23 ⇒ 10.0, 30.0
E0 89	A/C compressor ground activation ³⁾	23 ⇒ 10.0, 30.0
E0 90	A/C compressor ground activation, open or short circuit ²⁾	23 ⇒ 10.0, 30.0
E0 91	A/C compressor ground activation, open or short circuit ³⁾	23 ⇒ 10.0, 30.0
E0 96	Auxiliary fan, 1st stage activation, short circuit ²⁾	23 ⇒ 19.0
E0 97	Auxiliary fan, 1st stage activation, short circuit ³⁾	23 ⇒ 19.0
E0 98	Auxiliary fan, 1st stage activation, open or short circuit ²⁾	23 ⇒ 19.0
E0 99	Auxiliary fan, 1st stage activation, open or short circuit ³⁾	23 ⇒ 19.0

1) Observe Preparation for Test, see 22.

2) Continuous faults.

3) Intermittent faults.

Diagnosis – Diagnostic Trouble Code (DTC) Memory

Diagnostic Trouble Code (DTC)	Possible Cause	Test Step/Remedy ¹⁾
E1 00	Auxiliary fan, 2nd stage activation, short circuit ²⁾	23 ⇒ 20.0
E1 01	Auxiliary fan, 2nd stage activation, short circuit ³⁾	23 ⇒ 20.0
E1 02	Auxiliary fan, 2nd stage activation, open or short circuit ²⁾	23 ⇒ 20.0
E1 03	Auxiliary fan, 2nd stage activation, open or short circuit ³⁾	23 ⇒ 20.0
E1 04	Auxiliary fan, 3rd stage activation, short circuit ²⁾	23 ⇒ 21.0
E1 05	Auxiliary fan, 3rd stage activation, short circuit ³⁾	23 ⇒ 21.0
E1 06	Auxiliary fan, 3rd stage activation, open or short circuit ²⁾	23 ⇒ 21.0
E1 07	Auxiliary fan, 3rd stage activation, open or short circuit ³⁾	23 ⇒ 21.0
E1 08	Auxiliary coolant pump control relay module (K30), power supply, short circuit ²⁾ ⁴⁾	23 ⇒ 14.0
E1 09	Auxiliary coolant pump control relay module (K30), power supply, short circuit ³⁾ ⁴⁾	23 ⇒ 14.0
E1 10	Auxiliary coolant pump control relay module (K30), power supply, open or short circuit ²⁾ ⁴⁾	23 ⇒ 14.0
E1 11	Auxiliary coolant pump control relay module (K30), power supply, open or short circuit ³⁾ ⁴⁾	23 ⇒ 14.0
E1 12	Engine rpm increase diode matrix (V2), short circuit ²⁾	23 ⇒ 23.0
E1 13	Engine rpm increase diode matrix (V2), short circuit ³⁾	23 ⇒ 23.0
E1 14	Engine rpm increase diode matrix (V2), open or short circuit ²⁾	23 ⇒ 23.0
E1 15	Engine rpm increase diode matrix (V2), open or short circuit ³⁾	23 ⇒ 23.0

1) Observe Preparation for Test, see 22.

2) Continuous faults.

3) Intermittent faults.

4) Possible sequential failures 75, 83, 87, 99, 1 03.

Diagnosis – Diagnostic Trouble Code (DTC) Memory

Diagnostic Trouble Code (DTC)	Possible Cause	Test Step/Remedy ¹⁾
E1 16	Activated charcoal filter actuator (A32m2) (OPEN), short circuit ²⁾	23 ⇒ 17.0, 18.0
E1 17	Activated charcoal filter actuator (A32m2) (OPEN), short circuit ³⁾	23 ⇒ 17.0, 18.0
E1 18	Activated charcoal filter actuator (A32m2) (OPEN), open or short circuit ²⁾	23 ⇒ 17.0, 18.0
E1 19	Activated charcoal filter actuator (A32m2) (OPEN), open or short circuit ³⁾	23 ⇒ 17.0, 18.0
E1 20	Activated charcoal filter actuator (A32m2) (CLOSED), short circuit ²⁾	23 ⇒ 17.0, 18.0
E1 21	Activated charcoal filter actuator (A32m2) (CLOSED), short circuit ³⁾	23 ⇒ 17.0, 18.0
E1 22	Activated charcoal filter actuator (A32m2) (CLOSED), open or short circuit ²⁾	23 ⇒ 17.0, 18.0
E1 23	Activated charcoal filter actuator (A32m2) (CLOSED), open or short circuit ³⁾	23 ⇒ 17.0, 18.0

1) Observe Preparation for Test, see 22.

2) Continuous faults.

3) Intermittent faults.

Diagnosis – Diagnostic Trouble Code (DTC) Memory (Rear A/C)

Note:

The following DTC's appear only if vehicle is equipped with rear A/C system

Diagnostic Trouble Code (DTC)	Possible Cause	Test Step/Remedy ¹⁾
E1 28	Left rear heater core temperature sensor (B10/9), short circuit ²⁾	23 ⇒ 34.0
E1 29	Left rear heater core temperature sensor (B10/9), short circuit ³⁾	23 ⇒ 34.0
E1 30	Left rear heater core temperature sensor (B10/9), open or short circuit ²⁾	23 ⇒ 34.0
E1 31	Left rear heater core temperature sensor (B10/9), open or short circuit ³⁾	23 ⇒ 34.0
E1 32	Right rear heater core temperature sensor (B10/10), short circuit ²⁾	23 ⇒ 35.0
E1 33	Right rear heater core temperature sensor (B10/10), short circuit ³⁾	23 ⇒ 35.0
E1 34	Right rear heater core temperature sensor (B10/10), open or short circuit ²⁾	23 ⇒ 35.0
E1 35	Right rear heater core temperature sensor (B10/10), open or short circuit ³⁾	23 ⇒ 35.0
E1 36	Left temperature selector wheel, short circuit ²⁾	23 ⇒ 38.0
E1 37	Left temperature selector wheel, short circuit ³⁾	23 ⇒ 38.0
E1 38	Left temperature selector wheel, open or short circuit ²⁾	23 ⇒ 38.0
E1 39	Left temperature selector wheel, open or short circuit ³⁾	23 ⇒ 38.0

1) Observe Preparation for Test, see 22.

2) Continuous faults.

3) Intermittent faults.

Diagnosis – Diagnostic Trouble Code (DTC) Memory (Rear A/C)

Diagnostic Trouble Code (DTC)	Possible Cause	Test Step/Remedy ¹⁾
E1 40	Right temperature selector wheel, short circuit ²⁾	23 ⇒ 37.0
E1 41	Right temperature selector wheel, short circuit ³⁾	23 ⇒ 37.0
E1 42	Right temperature selector wheel, open or short circuit ²⁾	23 ⇒ 37.0
E1 43	Right temperature selector wheel, open or short circuit ³⁾	23 ⇒ 37.0
E1 44	Rear evaporator temperature sensor (B10/11), short circuit ²⁾	23 ⇒ 33.0
E1 45	Rear evaporator temperature sensor (B10/11), short circuit ³⁾	23 ⇒ 33.0
E1 46	Rear evaporator temperature sensor (B10/11), open or short circuit ²⁾	23 ⇒ 33.0
E1 47	Rear evaporator temperature sensor (B10/11), open or short circuit ³⁾	23 ⇒ 33.0
E1 48	Coolant circulation pump (A31/1m1), short circuit ²⁾	23 ⇒ 40.0
E1 49	Coolant circulation pump (A31/1m1), short circuit ³⁾	23 ⇒ 40.0
E1 50	Coolant circulation pump (A31/1m1), open or short circuit ²⁾	23 ⇒ 40.0
E1 51	Coolant circulation pump (A31/1m1), open or short circuit ³⁾	23 ⇒ 40.0
E1 52	Coolant circulation pump (A31/1m1), overload ²⁾	23 ⇒ 40.0
E1 53	Coolant circulation pump (A31/1m1), overload ³⁾	23 ⇒ 40.0

1) Observe Preparation for Test, see 22.

2) Continuous faults.

3) Intermittent faults.

Diagnosis – Diagnostic Trouble Code (DTC) Memory (Rear A/C)

Diagnostic Trouble Code (DTC)	Possible Cause	Test Step/Remedy ¹⁾
E1 56	Left duovalve (A31/1y1), short circuit ²⁾	23 ⇒ 42.0
E1 57	Left duovalve (A31/1y1), short circuit ³⁾	23 ⇒ 42.0
E1 58	Left duovalve (A31/1y1), open or short circuit ²⁾	23 ⇒ 42.0
E1 59	Left duovalve (A31/1y1), open or short circuit ³⁾	23 ⇒ 42.0
E1 60	Right duovalve (A31/1y2), short circuit ²⁾	23 ⇒ 41.0
E1 61	Right duovalve (A31/1y2), short circuit ³⁾	23 ⇒ 41.0
E1 62	Right duovalve (A31/1y2), open or short circuit ²⁾	23 ⇒ 41.0
E1 63	Right duovalve (A31/1y2), open or short circuit ³⁾	23 ⇒ 41.0
E1 64	Rear refrigerant shut-off valve (Y67), short circuit ²⁾	23 ⇒ 39.0
E1 65	Rear refrigerant shut-off valve (Y67), short circuit ³⁾	23 ⇒ 39.0
E1 66	Rear refrigerant shut-off valve (Y67), open or short circuit ²⁾	23 ⇒ 39.0
E1 67	Rear refrigerant shut-off valve (Y67), open or short circuit ³⁾	23 ⇒ 39.0
E1 68	Rear tunnel flap vacuum valve (Y67/1), short circuit ²⁾	23 ⇒ 44.0
E1 69	Rear tunnel flap vacuum valve (Y67/1), short circuit ³⁾	23 ⇒ 44.0
E1 70	Rear tunnel flap vacuum valve (Y67/1), open or short circuit ²⁾	23 ⇒ 44.0
E1 71	Rear tunnel flap vacuum valve (Y67/1), open or short circuit ³⁾	23 ⇒ 44.0

¹⁾ Observe Preparation for Test, see 22.

²⁾ Continuous faults.

³⁾ Intermittent faults.