

Gunson®

FAULT CODE READER | SERVICE RESET TOOL

BMW (-03)
Petrol models

Part No. 77083

Instructions



Attention

Use these CODE Definitions WISELY:

The code definitions contained in this manual should be regarded as a starting point for diagnosing a problem. The codes that your BMW generates can be misleading.

Before spending your money on a repair or replacement parts, make sure you have a clear understanding of the problem by using additional sources of information, such as a good quality repair manual, expert advice, the Internet, etc...

Note:

When codes start with a "C" this applies to BMWs manufactured after 2002 and will be followed by a 4 digit number

I.e.: C-88-88 would be displayed

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Common Problems | Troubleshooting Guides

ERROR MESSAGE: E10

“E” means the car is not responding to the tool:

This often happens when the data line (also called “diagnostic bus”) inside the car is “hung” or disabled. Occasionally the tool will display the message “E” followed by a number (most commonly 10 or 11) when an attempt is made to read codes or to reset the MIL light (Check Engine or Service Engine Soon)

Things to try to resolve the flashing “E”:

1. Insertion Depth:
2. Check the insertion depth of the connector. If it is not fully inserted the unit will not work.
3. Pin 19: Observe that pin 19 of the diagnostic connector is not recessed.
4. A number of models in the early 1990s had pin 19 improperly installed.
5. Cycle power: Plug in tool, cycle the ignition key on and off two or three times (do not start engine)
6. Other warning lights: Observe that no other malfunction indicator lights are on. Often a malfunctioning module (i.e. DME, EGS/transmission, ABS traction control, etc...) can impair or “hang” the diagnostic bus.
7. Power resetting of all modules (entire car)

Note: before doing this procedure, get your radio security code from the dealer.

- a. Disconnect the main car battery.
 - b. Activate the emergency flasher lights (this will fully drain all power from all ECUs) wait 5 minutes
 - c. Reconnect the main battery and try the tool again.
8. Module Troubleshooting: If you suspect a particular module is malfunctioning or damaged, you may wish to consult repair documentation for the car and attempt to isolate the problem by removing the module from the diagnostic bus.

WARNING: The following procedure is for qualified mechanics only.

ABS service bulletin 34 01 96:

BMW circulated a service bulletin and low cost repair advice detailing the malfunction of the ABS unit ground wiring which caused diagnostic bus problems on a large number of BMWs. This is often the problem on BMWs built prior to 10/1994 that are getting the “E” message on the tool.

Trying the tool on a similar BMW

If you have access to a similar BMW, you can rule out the tool as the source of the problem by trying it on that car. If it either reads or resets without the E message, then you can narrow your attention to the car.

The tool will not serve its intended purpose if the diagnostic bus is impaired by a malfunctioning control module. If one of the modules is inhibiting communications it is necessary to visit a BMW dealer or qualified repair facility to diagnose and fix/replace the bad module.

Check Engine Light on the dashboard, indicates the DME has detected a problem

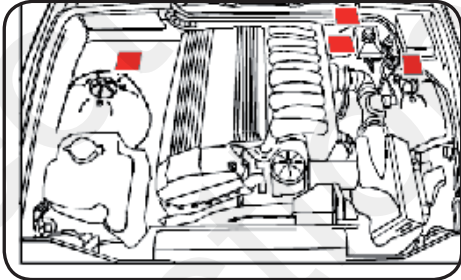
A/C	Air conditioner
ABS	Anti-lock Brake System
ASC	Skid control (see "Intervention")
ADS	Aux Throttle Position Motor
AHK	Active Rear Axle Kinematics
BLS	Brake Light Switch
CC	Check control
CO	Carbon Monoxide
DDE	ECU for Diesel Engine
Diagnostic Connector	Where the tool plugs into the car.
Decimal	Numeric format the dealer diagnostic machines report codes in.
DISA	Intake runner length tuning mechanism
DME	Engine ECU (Petrol engine): Monitors and controls all engine sensors and functions
Fault Code:	A "code" stored in the DME memory bank that indicates a past or present problem.
DSC	Dynamic Stability Control
DWA	Alarm system
E	Communications error: See "Flashing E below
EGS	Electronic Automatic Transmission
EKAT	Electrically heated catalytic converter
EKM	Electronic Body Module
EML	Electronic Throttle Control
EVAP	Relates to fuel vapour recovery often this code indicates a loose gas cap
EWS	Drive away protection (alarm system)
Fuel Trim	Adjustments to maintain proper air fuel ratio (see Lambda Control)
GM	General Module
Hex	The tool shows codes in a format called Hexadecimal.
Intervention, MSR, ASC	Intervention is when another control unit (i.e. skid control) requests a power/torque change from the DME. Code indicates DME assessed the request as being incorrect or too long.
Lambda Control	Code means DME is unable to maintain requisite air/fuel ratio due to external factor (air leak, bad injector, sensor, etc...). (Also see fuel trim)
LDP	Loss Diagnosis Pump
Load Calculation cross	When actual air flow exceeds +/- 25% of calculated air flow check (HFM vs. TPS)
MDK	Motorized Throttle Valve
MIL	Malfunction Indicator Lamp, also called the "Check Engine" or "Service Engine Soon lamp
MLF	Multi function Steering Wheel
MSR	Drag Torque Intervention (torque reduction for anti skid) see Intervention above

NTC	Coolant temperature sensor
Oil service & Inspection	Also called Si (abbrev. For service interval) maintenance reminder lights
PWG	Pedal Sensor Potentiometer
QL	Idle air mass adaptation (see Fuel Trim)
R5/FCX:	The scan/reset tool. Subject of this manual
RAM	DME random access memory
ROM	DME program memory
Scan Tool:	Generic term for the R5/FCX
Service Engine Soon	On the dashboard indicates the DME has detected a problem.
SI	Service Interval
SMG	BMW Motorsport Sequential Gearbox
SRS	Airbag
TD	Tachometer Signal
TEV	Evap, fuel tank vent / purge valve
Ti Additive:	Idle fuel adaptation (see fuel trim)
Ti multiplicative:	Adaptation a percentage +/- of injector time (see Fuel Trim)
TR signal	From DME, RPM and valve position
VANOS	Adjustable Valve Train
VDS	Vehicle Description System. VIN Digits 4- 7
VIN	Vehicle identification number.
ZAB	See ASC
ZKE	Central Body Electronics

Location of Diagnostic Connector

BMW's built 1987 to year 2000

The 20 pin diagnostic connector is located in the engine compartment. The image shown below left gives a general idea of where the connector can be found depending on year and model and the picture show what the connector looks like.



Areas marked red show the possible location of the diagnostic connector.



Uncovered 20 Pin of the diagnostic connector.

All BMWs built **1989 ~ 1999** have the above connector - no exceptions.

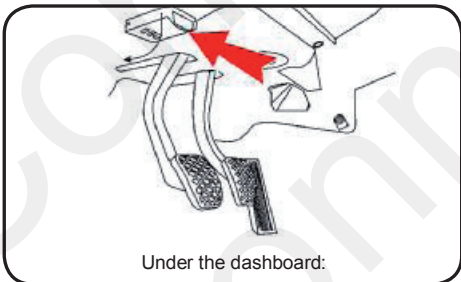
Mid 2000 forward is when BMW began to phase out the above connector in favour of the 'OBD II' connector (below).

BMW's built 2001 and Later (Connector Located inside the Car)

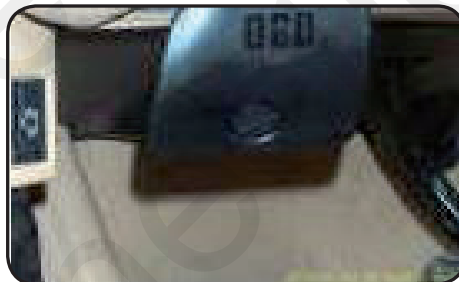
To locate the OBD II (16 Pins) Diagnostic Connector, open the driver's door, kneel down and look up at the underside of the dashboard.

You will see the diagnostic connector near the pedals, above the driver's left leg

Look for the rectangular access panel, (often embossed with the letters OBD) with a rounded thumb grip you will use to snap it off. The cover will swing downward revealing the 16 pin diagnostic connector inside.



Under the dashboard:



Access panel

Under the dashboard

Unable to locate the connector at the first instance?

Try looking on the passenger side of the centre console, or to the left of the drivers left leg.

Note: A small number of 2001 and later models also have the 20 pin connector, such as the 2001- X5 and the Z3 up to 2003.

Instructions

Function	
LED Display	Shows menu selections, activity and fault codes
Select	Used to review and select the available functions
OK	After using Select button to choose a function. The OK button causes the function to execute.

Operation:

1. With the engine OFF, plug the tool into diagnostic connector. Ensure it is securely plugged in.
2. Turn ignition key to ON position. (DO NOT START ENGINE)
3. Tool is ready to use when it displays:



Use the "Select" button to select one of the functions as listed below:

4. Press "OK" button to execute the function.

5. Read Fault Code:



- The tool automatically starts in this mode, (though it won't read the fault codes until the "OK" button is pressed).
- When OK is pressed, the unit will attempt to read the fault codes.
- If it finds faults, it will automatically display the number of the code table to use (see Error Code Tables).
- To then view the faults press OK, repeat until the end of the fault list
- Tool will show (--).
- Press OK to return to (Fc)

Clear Fault Codes and MIL Reset:



- When you have selected cE in the display, you are now ready to reset the MIL (malfunction indicator lamp) (Resets "Check Engine" or "Service Engine Soon").
- Pressing OK button will execute the reset.



- When finished it will return to Fc. This clears all faults and extinguishes the MIL.
- To verify the reset, UNPLUG the tool and start the engine- MIL should be off. (Note: After a MIL reset on some models with Automatic Transmission, the Automatic Transmission Light will be on. To clear it, simply start the engine twice.)

Engine Lamp will not reset:

- When the MIL is on, if the lamp will not reset, yet no codes are found this can be caused by one of two things; most common: the car has automatic transmission related faults which can occasionally trigger an engine MIL. Another possible cause is the engine MIL circuit from the Engine ECU to the instrument cluster is open.

Oil Service Reset:



- When you have selected oL in the display, it is ready to reset the “oil service” light.
- Pressing OK button will execute the reset.
- During the reset procedure the display will count from 0 to 2. When it has finished, the display will return to Fc.

Inspection Reset:



- When you have selected “In” in the display, you are now ready to reset the “inspection” light.
- Pressing OK button will execute reset.
- During the reset procedure the display will count from 0 to 9.
- When it has finished the display will return to Fc.

WHEN SERVICE LIGHT RESET FAILS:

Commonly a reset was attempted before one of the Oil service or Inspection lights came on but the five green lights did not illuminate.

- The computer was counting down to a different service interval than the one you tried to reset.
- There is no way to know if the next light will be Oil service or Inspection.

Some BMWs will not reset prior to the illumination of the Oil service or the Inspection lights. In all cases we advise you to wait for the Oil service or Inspection light to come on before attempting a reset.

In other words, if there are any green “countdown” lights remaining; do not attempt a reset because it probably won’t work. Another cause of the service light not resetting is the tool type. If your BMW has the round diagnostic port under the hood, you can only reset the service lights through that round under-bonnet port.

SERVICE LIGHT BATTERY PROBLEMS:

(Note: only applies to BMWs older than 1989)

The Tool is not giving error messages and appears to be working normally but one of the following conditions occurs:

- The reset seemed successful but the service lights come back on shortly after the reset was done.
- The service lights stay on while the ignition is off and the key is out of the ignition switch.
- The service lights flash off and on.
- The service lights will not reset at all.
- The tachometer, temperature gauge, or fuel economy gauge seem erratic (meter needle jumps rapidly) or have quit working completely.

The list of problems above indicates a dying or dead backup battery on your S.I. (Service Interval) computer circuit board. When this “backup” battery dies, the S.I. computer has to re-start every time you start your car, at which point an “Inspection” light will be indicated.

Winter storage without a trickle charger is the most common cause of premature S.I. battery failure. These specialized batteries have a life expectancy of approximately 4 to 7 years. Replacing the S.I. batteries takes about 90 minutes from start to finish and requires that you know how to operate a soldering iron.

Twin ECU – 12 cyl:

FII and cII displays as shown apply only to 12 cylinder BMWs, all of which have two Engine ECU's. It is the exact same operating procedure like Fc and cE (see above), except you are reading the 2nd ECU.

1987 ~ 1995 BMW Models:

If the tool displays "FF" for the table designator, note the year and model of the BMW (and the VDS number if necessary) and find the car in table A.

Note: VDS number is digit 4 thru 7 in the VIN: WBABB23LAE68973

Code table FF fault code table locator

Year	Model	VDS	Table
1987	325is	AA13	K1
	325is A	AA23	K1
	325i/4	AD13	K1
	325iA/4	AD23	K1
	325iC	BB13	K1
	325iCA	BB23	K1
1988	325is	AA13	K1
	325is A	AA23	K1
	325iX A/2	AB03	K1
	325/2	AB54	K1
	325 A/2	AB64	K1
	325iX/2	AB93	K1
	325i/4	AD13	K1
	325iA/4	AD23	K1
	325/4	AE54	K1
	325 A/4	AE64	K1
	325iC	BB13	K1
	325iCA	BB23	K1
	528e	DK73	K1
	528e A	DK83	K1
	635CSI	EC74	K1
	635CSI A	EC84	K1
	735i	GB33	K1
	735i A	GB43	K1
	735iL A	GC43	K1
	750iL A	GC83	K15
	M3		K1
1989	325i/is	AA13	K1
	325iA/2	AA23	K1
	325iX A/2	AB03	K1
	325iX/2	AB93	K1
	325i/4	AD13	K1
	325iA/4	AD23	K1
	325iX A/4	AE03	K1
	325iX/4	AE93	K1
	325iC	BB13	K1
	325iCA	BB23	K1
	525i	HC13	K1
	525i A	HC23	K1
	535i	HD13	K1
	535i A	HD23	K1
	735i	GB33	K1
	735i A	GB43	K1
	735iL A	GC43	K1
	750iL A	GC83	K15
	M3		K1
	M5		K1
1990	325i/is/2	AA13	K1
	325iA/2	AA23	K1
	325iX A/2	AB03	K1
	325iX/2	AB93	K1
	325i/4	AD13	K1
	325iA/4	AD23	K1
	325iX A/4	AE03	K1
	325iX/4	AE93	K1
	325iC	BB13	K1
	325iCA	BB23	K1
	525i	HC13	K1
	525i A	HC23	K1
	535i	HD13	K1
	535i A	HD23	K1
	735i	GB33	K1
	735i A	GB43	K1
	735iL A	GC43	K1
	750iL A	GC83	K15
	M3		K1
	M5		K1
1991	318is/2	AF93	K13
	318i/4	AJ93	K13
	318iC/2	BA73	K13
	325i/is/2	AA13	K1
	325iX A/2	AB03	K1
	325iX/2	AB93	K1
	325i/4	AD13	K1
	325iA/4	AD23	K1
	325iX A/4	AE03	K1
	325iX/4	AE93	K1
	325iC	BB13	K1
	325iCA	BB23	K1
	525i	HD53	K10
	525i A	HD63	K10
	535i	HD13	K1
	535i A	HD23	K1
	735i	GB33	K1
	735i A	GB43	K1
	735iL A	GC43	K1
	750iL A	GC83	K15
	M3		K1
1992	318iC/2	BA73	K13
	318is	BE53	K6
	318i	CA53	K6
	325iC	BB13	K1
	325iCA	BB23	K1
	325is	BF33	K10
	325is A	BF43	K10
	325i	CB33	K10
	325i A	CB43	K10
	525i	HD53	K10
	525i A	HD63	K10
	525iT	HJ63	K1
	535i	HD13	K1
	535i A	HD23	K1
	735i A	GB43	K1
	735iL A	GC43	K1
	750iL A	GC83	K7
	850i	EG13	K7
	850i A	EG23	K7
	M3		K1
	M5	HD93	K10
1993	318is	BE53	K6
	318is A	BE63	K6
	318i	CA53	K6
	318i A	CA63	K6
	325iC	BB13	K1
	325iCA	BB23	K1
	325is	BF33	K5
	325is A	BF43	K5
	325i	CB33	K5
	325i A	CB43	K5
	525i	HD53	K5
	525i A	HD63	K5
	525iT	HJ63	K5
	535i	HD13	K1
	535i A	HD23	K1
	735i	GB33	K1
	735i A	GB43	K1
	735iL A	GC43	K1
	750iL A	GC83	K15
	M3		K1
	M5		K1

1989	635CSI	EC74	K1
	635CSI A	EC84	K1
	735i	GB33	K1
	735i A	GB43	K1
	735iL A	GC43	K1
	750iL A	GC83	K15
	M3		K1
	M5		K1
1990	325i/is/2	AA13	K1
	325iA/2	AA23	K1
	325iX A/2	AB03	K1
	325iX/2	AB93	K1
	325i/4	AD13	K1
	325iA/4	AD23	K1
	325iX A/4	AE03	K1
	325iX/4	AE93	K1
	325iC	BB13	K1
	325iCA	BB23	K1
	525i	HC13	K1
	525i A	HC23	K1
	535i	HD13	K1
	535i A	HD23	K1
	735i	GB33	K1
	735i A	GB43	K1
	735iL A	GC43	K1
	750iL A	GC83	K15
	M3		K1
	M5		K1
1991	318is/2	AF93	K13
	318i/4	AJ93	K13
	318iC/2	BA73	K13
	325i/is/2	AA13	K1
	325iX A/2	AB03	K1
	325iX/2	AB93	K1
	325i/4	AD13	K1
	325iA/4	AD23	K1
	325iX A/4	AE03	K1
	325iX/4	AE93	K1
	325iC	BB13	K1
	325iCA	BB23	K1
	525i	HD53	K10
	525i A	HD63	K10
	535i	HD13	K1

	535i A	HD23	K1
	735i A	GB43	K1
	735iL A	GC43	K1
	750iL A	GC83	K7
1991	850i	EG13	K7
	850i A	EG23	K7
	M5	HD93	K1
	M3	K1	
1992	318iC/2	BA73	K13
	318is	BE53	K6
	318i	CA53	K6
	325iC	BB13	K1
	325iCA	BB23	K1
	325is	BF33	K10
	325is A	BF43	K10
	325i	CB33	K10
	325i A	CB43	K10
	525i	HD53	K10
	525i A	HD63	K10
	525iT	HJ63	K1
	535i	HD13	K1
	535i A	HD23	K1
	735i A	GB43	K1
	735iL A	GC43	K1
	750iL A	GC83	K7
	850i	EG13	K7
	850i A	EG23	K7
	M3		K1
	M5	HD93	K10
1993	318is	BE53	K6
	318is A	BE63	K6
	318i	CA53	K6
	318i A	CA63	K6
	325iC	BB13	K1
	325iCA	BB23	K1
	325is	BF33	K5
	325is A	BF43	K5
	325i	CB33	K5
	325i A	CB43	K5
	525i	HD53	K5
	525i A	HD63	K5
	525iT	HJ63	K5

	535i	HD13	K1
	535i A	HD23	K1
	740i A	GD43	K11
	740iL A	GD83	K11
	750iL A	GC83	K7
	850i	EG13	K7
	850i A	EG23	K7
	M3		K5
	M5	HD93	K1

1994	318is	BE53	K6
	318is A	BE63	K6
	318iC	BK53	K6
	318iC A	BK63	K6
	318i	CA53	K6
	318i A	CA63	K6
	325is	BF33	K5
	325is A	BF43	K5
	325iC	BJ53	K5
	325iCA	BJ63	K5
	325i	CB33	K5
	325i A	CB43	K5
	525i	HD53	K5
	525i A	HD63	K5
	525iT	HJ63	K5
	530i	HE13	K11
	530i A	HE23	K11
	530iT A	HK23	K11
	540i A	HE63	K11
	740i A	GD43	K11
	740iL A	GD83	K11
	750iL A	GC83	K7
	840Ci A	EF63	K11
	850i A	EG23	K7
	850CSI	EG93	K7

1995	318is	BE53	K6
	318is A	BE63	K6
	318iC	BK53	K6
	318iC A	BK63	K6
	318i	CA53	K6
	318i A	CA63	K6
	318i	CC73	K6
	318i A	CC83	K6
	318ti	CG53	K6

	318ti A	CG63	K6
	325is	BF33	K5
	325is A	BF43	K5
	325iC	BJ53	K5
	325iCA	BJ63	K5
	325i	CB33	K5
	325i A	CB43	K5
	525i	HD53	K5
	525i A	HD63	K5
	530i	HE13	K11
	530i A	HE23	K11
	540i	HE53	K11
	540i A	HE63	K11
	525iT	HJ63	K5
	530iT A	HK23	K11
1995	740i A	GF63	K11
	740iL A	GJ63	K11
	750iL A	GK23	K12
	840Ci A	EF63	K11
	850Ci A	EG43	K12
	850CSI	EG93	K7
	M3	BF93	K5
	M3 A	BF03	K5

Code tables

Table K1		49	Throttle position sensor	30	A/C Compressor control
"FF" CODE TABLES		52	Intervention, MSR	36	Control unit supply
(1987 - 1995 BMW MODELS):		53	Intervention, ASC	40	Ignition timing intervention
		64	Output Stage, Group #1	46	Oxy sensor
1	DME control unit selftest	0d	Oxy sensor	49	Vehicle speed signal not present
3	Electrical fuel pump relay	0F	Ignition secondary monitor	52	Engine drag torque control (MSR)
4	Idle speed actuator (open)	1A	Control unit supply	53	ASC / ZAB
5	Evaporative purge control valve	1d	Idle speed actuator (open)	64	Unspecified DME Output Stage
7	Air flow meter	1F	Fuel Injector, Cyl #3	3F	Torque converter clutch
10	Fuel Injectors (Cyl. 1, 3, 5)	2A	Vehicle speed signal not present	4c	Idle CO Potentiometer
11	Fuel Injectors (Cyl. 2, 4, 6)	4c	Idle CO Potentiometer	4d	Intake air temperature sensor
16	Idle speed actuator (close)	4d	Intake air temperature sensor	4E	Coolant temperature sensor
17	Oxy sensor heating relay	4E	Coolant temperature sensor	c8	DME control unit selftest
21	AT kick-down prevent solenoid valve	cA	Fault code memory error	c9	Emission (lambda) control
25	Control unit supply	cc	Idle speed increase during MSR		
26	Automatic Stability Control / DWA	cE	Knock control test pulse	Table K10	
28	A/C Compressor	c8	DME Control Unit		
32	Engine drag torque control (MSR)	c9	Lambda Control #1	1	Electrical fuel pump relay
33	Ignition timing intervention	dc	EWS message	2	Idle speed actuator (close)
34	Idle switch			3	Fuel Injector, Cyl #1
35	Full load switch	Table K6		4	Fuel Injector, Cyl #3
36	Torque Converter Clutch			5	Fuel Injector, Cyl #2
64	Unspecified DME Output Stage	1	Electrical fuel pump relay	6	Fuel Injector, Unknown
		3	Fuel Injectors (Cyl 2, 4)	8	Check engine lamp
0A	Emission (lambda) control	8	Check engine lamp	10	Camshaft sensor
0F	Check engine lamp	10	Camshaft/Cylinder ID sensor	12	Output Stage, Group #1
1c	Oxy sensor	12	Intake air resonance (DISA) valve	13	Output Stage, Group #2
1d	Vehicle speed signal not present	20	Fuel Injectors (Cyl 1, 3)	17	Ignition Coil, Cyl #2
2b	Idle CO Potentiometer	24	Evaporative purge control valve	18	Ignition Coil, Cyl #3
2c	Intake air temperature sensor	25	Oxy sensor heating relay	19	Ignition Coil, Cyl #1
2d	Coolant temperature sensor	29	Air flow sensor	20	Fuel Injector, Cyl #6
		30	A/C Compressor control	21	Fuel Injector, Cyl #4
Table K5		36	Control unit supply	24	Evaporative purge control valve
		37	Ignition coils	25	Oxy sensor heating relay
1	Electrical fuel pump relay	40	Ignition timing intervention	29	Air mass sensor
2	Idle speed actuator (close)	46	Oxy sensor	30	A/C Compressor control
3	Fuel Injector, Cyl #5	49	Vehicle speed signal not present	32	Ignition Coil, Cyl #4
4	Fuel Injector, Cyl #6	51	DWA/EWS input	33	Ignition Coil, Cyl #6
5	Fuel Injector, Cyl #4	55	A/C Compressor	34	Ignition Coil, Cyl #5
6	Fuel Injector, Unknown	64	Unspecified DME Output Stage	36	Battery voltage / DME main relay
7	VANOS (Solenoid)	0c	Throttle position sensor	37	Ignition output stage
8	Check engine lamp	0F	Knock sensor, Cyl 1-2	40	Ignition timing intervention
10	Crankshaft sensor	1d	Idle Control Valve	43	Crankshaft sensor
11	Camshaft sensor	2A	Knock sensor, Cyl 3-4	46	Oxy sensor
17	Ignition Coil, Cyl #4	4c	Idle CO Potentiometer	49	Vehicle speed signal not present
18	Ignition Coil, Cyl #6	4d	Intake air temperature sensor	51	DWA Input
19	Ignition Coil, Cyl #5	4E	Coolant temperature sensor	52	Engine drag torque control (MSR)
20	Fuel Injector, Cyl #2	c8	DME control unit selftest	53	Intervention, ASC
21	Fuel Injector, Cyl #1	c9	Emission (lambda) control	55	A/C Compressor
24	Evaporative purge control valve	cE	Knock control test pulse	64	Output Stage
26	Oxy sensor heating relay	cF	Knock control regulation	0c	Throttle position sensor
29	Air mass sensor	dc	EWS message	1A	Control unit supply
30	A/C Compressor control			1d	Idle speed actuator (open)
32	Ignition Coil, Cyl #1	Table K7		1F	Fuel Injector, Cyl #5
33	Ignition Coil, Cyl #2			2E	Output Stage
34	Ignition Coil, Cyl #3	1	Electrical fuel pump relay	3E	EML Signal
36	Battery voltage / DME main relay	3	Fuel Injectors (Cyl 2, 4, 6 or 8, 10, 12)	3F	Torque converter clutch lockup
37	Misfire, Cyl #6	8	Check engine lamp	4c	Idle CO Potentiometer
39	Ignition timing intervention	10	Camshaft/Cylinder ID sensor	4d	Intake air temperature sensor
41	A/C Compressor	20	Fuel Injectors (Cyl 1, 3, 5 or 7, 9, 11)	4E	Coolant temperature sensor
42	DWA/EWS Input	24	Evaporative purge control valve	c8	DME Control Unit
45	Knock Sensor, Cyl 4-6	25	Oxy sensor heating relay	c9	Lambda Control
46	Knock Sensor, Cyl 1-3	29	Air flow sensor	cA	Fault code memory error

cb	Ignition circuit primary monitor	15	PreCat oxy sensor response time,	6F	Crankshaft position sensor
cc	Stall protection	16	PreCat oxy sensor aging, Bank 2	7b	Coolant temperature sensor
		17	AfterCat oxy sensor response time,	7c	Intake air temperature sensor
Table K11		18	A/C Compressor	8A	A/C Compressor torque reduction
		20	Idle control valve stuck mechanically	8b	Electric thermostat control final
1	Electrical fuel pump relay	22	Fuel trim, multiplicative, Bank 2	8d	ASC signal plausibility
2	Idle speed actuator (close)	23	Fuel trim, QL additive, Bank 2	8F	Intervention, MSR
3	Fuel Injector, Cyl #1	24	Fuel trim, TI additive, Bank 2	9A	Fuel Injector, Cyl #5
4	Fuel Injector, Cyl #4	27	EWS message	9b	Fuel Injector, Cyl #6
5	Fuel Injector, Cyl #6	28	Catalyst efficiency, Bank 1	9c	Fuel Injector, Cyl #7
6	Fuel Injector, Unknown	32	Misfire, Cyl #1	9d	Fuel Injector, Cyl #8
7	Fuel Injector, Cyl #7	33	Misfire, Cyl #2	9E	Fuel Injector, Cyl #9
8	Check engine lamp	34	Misfire, Cyl #3	9F	Fuel Injector, Cyl #10
11	Camshaft sensor	35	Misfire, Cyl #4	A0	Fuel Injector, Cyl #11
13	Secondary air pump relay	36	Misfire, Cyl #5	A1	Fuel Injector, Cyl #12
16	Ignition Coil, Cyl #7	37	Misfire, Cyl #6	A5	Check engine lamp
17	Ignition Coil, Cyl #6	38	Misfire, Cyl #7	A7	Electrical fuel pump relay
18	Ignition Coil, Cyl #4	39	Misfire, Cyl #8	A8	Idle speed actuator (open)
19	Ignition Coil, Cyl #1	40	Misfire, catalyst damaging, Cyl #2	A9	Idle speed actuator (close)
20	Fuel Injector, Cyl #8	41	Misfire, catalyst damaging, Cyl #3	AA	A/C Compressor control
21	Fuel Injector, Cyl #3	42	Misfire, catalyst damaging, Cyl #4	d0	Secondary air control, Bank 2
23	Fuel Injector, Cyl #2	43	Misfire, catalyst damaging, Cyl #5	d2	Knock Sensor #1
24	Evaporative purge control valve	44	Misfire, catalyst damaging, Cyl #6	d3	Knock Sensor #2
25	Oxy sensor heating relay	45	Misfire, catalyst damaging, Cyl #7	d4	Knock Sensor #3
29	Air mass sensor	46	Misfire, catalyst damaging, Cyl #8	d5	Knock Sensor #4
30	A/C Compressor control	47	Misfire, catalyst damaging, Cyl #9	d8	CAN timeout, ASC
31	Ignition Coil, Cyl #2	48	Misfire, catalyst damaging, Cyl #10	dc	Knock control test pulse
32	Ignition Coil, Cyl #3	49	Misfire, catalyst damaging, Cyl #11	dE	Knock control test pulse
33	Ignition Coil, Cyl #8	50	Secondary air control, Bank 1	EA	Automatic start input
34	Ignition Coil, Cyl #5	54	Secondary air pump final stage	Ec	CAN timeout, EGS
36	Battery voltage / DME main relay	55	Secondary air valve final stage	Ed	Automatic start output
41	A/C Compressor	61	EVAP small leak	Fd	Coolant fan final stage
42	DWA/EWS Input	62	EVAP purge control valve circuit		
43	Knock Sensor, Cyl 7-8	65	DME, internal RAM failure	Table K13	
44	Knock Sensor, Cyl 5-6	66	DME, external RAM failure		
45	Knock Sensor, Cyl 3-4	67	DME, ROM failure	1	Electrical fuel pump relay
46	Knock Sensor, Cyl 1-2	68	Fault code memory error	3	Fuel Injectors (Cyl 1, 3)
49	Throttle position sensor	70	Camshaft position sensor	8	Check engine lamp
52	Intervention, MSR	73	Air mass sensor	10	Camshaft/Cylinder ID sensor
53	Intervention, ASC	75	Throttle position sensor	20	Fuel Injectors (Cyl 2, 4)
64	Output Stage, Group #1	78	Vehicle speed signal not present	24	Evaporative purge control valve
65	Output Stage, Group #2	79	Load calculation crosscheck (HFM)	25	Oxy sensor heating relay
0c	Oxy sensor, #2	87	Torque reduction: Transmission	29	Air flow sensor
0d	Oxy sensor, #1	90	Intervention, ASC	30	A/C Compressor control
0F	Ignition secondary monitor	93	Electric thermostat control	36	Control unit supply
1A	Control unit supply	94	EWS Input	40	Ignition timing intervention
1d	Idle speed actuator (open)	96	Fuel Injector, Cyl #1	46	Oxy sensor
1F	Fuel Injector, Cyl #5	97	Fuel Injector, Cyl #2	49	Vehicle speed signal not present
2A	Vehicle speed signal not present	98	Fuel Injector, Cyl #3	55	A/C Compressor request
3E	EML Signal	99	Fuel Injector, Cyl #4	64	Unspecified DME Output Stage
4c	Idle CO Potentiometer	0A	PreCat oxy sensor, Bank 1	0c	Throttle position sensor
4d	Intake air temperature sensor	0C	AfterCat oxy sensor, Bank 1	1d	Idle Control Valve
4E	Coolant temperature sensor	0d	PreCat oxy sensor heater, Bank 1	4c	Idle CO Potentiometer
c8	DME Control Unit	0E	AfterCat oxy sensor heater, Bank 1	4d	Intake air temperature sensor
c9	Lambda Control #1	0F	PreCat oxy sensor response time,	4E	Coolant temperature sensor
cA	Fault code memory error	1A	Fuel trim, multiplicative, Bank 1	c8	DME control unit selftest
cb	Lambda Control #2	1b	Fuel trim, QL additive, Bank 1	c9	Emission (lambda) control
cc	Idle speed increase - CAN Bus	1C	Fuel trim, TI additive, Bank 1		
cd	Ignition timing intervention	2d	Catalyst efficiency, Bank 2	Table K15	
cE	Knock control test pulse	3A	Misfire, Cyl #9		
d2	CAN message	3b	Misfire, Cyl #10	1	DME control unit selftest
dc	EWS message	3C	Misfire, Cyl #11	3	Electric fuel pump relay / TR Signal
		3d	Misfire, Cyl #12	5	Evaporative purge control valve
Table K12		3E	Misfire, random or unknown cylinder	7	Air flow meter
		3F	Misfire, catalyst damaging, Cyl #1	10	Fuel Injectors (Cyl. 1, 3, 5 or 7, 9, 11)
4	PreCat oxy sensor heater, Bank 2	4A	Misfire, catalyst damaging, Cyl #12	11	Fuel Injectors (Cyl. 2, 4, 6 or 8, 10, 12)
5	AfterCat oxy sensor heater, Bank 2	4b	Misfire detected, catalyst damaging, random/unknown Cyl.	17	Oxy sensor heating relay
8	Misfire w/ low fuel	4E	Crankshaft position sensor (too	25	Control unit supply
10	PreCat oxy sensor aging, Bank 1	5d	EVAP emission control system	33	Ignition angle
11	AfterCat oxy sensor response time, Bank 1	5E	EVAP large leak	36	Torque Converter Clutch
12	PreCat oxy sensor, Bank 2	6b	Control unit supply voltage	64	Unspecified DME Output Stage
14	AfterCat oxy sensor, Bank 2	6c	Battery disconnected	0A	Emission (lambda) control

0F	Check engine lamp			5d	EVAP emission control system
1c	Oxy sensor	Table 06		5E	EVAP large leak
2b	Idle CO Potentiometer			6b	Control unit supply voltage
2c	Intake air temperature sensor	04	PreCat O2 sensor heater, Cyl 5-8	6c	Battery disconnected
2d	Coolant temperature sensor	05	AfterCat O2 sensor heater, Cyl 5-8	6F	Crankshaft position sensor
		08	Misfire w/ low fuel	7b	Coolant temperature sensor
Table 00		10	PreCat O2 sensor aging, Cyl 1-4	7c	Intake air temperature sensor
Code Tables for 1996-2003 BMWs		11	AfterCat O2 sensor response time, Cyl 1-4	8b	Electric thermostat control final stage
(Important: If the tool displayed FF you are in the wrong table section)		12	PreCat O2 sensor, Cyl 5-8	8d	ASC signal plausibility
		14	AfterCat O2 sensor, Cyl 5-8	8F	Intervention, MSR
01	Electrical fuel pump relay	15	PreCat O2 sensor response time, Cyl 5-8	9A	Fuel Injector, Cyl #5
02	Idle speed actuator (close)	16	PreCat O2 sensor aging, Cyl 5-8	9b	Fuel Injector, Cyl #6
03	Fuel Injector, Cyl #1	17	AfterCat O2 sensor response time, Cyl 5-8	9c	Fuel Injector, Cyl #7
04	Fuel Injector, Cyl #4	18	A/C Compressor	9d	Fuel Injector, Cyl #8
05	Fuel Injector, Cyl #6	20	Idle control valve stuck mechanically		
06	Fuel Injector, Unknown	22	Fuel trim, multiplicative, Cyl 5-8	A5	Check engine lamp
07	Fuel Injector, Cyl #7	23	Fuel trim, QL additive, Cyl 5-8	A7	Electrical fuel pump relay
08	Check engine lamp	24	Fuel trim, Ti additive, Cyl 5-8	A8	Idle speed actuator (open)
10	Crankshaft sensor	27	EWS message	A9	Idle speed actuator (close)
11	Camshaft sensor	28	Catalyst efficiency, Cyl 1-4	AA	A/C Compressor control
13	Secondary air pump relay	32	Misfire, Cyl #1		
16	Ignition Coil, Cyl #7	33	Misfire, Cyl #2	d0	Secondary air control, Cyl 5-8
17	Ignition Coil, Cyl #6	34	Misfire, Cyl #3	d2	Knock Sensor, Cyl 1-2
18	Ignition Coil, Cyl #4	35	Misfire, Cyl #4	d3	Knock Sensor, Cyl 3-4
19	Ignition Coil, Cyl #1	36	Misfire, Cyl #5	d4	Knock Sensor, Cyl 5-6
20	Fuel Injector, Cyl #8	37	Misfire, Cyl #6	d5	Knock Sensor, Cyl 7-8
21	Fuel Injector, Cyl #3	38	Misfire, Cyl #7	d8	CAN timeout, ASC
23	Fuel Injector, Cyl #2	39	Misfire, Cyl #8	dc	Knock control test pulse
24	Evaporative purge control valve	40	Misfire, catalyst damaging, Cyl #2	dE	Knock control test pulse
25	O2 sensor heating relay	41	Misfire, catalyst damaging, Cyl #3		
29	Air mass sensor	42	Misfire, catalyst damaging, Cyl #4	EA	Automatic start input
30	A/C Compressor control	43	Misfire, catalyst damaging, Cyl #5	Ec	CAN timeout, EGS
31	Ignition Coil, Cyl #2	44	Misfire, catalyst damaging, Cyl #6	Ed	Automatic start output
32	Ignition Coil, Cyl #3	45	Misfire, catalyst damaging, Cyl #7		
33	Ignition Coil, Cyl #8	46	Misfire, catalyst damaging, Cyl #8	Fd	Coolant fan final stage
34	Ignition Coil, Cyl #5	50	Secondary air control, Cyl 1-4		
36	Battery voltage - DME main relay	54	Secondary air pump final stage	Table 07	
41	A/C Compressor	55	Secondary air valve final stage		
42	DWA/EWS Input	61	EVAP small leak	08	Misfire with low fuel
44	Knock Sensor, Cyl 7-8	62	EVAP purge control valve circuit	10	PreCat O2 sensor aging
43	Knock Sensor, Cyl 5-6	65	DME, internal RAM failure	11	AfterCat O2 sensor response time
45	Knock Sensor, Cyl 3-4	66	DME, external RAM failure	18	Air Conditioner Compressor
46	Knock Sensor, Cyl 1-2	67	DME, ROM failure	20	Idle control valve stuck mechanically
49	Throttle position sensor	68	Fault code memory error	27	EWS message
52	Intervention, MSR	70	Camshaft position sensor	28	Catalyst efficiency
53	Intervention, ASC	73	Air mass sensor	32	Misfire, Cyl #1
64	Output Stage, Group #1	75	Throttle position sensor	33	Misfire, Cyl #2
65	Output Stage, Group #2	78	Vehicle speed signal not present	34	Misfire, Cyl #3
		79	Load calculation crosscheck (HFM vs TPS)	35	Misfire, Cyl #4
0c	O2 sensor, #2	87	Torque reduction: Transmission	40	Misfire, catalyst damaging, Cyl #2
0d	O2 sensor, #1	88	8A A/C Compressor torque reduction	41	Misfire, catalyst damaging, Cyl #3
0F	Ignition secondary monitor	90	Intervention, ASC	42	Misfire, catalyst damaging, Cyl #4
1A	Control unit supply	93	Electric thermostat control performance	50	Secondary air control
1d	Idle speed actuator (open)	94	EWS Input	61	EVAP small leak
1F	Fuel Injector, Cyl #5	96	Fuel Injector, Cyl #1	62	EVAP purge control valve circuit
2A	Vehicle speed signal not present	97	Fuel Injector, Cyl #2	65	DME, internal RAM failure
3E	EML Signal	98	Fuel Injector, Cyl #3	66	DME, external RAM failure
		99	Fuel Injector, Cyl #4	67	DME, ROM failure
4c	Idle CO Potentiometer			68	Fault code memory error
4d	Intake air temperature sensor	0A	PreCat O2 sensors, Cyl 1-4	6F	Crankshaft position sensor
4E	Coolant temperature sensor	0c	AfterCat O2 sensor, Cyl 1-4	70	Camshaft position sensor
		0d	PreCat O2 sensor heater, Cyl 1-4	73	Air mass sensor
c8	DME Control Unit	0E	AfterCat O2 sensor heater, Cyl 1-4	75	Throttle position sensor
c9	Lambda Control #1	0F	PreCat O2 sensor response time, Cyl 1-4	78	Vehicle speed signal not present
cA	Fault code memory error	1A	Fuel trim, multiplicative, Cyl 1-4	79	Load calculation crosscheck (HFM vs
cb	Lambda Control #2	1b	Fuel trim, QL additive, Cyl 1-4	87	Torque reduction: Transmission
cc	Idle speed increase - CAN Bus	1c	Fuel trim, Ti additive, Cyl 1-4	90	Intervention, ASC
cd	Ignition timing intervention	2d	Catalyst efficiency, Cyl 5-8	94	EWS Input
cE	Knock control test pulse	3E	Misfire, random or unknown cylinder	96	Fuel Injector, Cyl #1
		3F	Misfire, catalyst damaging, Cyl #1	97	Fuel Injector, Cyl #2
d2	CAN message	4b	Misfire, catalyst damaging, random or	98	Fuel Injector, Cyl #3
dc	EWS message	4E	Crankshaft position sensor (too many	99	Fuel Injector, Cyl #4

		50	Secondary air control, Bank 1	d8	CAN timeout, ASC
0A	PreCat O2 sensor	54	Secondary air pump final stage	dc	Knock control test pulse
0c	AfterCat O2 sensor	55	Secondary air valve final stage	dE	Knock control test pulse
0d	PreCat O2 sensor heater	61	EVAP small leak		
0E	AfterCat O2 sensor heater	62	EVAP purge control valve circuit	EA	Automatic start input
0F	PreCat O2 sensor response time	65	DME, internal RAM failure	Ec	CAN timeout, EGS
		66	DME, external RAM failure	Ed	Automatic start output
1A	Fuel trim, multiplicative	67	DME, ROM failure	Fd	Coolant fan final stage
1b	Fuel trim, QL additive	68	Fault code memory error		
1c	Fuel trim, Ti additive	70	Camshaft position sensor	Table 0b	
3E	Misfire, random or unknown cylinder	73	Air mass sensor		
3F	Misfire, catalyst damaging, Cyl #1	75	Throttle position sensor	01	EVAP LDP Valve final stage
4b	Misfire, catalyst damaging, random or	78	Vehicle speed signal not present	02	EVAP Running losses valve final stage
4E	Crankshaft position sensor (too many	79	Load calculation crosscheck (HFM vs TPS)	03	EVAP Reed switch not closed, doesn't
5d	EVAP emission control system	87	Torque reduction: Transmission	04	PreCat O2 sensor heater, Cyl 5-8
5E	EVAP large leak	90	Intervention, ASC	05	AfterCat O2 sensor heater, Cyl 5-8
6b	Control unit supply voltage	93	Electric thermostat control performance	06	CAN timeout, instrument cluster
6c	Battery disconnected	94	EWS Input	07	Engine coolant temperature, radiator
7b	Coolant temperature sensor	96	Fuel Injector, Cyl #1	08	Misfire w/ low fuel
7c	Intake air temperature sensor	97	Fuel Injector, Cyl #2	10	PreCat O2 sensor aging, Cyl 1-4
8F	Intervention, MSR	98	Fuel Injector, Cyl #3	11	AfterCat O2 sensor response time, Cyl 1-4
		99	Fuel Injector, Cyl #4	12	PreCat O2 sensor, Cyl 5-8
A5	Check engine lamp			14	AfterCat O2 sensor, Cyl 5-8
A7	Electrical fuel pump relay	0A	PreCat O2 sensor, Bank 1	15	PreCat O2 sensor response time, Cyl 5-8
A8	Idle speed actuator (open)	0c	AfterCat O2 sensor, Bank 1	16	PreCat O2 sensor aging, Cyl 5-8
A9	Idle speed actuator (close)	0d	PreCat O2 sensor heater, Bank 1	17	AfterCat O2 sensor response time, Cyl 5-8
AA	A/C Compressor control	0E	AfterCat O2 sensor heater, Bank 1	18	A/C Compressor
AF	DISA (intake resonance) flap	0F	PreCat O2 sensor response time, Bank 1	20	Idle control valve stuck mechanically
		1A	Fuel trim, multiplicative, Bank 1	22	Fuel trim, multiplicative, Cyl 5-8
d2	Knock Sensor, Cyl 1-2	1b	Fuel trim, QL additive, Bank 1	23	Fuel trim, QL additive, Cyl 5-8
d3	Knock Sensor, Cyl 3-4	1c	Fuel trim, Ti additive, Bank 1	24	Fuel trim, Ti additive, Cyl 5-8
dc	Knock control zero test	2d	Catalyst efficiency, Bank 2	27	EWS message
dE	Knock control test pulse	3A	Misfire, Cyl #9	28	Catalyst efficiency, Cyl 1-4
Ec	CAN timeout, EGS	3b	Misfire, Cyl #10	32	Misfire, Cyl #1
		3c	Misfire, Cyl #11	33	Misfire, Cyl #2
Table 09		3d	Misfire, Cyl #12	34	Misfire, Cyl #3
		3E	Misfire, random or unknown cylinder	35	Misfire, Cyl #4
04	PreCat O2 sensor heater, Bank 2	3F	Misfire, catalyst damaging, Cyl #1	36	Misfire, Cyl #5
05	AfterCat O2 sensor heater, Bank 2	4A	Misfire, catalyst damaging, Cyl #12	37	Misfire, Cyl #6
08	Misfire w/ low fuel	4b	Misfire, catalyst damaging, random or	38	Misfire, Cyl #7
10	PreCat O2 sensor aging, Bank 1	4E	Crankshaft position sensor (too many teeth)	39	Misfire, Cyl #8
11	AfterCat O2 sensor response time, Bank 1	5d	EVAP emission control system	40	Misfire, catalyst damaging, Cyl #2
12	PreCat O2 sensor, Bank 2	5E	EVAP large leak	41	Misfire, catalyst damaging, Cyl #3
14	AfterCat O2 sensor, Bank 2	6b	Control unit supply voltage	42	Misfire, catalyst damaging, Cyl #4
15	PreCat O2 sensor response time, Bank 2	6c	Battery disconnected	43	Misfire, catalyst damaging, Cyl #5
16	PreCat O2 sensor aging, Bank 2	6F	Crankshaft position sensor	44	Misfire, catalyst damaging, Cyl #6
17	AfterCat O2 sensor response time, Bank 2	7b	Coolant temperature sensor	45	Misfire, catalyst damaging, Cyl #7
18	A/C Compressor	7c	Intake air temperature sensor	46	Misfire, catalyst damaging, Cyl #8
20	Idle control valve stuck mechanically	8A	A/C Compressor torque reduction	50	Secondary air control, Cyl 1-4
22	Fuel trim, multiplicative, Bank 2	8b	Electric thermostat control final stage	54	Secondary air pump final stage
23	Fuel trim, QL additive, Bank 2	8d	ASC signal plausibility	55	Secondary air valve final stage
24	Fuel trim, Ti additive, Bank 2	8F	Intervention, MSR	61	EVAP small leak
27	EWS message	9A	Fuel Injector, Cyl #5	62	EVAP purge control valve circuit
28	Catalyst efficiency, Bank 1	9b	Fuel Injector, Cyl #6	65	DME, internal RAM failure
32	Misfire, Cyl #1	9c	Fuel Injector, Cyl #7	66	DME, external RAM failure
33	Misfire, Cyl #2	9d	Fuel Injector, Cyl #8	67	DME, ROM failure
34	Misfire, Cyl #3	9E	Fuel Injector, Cyl #9	68	Fault code memory error
35	Misfire, Cyl #4	9F	Fuel Injector, Cyl #10	69	DME, EEPROM failure
36	Misfire, Cyl #5			70	Camshaft position sensor
37	Misfire, Cyl #6	A0	Fuel Injector, Cyl #11	73	Air mass sensor
38	Misfire, Cyl #7	A1	Fuel Injector, Cyl #12	75	Throttle position sensor
39	Misfire, Cyl #8	A5	Check engine lamp	78	Vehicle speed signal not present
40	Misfire, catalyst damaging, Cyl #2	A7	Electrical fuel pump relay	79	Load calculation crosscheck (HFM vs TPS)
41	Misfire, catalyst damaging, Cyl #3	A8	Idle speed actuator (open)	87	Torque reduction: Transmission
42	Misfire, catalyst damaging, Cyl #4	A9	Idle speed actuator (close)	90	Intervention, ASC
43	Misfire, catalyst damaging, Cyl #5	AA	A/C Compressor control	93	Electric thermostat control performance
44	Misfire, catalyst damaging, Cyl #6			94	EWS Input
45	Misfire, catalyst damaging, Cyl #7	d0	Secondary air control, Bank 2	96	Fuel Injector, Cyl #1
46	Misfire, catalyst damaging, Cyl #8	d2	Knock Sensor #1	97	Fuel Injector, Cyl #2
47	Misfire, catalyst damaging, Cyl #9	d3	Knock Sensor #2	98	Fuel Injector, Cyl #3
48	Misfire, catalyst damaging, Cyl #10	d4	Knock Sensor #3	99	Fuel Injector, Cyl #4
49	Misfire, catalyst damaging, Cyl #11	d5	Knock Sensor #4		

0A	PreCat O2 sensor, Cyl 1-4	6	CAN timeout, instrument cluster	0F	PreCat oxy sensor response time, Bank 1
0c	AfterCat O2 sensor, Cyl 1-4	7	Engine coolant temperature, radiator		
0d	PreCat O2 sensor heater, Cyl 1-4	8	Misfire w/ low fuel	1A	Fuel trim, multiplicative, Bank 1
0E	AfterCat O2 sensor heater, Cyl 1-4	10	PreCat oxy sensor aging, Bank 1	1b	Fuel trim, QL additive, Bank 1
0F	PreCat O2 sensor response time, Cyl 1-4	11	AfterCat oxy sensor response time,	1c	Fuel trim, Ti additive, Bank 1
		12	PreCat oxy sensor, Bank 2	1d	Air containment valve, shrouded
1A	Fuel trim, multiplicative, Cyl 1-4	13	CAN timeout, EKAT	1E	EKAT - Status 7 - power switch control
1b	Fuel trim, QL additive, Cyl 1-4	14	AfterCat oxy sensor, Bank 2		
1c	Fuel trim, Ti additive, Cyl 1-4	15	PreCat oxy sensor response time, Bank 2	2A	EKAT - Status 1 - heater disconnection,
1d	Air containment valve, shrouded	16	PreCat oxy sensor aging, Bank 2	2b	EKAT - Status 2 - Switch on operation
2d	Catalyst efficiency, Cyl 5-8	17	AfterCat oxy sensor response time,	2c	EKAT - Status 3 - Power switch for
3E	Misfire, random or unknown cylinder	18	A/C Compressor	2d	Catalyst efficiency, Bank 2
3F	Misfire, catalyst damaging, Cyl #1	20	Idle control valve stuck mechanically	2E	EKAT - Status 4 - Heater disconnection,
4b	Misfire, catalyst damaging, random or	21	EKAT - Status 8 - EKAT ECU	2F	EKAT - Status 5 - Switch on operation
4d	Air containment valve, shrouded	22	Fuel trim, multiplicative, Bank 2		
4E	Crankshaft position sensor (too many	23	Fuel trim, QL additive, Bank 2	3A	Misfire, Cyl #9
5b	EVAP purge control valve, Cyl 5-8	24	Fuel trim, Ti additive, Bank 2	3b	Misfire, Cyl #10
5d	EVAP emission control system	27	EWS message	3c	Misfire, Cyl #11
5E	EVAP large leak	28	Catalyst efficiency, Bank 1	3d	Misfire, Cyl #12
6b	Control unit supply voltage	30	EKAT - Status 6 - Power switch for	3E	Misfire, random or unknown cylinder
6c	Battery disconnected	32	Misfire, Cyl #1	3F	Misfire, catalyst damaging, Cyl #1
6F	Crankshaft position sensor	33	Misfire, Cyl #2		
7b	Coolant temperature sensor	34	Misfire, Cyl #3	4A	Misfire, catalyst damaging, Cyl #12
7c	Intake air temperature sensor	35	Misfire, Cyl #4	4b	Misfire detected, catalyst damaged,
8A	A/C Compressor torque reduction	36	Misfire, Cyl #5	4d	Air containment valve, shrouded
8b	Electric thermostat control final stage	37	Misfire, Cyl #6	4E	Crankshaft position sensor (too many
8d	ASC signal plausibility	38	Misfire, Cyl #7		
8F	Intervention, MSR	39	Misfire, Cyl #8	5b	EVAP purge control valve, Bank 2
9A	Fuel Injector, Cyl #5	40	Misfire, catalyst damaging, Cyl #2	5d	EVAP emission control system
9b	Fuel Injector, Cyl #6	41	Misfire, catalyst damaging, Cyl #3	5E	EVAP large leak
9c	Fuel Injector, Cyl #7	42	Misfire, catalyst damaging, Cyl #4		
9d	Fuel Injector, Cyl #8	43	Misfire, catalyst damaging, Cyl #5	6b	Control unit supply voltage
		44	Misfire, catalyst damaging, Cyl #6	6c	Battery disconnected
A4	EVAP Barometric tank pressure sensor	45	Misfire, catalyst damaging, Cyl #7	6F	Crankshaft position sensor
A5	Check engine lamp	46	Misfire, catalyst damaging, Cyl #8		
A7	Electrical fuel pump relay	47	Misfire, catalyst damaging, Cyl #9	7b	Coolant temperature sensor
A8	Idle speed actuator (open)	48	Misfire, catalyst damaging, Cyl #10	7c	Intake air temperature sensor
A9	Idle speed actuator (close)	49	Misfire, catalyst damaging, Cyl #11	8A	A/C Compressor torque reduction
AA	A/C Compressor control	50	Secondary air control, Bank 1	8b	Electric thermostat control final stage
		51	EKAT - Status 9 - Sensor check	8c	Torque imbalance
b7	EVAP large leak	52	EKAT - Status 10 - Sensor check	8d	ASC signal plausibility
b8	EVAP pinched hose check	53	EKAT - Status 11 - plausibility check of	8F	Intervention, MSR
		54	Secondary air pump final stage		
cb	Ignition feedback failed	55	Secondary air valve final stage	9A	Fuel Injector, Cyl #5
cc	EWS rolling code storage	61	EVAP small leak	9b	Fuel Injector, Cyl #6
		62	EVAP purge control valve circuit	9c	Fuel Injector, Cyl #7
d0	Secondary air control, Cyl 5-8	64	Transmission/coolant heat exchanger	9d	Fuel Injector, Cyl #8
d2	Knock Sensor, Cyl 1-2	65	DME, internal RAM failure	9E	Fuel Injector, Cyl #9
d3	Knock Sensor, Cyl 3-4	66	DME, external RAM failure	9F	Fuel Injector, Cyl #10
d4	Knock Sensor, Cyl 5-6	67	DME, ROM failure		
d5	Knock Sensor, Cyl 7-8	68	Fault code memory error	A0	Fuel Injector, Cyl #11
d6	CAN index verification	69	DME, EEPROM failure	A1	Fuel Injector, Cyl #12
d7	CAN timeout, left/right DME	70	Camshaft position sensor	A3	Electrical fuel pump relay, Bank 2
d8	CAN timeout, ASC	73	Air mass sensor	A4	EVAP barometric tank pressure sensor
d9	CAN signal, EML	75	Throttle position sensor	A5	Check engine lamp
dc	Knock control test pulse	78	Vehicle speed signal not present	A7	Electrical fuel pump relay
dE	Knock control test pulse	79	Load calculation crosscheck (HFM vs TPS)	A8	Idle speed actuator (open)
E4	Automatic start output	82	Swapped oxy sensors, PreCat	A9	Idle speed actuator (close)
E9	Automatic start output	85	DME bank identification input	AA	A/C Compressor control
EA	Automatic start input	87	Torque reduction: Transmission		
Ec	CAN timeout, EGS	90	Intervention, ASC	b3	A/C Compressor control, Bank 2
Ed	Automatic start output	93	Electric thermostat control performance	b7	EVAP large leak
		94	EWS Input	b8	EVAP pinched hose
Fd	Coolant fan final stage	96	Fuel Injector, Cyl #1		
		97	Fuel Injector, Cyl #2	cb	Ignition feedback failed
Table 0E		98	Fuel Injector, Cyl #3	cc	EWS rolling code storage
		99	Fuel Injector, Cyl #4		
1	EVAP LDP Valve final stage			d0	Secondary air control, Bank 2
2	EVAP Running losses valve final stage	0A	PreCat oxy sensor, Bank 1	d2	Knock Sensor #1
3	EVAP Reed switch not closed, doesn't	0c	AfterCat oxy sensor, Bank 1	d3	Knock Sensor #2
4	PreCat oxy sensor heater, Bank 2	0d	PreCat oxy sensor heater, Bank 1	d4	Knock Sensor #3
5	AfterCat oxy sensor heater, Bank 2	0E	AfterCat oxy sensor heater, Bank 1	d5	Knock Sensor #4

d6	CAN index verification	97	Fuel Injector, Cyl #5	E0	MSR intervention plausibility
d7	CAN timeout, left/right DME	98	Fuel Injector, Cyl #4	E1	ACC intervention plausibility
d8	CAN timeout, ASC	99	Fuel Injector, Cyl #8	E2	Fuel level plausibility
d9	CAN timeout, EML			E5	Pedal position sensor supply voltage
dc	Knock control test pulse	0A	PreCat O2 sensor, Cyl#1-4	E6	Pedal position sensors
dE	Knock control test pulse	0c	AfterCat O2 sensor, Cyl#1-4	E7	Pedal position sensor 1
		0d	PreCat O2 sensor heater, Cyl#1-4	E8	Pedal position sensor 2
E1	EKAT - Status 12 - temperature sensor -	0E	AfterCat O2 sensor heater, Cyl#1-4	E9	Automatic starter control output
E2	EKAT - Status 13 - temperature sensor -	0F	PreCat O2 sensor slow response,	EA	Automatic starter input signal
E3	EKAT - Status 14 - plausibility check of		Cyl#1-4	Ec	Intake air flap control
E4	Automatic start output			Ed	Automatic starter
E9	Automatic start output	1A	Mixture Control, off idle, Cyl #1-4		
EA	Automatic start input	1b	Mixture Control, off idle, Cyl #5-8	Table 1b	
		1c	Mixture Control, idle, Cyl #1-4		
Table 0F		1d	Mixture Control, idle, Cyl #5-8	01	Fuel pump relay
		1E	Mixture Control, idle, Cyl #1-4	02	Idle speed actuator (close)
01	LDP control circuit	1F	Mixture Control, idle, Cyl #5-8	03	Fuel Injector, Cyl #1
02	DM-TL solenoid control circuit	2d	Catalyst efficiency, Cyl#5-8	04	Fuel Injector, Cyl #3
03	PreCat O2 sensors swapped	3E	Misfire, random/multiple cylinders	05	Fuel Injector, Cyl #2
04	AfterCat O2 sensor heater, Cyl#5-8	5d	Evaporative emission system	06	Timeout SMG-CAN
05	PreCat O2 sensor heater, Cyl#5-8	6A	Brake switch	07	Intake camshaft position sensor
10	PreCat O2 sensor aging, Cyl#1-4	6b	Control unit self-test, ROM faulty	09	Knock sensor, Cyl #1-2
11	AfterCat O2 sensor aging, Cyl#1-4	6c	Control unit self-test, reset	10	Crankshaft sensor
12	PreCat O2 sensor, Cyl#5-8	6d	Battery voltage	11	SMG shifting
14	AfterCat O2 sensor, Cyl#5-8	6E	Torque control	12	Map controlled thermostat actuator
15	PreCat O2 sensor slow response, Cyl#5-8	6F	Crankshaft sensor	13	Secondary air pump relay
16	PreCat O2 sensor aging, Cyl#5-8	7A	Ambient temperature sensor	14	Starter relay
17	AfterCat O2 sensor aging, Cyl#5-8	7b	Engine coolant temperature sensor	15	Exhaust camshaft VANOS retard valve,
18	Mixture Control, higher load, Cyl #1-4	7c	Intake air temperature sensor	16	Exhaust camshaft VANOS advance
19	Mixture Control, higher load, Cyl #5-8	7d	Radiator outlet temperature sensor	17	Ignition Coil, Cyl #2
20	Idle speed control	7F	Coolant temperature plausibility	18	Ignition Coil, Cyl #3
21	Camshaft VANOS control, Cyl#1-4	8b	Map controlled thermostat jammed	19	Ignition Coil, Cyl #1
22	Camshaft VANOS control, Cyl#5-8	8c	Map controlled thermostat circuit/control	20	Fuel Injector, Cyl #6
27	EWS, manipulation detected	8d	Engine cooling fan control	21	Fuel Injector, Cyl #4
28	Catalyst efficiency, Cyl#1-4	8E	Exhaust flap control	24	Evaporative emission purge control
32	Misfire, Cyl #1	9A	Fuel Injector, Cyl #6	25	PreCat O2 sensor heater control, Cyl #1-3
33	Misfire, Cyl #5	9b	Fuel Injector, Cyl #3	26	PreCat O2 sensor heater control, Cyl #4-6
34	Misfire, Cyl #4	9c	Fuel Injector, Cyl #7	27	AfterCat O2 sensor heater control, Cyl #1-3
35	Misfire, Cyl #8	9d	Fuel Injector, Cyl #2	28	AfterCat O2 sensor heater control, Cyl #4-6
36	Misfire, Cyl #6				
37	Misfire, Cyl #3	A3	Throttle position / air mass plausibility	29	Air mass sensor
38	Misfire, Cyl #7	A4	Ambient pressure sensor	30	A/C Compressor relay
39	Misfire, Cyl #2	A5	VANOS output stage, Cyl #1-4	32	Ignition Coil, Cyl #4
50	Secondary air system, Cyl #1-4	A6	VANOS output stage, Cyl #5-8	33	Ignition Coil, Cyl #6
51	Secondary air system, Cyl #5-8	A7	Fuel pump relay control	34	Ignition Coil, Cyl #5
52	Secondary air valve	A8	Check engine lamp/MIL	35	Electronic fan (relay)
54	Secondary air control circuit	AA	A/C compressor control	36	Battery voltage behind main relay
55	Secondary air valve			41	Throttle position sensor 2, slave
62	Evaporative emission system purge	b7	LDP diagnosis	42	EWS interface
65	Torque monitoring	b8	LDP system	43	Intake camshaft VANOS advance valve
66	MFL interface	b9	LDP pressure sensor	44	SMG Safety concept
67	Safety concept monitoring	bA	DM-TL pump control circuit	45	Knock sensor, Cyl #5-6
68	Clutch switch	bb	DM-TL small leak	46	Knock sensor, Cyl #3-4
69	Control unit self-test, RAM faulty	bc	DM-TL large leak	48	Intake camshaft VANOS retard valve
70	Timing reference high resolution signal	bd	DM-TL pump current	49	Air mass sensor, plausibility
71	Camshaft position sensor, Cyl#1-4			50	Switch-chain grip
72	Camshaft position sensor, Cyl#5-8	c9	DM-TL heater	51	MFL interface signal
73	Air mass sensor	cc	EWS exchange code stored	52	Muffler flap
75	Throttle position sensors			55	Throttle position sensor, master
76	Throttle position sensor 1	d2	Knock sensor, Cyl #1-2	56	CAN bus offline
77	Throttle position sensor 2	d3	Knock sensor, Cyl #3-4	57	AfterCat O2 sensor voltage, Cyl #1-3
78	Vehicle speed	d4	Knock sensor, Cyl #5-6	58	AfterCat O2 sensor voltage, Cyl #4-6
79	Wheel sensor failure	d5	Knock sensor, Cyl #7-8	59	Control unit self-test, Safety Concept
82	Drive-by-wire throttle position monitoring	d6	Knock control zero test	60	Radiator outlet temp plausibility
83	Drive-by-wire throttle control	d7	Knock control offset	63	Control unit self-test, Safety Concept
84	Drive-by-wire throttle control output	d8	Knock control test pulse	69	Engine coolant temperature, Plausibility
85	Drive-by-wire throttle controller, spring	db	CAN timeout	70	Pedal position sensor 2, cross check
86	Drive-by-wire throttle controller, lower	dc	CAN timeout, EGS	73	Control unit self-test, internal ECU
87	Drive-by-wire throttle controller, amplifier	dd	CAN timeout, ASC/DSC	76	Throttle position sensor 1
88	Drive-by-wire throttle, emergency air	dE	CAN timeout, instrument cluster	77	Throttle position sensor 2
94	EWS signal/interface	dF	CAN timeout, ACC	78	Throttle position sensors, cross check
96	Fuel Injector, Cyl #1			79	Throttle position sensors, both bad

80	Idle speed deviation	Ad	Starter switch input	16	Fuel Injector, Cyl #3
81	Low fuel catalyst protection	AE	Mixture adaptation, Cyl #1-3	17	Fuel Injector, Cyl #6
82	EWS signal, manipulation detected	AF	Mixture adaptation, Cyl #4-6	18	Fuel Injector, Cyl #4
83	DSC intervention, plausibility	b0	DM-TL error	19	PreCat O2 sensor heater, Cyl #1-3
84	DSC message timeout	b2	Catalyst system efficiency, Cyl #1-3	21	Fuel Injector, Cyl #5
85	LWS message timeout	b3	Catalyst system efficiency, Cyl #4-6	23	Secondary air system relay/pump
86	Instrument Cluster message timeout	b4	Tank leak detected	32	EVAP system running losses valve
87	Vehicle speed signal	b5	Filler cap open	33	EVAP system shutoff valve
88	Idle speed controller	b6	Injection driver 1, over temperature	34	Rear exhaust valve flap
90	Fuel control, Cyl #1-3	b7	Injection driver 2, over temperature	35	Idle speed actuator (open)
91	Fuel control, Cyl #4-6	b8	Intake camshaft VANOS position control	37	PreCat O2 sensor heater, Cyl #4-6
95	Misfire w/ empty fuel tank	b9	Exhaust camshaft VANOS position	38	Ignition feedback - shunt resistor
96	Control unit self-test, memory test	bA	Ignition output stage, Cyl #1	39	Knock Sensor, Cyl #1-3
97	Control unit self-test, driver diagnostics	bb	Ignition output stage, Cyl #2	41	Camshaft sensor
98	Control unit self-test, communication	bc	Ignition output stage, Cyl #3	44	EVAP system, purge control valve ckt.
		bd	Ignition output stage, Cyl #4	45	Electrical fuel pump relay
0A	Exhaust camshaft position sensor	bE	Ignition output stage, Cyl #5	50	ASC signal, active too long
0c	PreCat O2 sensor, Cyl #4-6	bF	Ignition output stage, Cyl #6	51	MSR signal, active too long
0d	PreCat O2 sensor, Cyl #1-3			52	EML signal, active too long
0E	Tank small leak	c2	Control unit self-test, cruise control shut-off	53	Crankshaft Sensor
0F	Crankshaft/Camshaft position	c3	Control unit self-test, torque manager	64	DME Control Unit
1b	DM-TL switching valve	c4	Misfire w/ fuel cutoff, Cyl #1		
1c	Map controlled thermostat control	c5	Misfire w/ fuel cutoff, Cyl #2	0A	Coolant temperature sensor
1d	Idle speed actuator (open)	c6	Misfire w/ fuel cutoff, Cyl #3	0b	EVAP system pressure sensor
1E	Control unit self-test, A/D converter	c7	Misfire w/ fuel cutoff, Cyl #4	0c	Throttle position sensor
1F	Fuel Injector, Cyl #5	c8	Misfire w/ fuel cutoff, Cyl #5	0E	Intake air temperature sensor
2A	Vehicle speed signal	c9	Misfire w/ fuel cutoff, Cyl #6	1b	Idle speed actuator (close)
2b	Radiator outlet temperature sensor	cc	Misfire, multiple cylinders w/ fuel cutoff	1d	Ignition Coil, Cyl #1
2c	Thermal oil level sensor	cd	Misfire during warm-up, Cyl #1	1E	Ignition Coil, Cyl #3
2d	Drive-by-wire throttle actuator driver	cE	Misfire during warm-up, Cyl #2	1F	Ignition Coil, Cyl #5
2E	Fuel consumption (KVA) signal output	cF	Misfire during warm-up, Cyl #3	2E	Fuel level signal (reserve lamp)
2F	Engine RPM (TD) signal output			2F	Catalyst temperature after start-up
3A	Sensor voltage supply 1	d0	Misfire during warm-up, Cyl #4	3b	Knock Sensor, Cyl #4-6
3b	Sensor voltage supply 2	d1	Misfire during warm-up, Cyl #5	3d	AfterCat O2 sensor heater, Cyl #4-6
3c	Pedal position sensor 1, master	d2	Misfire during warm-up, Cyl #6	3E	Secondary air system, switching valve
3d	Pedal position sensor 2, master	d5	Misfire during warm-up, multiple	4A	A/C compressor relay
3F	Secondary air switching valve	d6	PreCat O2 sensor slow response, Cyl #1-3	4b	PreCat O2 sensor voltage, Cyl #1-3
4c	Ambient pressure sensor	d7	PreCat O2 sensor slow response, Cyl #4-6	4c	PreCat O2 sensor voltage, Cyl #4-6
4d	Intake air temperature sensor	d8	PreCat O2 sensor slow switching (rich to	4d	AfterCat O2 sensor voltage, Cyl #1-3
4E	Coolant temperature sensor	d9	PreCat O2 sensor slow switching (rich to	4E	AfterCat O2 sensor voltage, Cyl #4-6
4F	Exhaust gas temperature sensor	dA	PreCat O2 sensor signal size/amplitude,	4F	AfterCat O2 sensor heater, Cyl #1-3
5A	PreCat O2 sensor aging, Cyl #1-3	db	PreCat O2 sensor signal size/amplitude,		
5b	PreCat O2 sensor aging, Cyl #4-6	dd	System check, crankcase venting	bE	EVAP reed switch not closed
5c	AfterCat O2 sensor aging, Cyl #1-3	dE	CAN timeout, ZSG	bF	EVAP reed switch doesn't open
5d	AfterCat O2 sensor aging, Cyl #4-6				
6A	Brake light switch	E0	Load signal plausibility	c0	EVAP reed switch doesn't close
6b	Control unit self-test, pre-drive check of	E1	Ambient temperature	c1	EVAP clamped tube check
6c	Switching valve oil circuit left	E2	Instrument cluster, relative time	c2	EVAP large leak detected
6d	Switching valve oil circuit right	E4	Drive-by-wire, throttle control failure	c3	EVAP small leak detected
6E	Sport switch LED indicator	E5	Drive-by-wire, throttle control failure	c4	EVAP electrical LDP valve
6F	Pedal position sensor 1, cross check	E6	Drive-by-wire, throttle position failure	c5	EVAP barometric pressure sensor
7A	Control unit self-test, master processor	E7	Control unit self-test, slave processor	c8	PreCat O2 sensor no activity, Cyl #1-3
7b	Bus offline, SMG-CAN	E8	Evaporative emissions purge valve	c9	PreCat O2 sensor no activity, Cyl #4-6
7E	Fuel pump crash shut-off			ca	O2 sensor control limit, Cyl #1-3
7F	DM-TL module	F7	VANOS pressure accumulator valve	cb	O2 sensor control limit, Cyl #4-6
8b	Cruise control system	F8	Intake camshaft VANOS moving time	cc	Idle control system, idle speed not
8c	Engine noise too high	F9	Exhaust camshaft VANOS moving time		
8d	Fuel level, plausibility	FA	Intake camshaft VANOS sealing	d1	EWS message
8F	E-box-fan	Fb	Exhaust camshaft VANOS sealing	d2	Ignition feedback faulty (>2 cylinders)
9A	Crankcase venting			d3	Idle control valve mechanically stuck
9b	Control unit self-test, adaptation	Table 11 (& Table 16)		d4	VANOS mechanically stuck
9c	Control unit self-test, adaptation			d6	Vehicle speed signal not present
9d	Control unit self-test, memory test slave	01	Ignition Coil, Cyl #2	d7	ASC/MSR/EML - interface not plausible
9E	Control unit self-test, communication	02	Ignition Coil, Cyl #4	d8	Gear selector signal, signal undefined
9F	Control unit self-test, knock detection IC 1	03	Ignition Coil, Cyl #6	d9	CAN bus timeout
		05	Fuel Injector, Cyl #2	dA	CAN controller - warning level reached
A0	Control unit self-test, knock detection IC 2	06	Fuel Injector, Cyl #1	dB	CAN bus offline
A1	Knock control	08	Air mass sensor	dE	Time to closed loop temperature too
A3	Control unit self-test, master resets	10	A/C compressor PWM signal	E3	O2 sensor adaptation limit, Cyl #1-3
AA	Secondary air system, flow too low	12	EWS Signal	E4	O2 sensor adaptation limit, Cyl #4-6
Ab	Secondary air system, valve sticking	14	Check engine lamp	E5	PreCat O2 sensor response time, Cyl #1-3
Ac	VANOS pressure storage valve	15	VANOS (Solenoid)	E6	PreCat O2 sensor response time, Cyl #4-6

E7	PreCat O2 sensor switching Time, Cyl #1-3	0c	Lambda probe 2	83	CAN timeout (instr2)
E8	PreCat O2 sensor switching Time, Cyl #4-6	0d	Lambda probe 1	84	CAN timeout (instr3)
E9	Catalyst efficiency below threshold, Cyl #1-3	0F	Ignition current Bank 1	85	CAN timeout (ASC3)
EA	Catalyst efficiency below threshold, Cyl #4-6	1d	Idle adjuster opening coil	90	EVAP large leak detected
Eb	AfterCat O2 sensor heater power, Cyl #1-3	1F	Injector valve 5	91	EVAP small leak detected
Ec	AfterCat O2 sensor heater power, Cyl #4-6	2A	Speed sensor	92	EVAP capillary leak (0.5mm) detected
EE	Misfire, Cyl #1	2c	Active Oil level sensor	95	MDK position and air mass signal not
EF	Misfire, Cyl #2	2E	Consumption signal	96	PreCat O2 sensor short to B+, Cyl #1-3
		2F	Engine speed signal	97	PreCat O2 sensor short to ground, Cyl #1-3
F0	Misfire, Cyl #3	4d	Intake air temperature sensor	98	PreCat O2 sensor disconnection, Cyl #1-3
F1	Misfire, Cyl #4	4E	Cooling water temperature sensor	99	PreCat O2 sensor short to B+, Cyl #4-6
F2	Misfire, Cyl #5	8A	CAN-Timeout message 1		
F3	Misfire, Cyl #6	8b	CAN-Timeout message 2	0A	Coolant temperature sensor
F4	Flywheel adaptation, segment timing	8c	CAN-Timeout message 3	0b	Radiator outlet temperature sensor
F5	Secondary air system flow too low, Cyl #1-3	9b	Internal: Error memory Master	0E	Intake air temperature sensor
F6	Secondary air system flow too low, Cyl #4-6	9c	Internal: Error memory slave	1b	Idle speed actuator (close)
F7	Secondary air system injector valve	9d	Internal: Memory test slave	1d	Ignition Coil, Cyl #1
FA	EVAP TEV not operating	9E	Internal: Communication slave	1E	Ignition Coil, Cyl #3
Fb	EVAP small leak detected	9F	Internal: Knock module 1	1F	Ignition Coil, Cyl #5
Fc	EVAP incorrect purge flow			2A	Multi-function steering wheel (MFL)
Fd	EVAP shut off valve stuck closed	A0	Internal: Knock module 2	2b	Multi-function steering wheel (MFL)
FE	EVAP large leak detected	A1	Internal: Knock module 3	2d	Multi-function steering wheel (MFL)
FF	EVAP TEV stuck open	A2	Synchronization camshaft sensor	3b	Knock Sensor, Cyl #4-6
		A3	Internal: Ecu-reset	3d	AfterCat O2 sensor heater, Cyl #4-6
Table 12				3E	Secondary air system, switching valve
		Table 15 (different from Table K15)		4A	A/C compressor relay
01	Relay Fuel pump			4F	AfterCat O2 sensor heater, Cyl #1-3
02	Idle adjuster closing coil	01	Ignition Coil, Cyl #2	6A	VANOS, exhaust mechanically stuck
03	Injector valve 1	02	Ignition Coil, Cyl #4	6d	Motorized Throttle Valve (MDK), PWM
04	Injector valve 3	03	Ignition Coil, Cyl #6	6E	Pedal sensor (PWG) potentiometer #1
05	Injector valve	05	Fuel Injector, Cyl #2	6F	Pedal sensor (PWG) potentiometer #2
07	Input camshaft sensor	06	Fuel Injector, Cyl #1	7A	Oil temperature sensor
09	Ignition current Bank 2	08	Air mass sensor	7b	Electric thermostat control final stage
10	Error crankschaft-sensor	12	Camshaft sensor, exhaust cam	7c	DiSA flap control
13	Relay Secondary air pump	13	VANOS solenoid, exhaust	7d	Coolant fan final stage
15	Output-VANOS-late valve	15	VANOS solenoid, intake	7E	LDP solenoid valve
16	Output-VANOS-early valve	16	Fuel Injector, Cyl #3	7F	Electrical fuel pump
17	Ignition output transistor 2	17	Fuel Injector, Cyl #6	8c	EVAP LDP reed switch not closed
18	Ignition output transistor 3	18	Fuel Injector, Cyl #4	8d	EVAP LDP reed switch doesn't open
19	Ignition output transistor 1	19	PreCat O2 sensor heater, Cyl #1-3	8E	EVAP LDP reed switch doesn't close
20	Injector valve 6	21	Fuel Injector, Cyl #5	8F	EVAP clamped tube check
21	Injector valve 4	23	Secondary air system electrical pump	9A	PreCat O2 sensor short to ground,
24	Tank ventilation valve	26	Clutch switch		
25	Relay Lambda probe heating	27	Brake light switch (BLS) / brake light test plausibility	9b	PreCat O2 sensor disconnection, Cyl #4-6
29	Air mass flow meter	28	Brake light switch (BLS) / pedal sensor plausibility	9c	AfterCat O2 sensor short to B+, Cyl #1-3
30	Relay Air conditioning compressor	29	Multi-function steering wheel (MFL)	9d	AfterCat O2 sensor short to ground, Cyl #1-3
32	Ignition output transistor 4	32	Running loss (3/2) valve final stage	9F	AfterCat O2 sensor short to B+, Cyl #4-6
33	Ignition output transistor 6	34	Rear exhaust valve flap		
34	Ignition output transistor 5	35	Idle speed actuator (open)	A0	AfterCat O2 sensor short to ground, Cyl #4-6
35	Relay electric fan	37	PreCat O2 sensor heater, Cyl #4-6	A8	Electrical thermostat mechanically
36	Battery voltage	38	Ignition feedback - shunt resistor	A9	Motorized Throttle (MDK) final stage
40	Air condition switch AC/KO	39	Knock Sensor, Cyl #1-3	AA	Communication with safety controller
42	EWS-interface	41	Camshaft sensor, intake cam	Ab	Safety controller has shut down MDK
43	Output-VANOS-early valve	44	EVAP system, purge control valve	Ac	Pedal sensor (PWG) short between
44	Knock sensor 3	45	Electrical fuel pump relay	Ad	Motorized Throttle (MDK) short between
45	Knock sensor 2	53	Crankshaft Sensor	AE	Motorized Throttle (MDK) idle position
46	Knock sensor 1	64	DME Control Unit	AF	Pedal sensor (PWG) pot. #1 idle
48	Output-VANOS-late valve	67	VANOS, faulty intake reference value		
49	Throttle valve potentiometer	68	VANOS, faulty exhaust reference value	b0	Pedal sensor (PWG) pot. #2 idle
50	Switch Gear	69	VANOS, intake mechanically stuck	bb	O2 sensor ckt, no activity detected,
52	Starter switch KL50	70	Motorized Throttle Valve (MDK)	bc	PreCat O2 sensor heater insufficient,
56	CAN-bus Off			bd	PreCat O2 sensor heater insufficient, Cyl #4-6
82	EWS-signal manipulation	71	Motorized Throttle Valve (MDK)	bE	AfterCat O2 sensor heater insufficient,
88	Error idle speed controller	72	Motorized Throttle Valve (MDK) final	bF	AfterCat O2 sensor heater insufficient,
89	CAN-protocol error	73	Reference voltage (5v) source for #1 potentiometers		
90	lambda controller 1	74	Reference voltage (5v) source for #2 potentiometers	cA	O2 sensor control limit, Cyl #1-3
91	lambda controller 2	75	Pedal sensor (PWG) potentiometer	cb	O2 sensor control limit, Cyl #4-6
96	Internal: Memory test Master	76	Motorized Throttle Valve (MDK)	cc	Idle control system, idle speed not
97	Internal: Driver diagnosis	77	Motorized Throttle Valve (MDK)		
98	Internal: Communication Master	78	PWG / MDK potentiometers not	d0	EWS engine speed check not ok
		80	EWS signal	d1	EWS message
0A	Output camshaft sensor	82	CAN timeout (ASC1)	d2	Ignition feedback faulty (>2 cylinders)

d3	Idle control valve mechanically stuck	45	Knock sensor, Cyl #5-6	5b	PreCat O2 sensor aging, Cyl #5-8
d6	Vehicle speed signal not present	46	Knock sensor, Cyl #3-4	5c	AfterCat O2 sensor aging, Cyl #1-4
d7	AfterCat O2 sensor disconnection, Cyl #1-3	47	Knock sensor, Cyl #7-8	5d	AfterCat O2 sensor aging, Cyl #5-8
d8	AfterCat O2 sensor disconnection, Cyl #4-6	48	Intake camshaft VANOS retard valve,	6A	Brake light switch
d9	CAN timeout (EGS1)	49	Air mass sensor, plausibility	6b	Control unit self-test, pre-drive check of
db	CAN bus offline	50	Switch-chain grip	6c	Switching valve oil circuit left
dc	AfterCat O2 sensor slow response time,	51	MFL interface signal	6d	Switching valve oil circuit right
dd	AfterCat O2 sensor slow response time,	52	Muffler flap	6E	Sport switch LED indicator
dE	Coolant temp too low for closed loop	53	Exhaust camshaft VANOS advance	6F	Pedal position sensor 1, cross check
dF	AfterCat O2 sensor slow switching time,	54	Exhaust camshaft VANOS retard valve,	7A	Control unit self-test, master processor
		55	Throttle position sensor, master	7b	Bus offline, SMG-CAN
E0	AfterCat O2 sensor slow switching time,	56	CAN bus offline	7c	Active engine bearing
E1	AfterCat O2 sensor trim control, Cyl #1-3	57	AfterCat O2 sensor voltage, Cyl #1-4	7d	Spoiler adjustment
E2	AfterCat O2 sensor trim control, Cyl #4-6	58	AfterCat O2 sensor voltage, Cyl #5-8	7E	Fuel pump crash shut-off
E3	O2 sensor adaptation limit, Cyl #1-3	59	Control unit self-test, Safety Concept	7F	DM-TL module
E4	O2 sensor adaptation limit, Cyl #4-6	63	Control unit self-test, Safety Concept	8A	Differential lock
E5	PreCat O2 sensor slow response time,	64	Tire pressure left front	8b	Cruise control system
E6	PreCat O2 sensor slow response time,	65	Tire pressure right front	8c	Engine noise too high
E7	PreCat O2 sensor slow switching Time,	66	Tire pressure right back	8d	Fuel level, plausibility
E8	PreCat O2 sensor slow switching Time,	67	Tire pressure left back	8F	E-box-fan
E9	Catalyst efficiency below threshold, Cyl #1-3	69	Engine coolant temperature, Plausibility	9b	Control unit self-test, adaptation
EA	Catalyst efficiency below threshold, Cyl #4-6	70	Pedal position sensor 2, cross check	9c	Control unit self-test, adaptation
Eb	PreCat O2 sensor trim control, Cyl #1-3	71	Intake camshaft VANOS position control, Cyl #5-8	9d	Control unit self-test, memory test slave
Ec	PreCat O2 sensor trim control, Cyl #4-6	72	Exhaust camshaft VANOS position	9E	Control unit self-test, communication
EE	Misfire, Cyl #1	73	Control unit self-test, internal ECU	9F	Control unit self-test, knock detection
EF	Misfire, Cyl #2	74	Servotronic valve current		IC 1
		75	Servotronic speed signal	A0	Control unit self-test, knock detection IC
FA	Functional check purge valve	76	Throttle position sensor 1	A1	Knock control
		77	Throttle position sensor 2	A2	Crankshaft/Camshaft position
Table 16 (see table 11)		78	Throttle position sensors, cross check	A3	Control unit self-test, master resets
		79	Throttle position sensors, both bad	AA	Secondary air system, flow too low
Table 18		80	Idle speed deviation	Ab	Secondary air system, valve sticking
		82	EWS signal, manipulation detected	Ac	VANOS pressure storage valve AD
01	Fuel pump relay	83	DSC intervention, plausibility	AE	Air-fuel adaptation, Cyl #1-4
02	Idle speed actuator (close)	84	DSC message timeout	AF	Air-fuel adaptation, Cyl #5-8
03	Fuel Injector, Cyl #1	85	Steering angle sensor message timeout		
04	Fuel Injector, Cyl #3	86	Instrument Cluster message timeout	b0	Air-fuel adaptation at idle, Cyl #1-4
05	Fuel Injector, Cyl #2	87	Vehicle speed signals (both Discrete &	b1	Air-fuel adaptation at idle, Cyl #5-8
06	Timeout SMG-CAN	88	Idle speed controller	b2	Catalyst system efficiency, Cyl #1-4
07	Intake camshaft position sensor, Cyl #1-4	89	Jet stream pump	b3	Catalyst system efficiency, Cyl #5-8
08	Intake camshaft position sensor, Cyl #5-8	90	Fuel control, Cyl #1-4	b4	Tank leak detected
09	Knock sensor, Cyl #1-2	91	Fuel control, Cyl #5-8	b5	Filler cap open
10	Crankshaft sensor	95	Misfire w/ empty fuel tank	b6	Injection driver 1, over temp.
12	Map controlled thermostat actuator	96	Control unit self-test, memory test	b7	Injection driver 2, over temp.
13	Secondary air pump relay	97	Control unit self-test, driver diagnostics	b8	Intake camshaft VANOS position control, Cyl #1-4
14	Starter relay	98	Control unit self-test, communication	b9	Exhaust camshaft VANOS position
15	Exhaust camshaft VANOS retard valve,			bA	Ignition output stage, Cyl #1
16	Exhaust camshaft VANOS advance	0A	Exhaust camshaft position sensor, Cyl #1-4	bb	Ignition output stage, Cyl #2
17	Ignition Coil, Cyl #2	0b	Exhaust camshaft position sensor, Cyl #5-8	bc	Ignition output stage, Cyl #3
18	Ignition Coil, Cyl #3			bd	Ignition output stage, Cyl #4
19	Ignition Coil, Cyl #1	0c	PreCat O2 sensor, Cyl #5-8	bE	Ignition output stage, Cyl #5
20	Fuel Injector, Cyl #6	0d	PreCat O2 sensor, Cyl #1-4	bF	Ignition output stage, Cyl #6
21	Fuel Injector, Cyl #4	0E	Tank small leak		
22	Fuel Injector, Cyl #7	0F	Crankshaft/Camshaft position	c0	Ignition output stage, Cyl #7
23	Fuel Injector, Cyl #8	1A	Ignition Coil, Cyl #8	c1	Ignition output stage, Cyl #8
24	Evaporative emission purge control	1b	DM-TL switching valve	c2	Control unit self-test, cruise control shut-off
25	PreCat O2 sensor heater control, Cyl #1-4	1c	Map controlled thermostat control	c3	Control unit self-test, torque manager
26	PreCat O2 sensor heater control, Cyl #5-8	1d	Idle speed actuator (open)	c4	Misfire, Cyl #1
27	AfterCat O2 sensor heater control, Cyl #1-4	1E	Control unit self-test, A/D converter	c5	Misfire, Cyl #2
28	AfterCat O2 sensor heater control, Cyl #5-8	1F	Fuel Injector, Cyl #5	c6	Misfire, Cyl #3
29	Air mass sensor, Cyl #1-4	2A	Vehicle speed input signal, hardwired A	c7	Misfire, Cyl #4
30	A/C Compressor relay	2b	Radiator outlet temperature sensor	c8	Misfire, Cyl #5
32	Ignition Coil, Cyl #4	2c	Thermal oil level sensor	c9	Misfire, Cyl #6
33	Ignition Coil, Cyl #6	2d	Drive-by-wire throttle actuator driver	cA	Misfire, Cyl #7
34	Ignition Coil, Cyl #5	2E	Fuel consumption (KVA) signal output	cb	Misfire, Cyl #8
35	Electronic fan (relay)	2F	Engine RPM (TD) signal output	cc	Misfire, multiple cylinders
36	Battery voltage behind main relay	3A	Sensor voltage supply 1	cd	Misfire during warm-up, Cyl #1
37	Ignition Coil, Cyl #7	3b	Sensor voltage supply 2	cE	Misfire during warm-up, Cyl #2
39	Air mass sensor, Cyl #5-8	3c	Pedal position sensor 1, master	cF	Misfire during warm-up, Cyl #3
41	Throttle position sensor 2, slave	3d	Pedal position sensor 2, master		
42	EWS interface	3F	Secondary air switching valve	d0	Misfire during warm-up, Cyl #4
43	Intake camshaft VANOS advance valve,	5A	PreCat O2 sensor aging, Cyl #1-4	d1	Misfire during warm-up, Cyl #5

d2	Misfire during warm-up, Cyl #6	68	Exhaust camshaft VANOS, over-		
d3	Misfire during warm-up, Cyl #7	69	Intake camshaft VANOS, over-retarded	c4	Pressure sensor circuit
d4	Misfire during warm-up, Cyl #8	70	Throttle position sensor 1	c5	Pressure sensor circuit
d5	Misfire during warm-up, multiple	71	Throttle position sensor 2	c6	Catalytic converter efficiency, Cyl #1-3
d6	PreCat O2 sensor slow response, Cyl #1-4	72	Pedal position sensor, plausibility	c7	Catalytic converter efficiency, Cyl #4-6
d7	PreCat O2 sensor slow response, Cyl #5-8	73	Throttle position sensor, adaptation	cA	O2 sensor control limit, Cyl #1-3
d8	PreCat O2 sensor slow switching (rich to	75	Pedal position sensor,	cb	O2 sensor control limit, Cyl #4-6
d9	PreCat O2 sensor slow switching (rich to	76	Throttle position sensor 1, plausibility,	cc	Idle control system, idle speed not
dA	PreCat O2 sensor signal size/amplitude,	77	Throttle position sensor 2, plausibility,		
dB	PreCat O2 sensor signal size/amplitude,	78	Brake and Pedal positions not plausible	d1	EWS message
		80	EWS signal	d2	Ignition feedback faulty (>2 cylinders)
E4	Drive-by-wire, throttle control failure	81	Timeout, SSG	d3	Idle control valve mechanically stuck
E5	Drive-by-wire, throttle control failure	82	Timeout, CAN - ASC1	d6	Vehicle speed signal not present
E6	Drive-by-wire, throttle position failure	83	Timeout, CAN - INSTR2	d7	AfterCat O2 sensor disconnection, Cyl #1-3
E7	Control unit self-test, slave processor	84	Timeout, CAN - INSTR3	d8	AfterCat O2 sensor disconnection, Cyl #4-6
E8	Evaporative emissions purge valve	85	Timeout, CAN - ASC3	d9	CAN timeout (EGS1)
F7	VANOS pressure accumulator valve	86	SSG intervention, plausibility	db	CAN bus offline
F8	Intake camshaft VANOS moving time,	87	Throttle position sensor, adaptation	dc	AfterCat O2 sensor slow response time,
F9	Exhaust camshaft VANOS moving time,	88	Throttle position sensor, adaptation	dd	AfterCat O2 sensor slow response time,
FA	Intake camshaft VANOS sealing, Cyl #1-4	92	Pedal position sensor 1, supply voltage	dE	Coolant temp too low for closed loop
		93	Pedal position sensor 2, supply voltage	dF	AfterCat O2 sensor slow switching time,
Fb	Exhaust camshaft VANOS sealing, Cyl #1-4	95	Air mass sensor, range/performance		
Fc	Intake camshaft VANOS moving time,	96	PreCat O2 sensor voltage, Cyl #1-3	E0	AfterCat O2 sensor slow switching time,
Fd	Exhaust camshaft VANOS moving time,	97	PreCat O2 sensor voltage, Cyl #4-6	E1	AfterCat fuel trim system, Cyl #1-3
FE	Intake camshaft VANOS sealing, Cyl #5-8	98	AfterCat O2 sensor voltage, Cyl #1-3	E2	AfterCat fuel trim system, Cyl #4-6
		99	AfterCat O2 sensor voltage, Cyl #4-6	E3	O2 sensor adaptation limit, Cyl #1-3
Table 19				E4	O2 sensor adaptation limit, Cyl #4-6
		0A	Engine coolant temperature	E5	PreCat O2 sensor slow response time,
01	Ignition Coil, Cyl #2	0b	Engine coolant temperature, radiator	E6	PreCat O2 sensor slow response time,
02	Ignition Coil, Cyl #4	0c	Engine coolant temperature, Plausibility	E7	PreCat O2 sensor slow switching Time,
03	Ignition Coil, Cyl #6	0E	Intake air temperature	E8	PreCat O2 sensor slow switching Time,
05	Fuel Injector, Cyl #2	1b	Idle speed actuator (close)	E9	Catalyst efficiency below threshold, Cyl #1-3
06	Fuel Injector, Cyl #1	1d	Ignition Coil, Cyl #1	EA	Catalyst efficiency below threshold, Cyl #4-6
08	Air mass sensor	1E	Ignition Coil, Cyl #3	Eb	PreCat fuel trim system, Cyl #1-3
12	Exhaust camshaft position sensor	1F	Ignition Coil, Cyl #5	Ec	PreCat fuel trim system, Cyl #4-6
13	Exhaust camshaft solenoid valve	2A	MFL signal redundancy	EE	Misfire, Cyl #1
15	Intake camshaft solenoid valve	2b	MFL seesaw key	EF	Misfire, Cyl #2
16	Fuel Injector, Cyl #3	2d	MFL bit toggle		
17	Fuel Injector, Cyl #6	2F	Torque limitation, safety level 1	F0	Misfire, Cyl #3
18	Fuel Injector, Cyl #4	3A	Control module self-test, control module	F1	Misfire, Cyl #4
19	PreCat O2 sensor heater insufficient, Cyl #1-3	3b	Knock Sensor, Cyl #4-6	F2	Misfire, Cyl #5
21	Fuel Injector, Cyl #5	3d	AfterCat O2 sensor heater insufficient,	F3	Misfire, Cyl #6
23	Secondary air pump relay	3E	Secondary air system, switching valve	F4	Flywheel adaptation, segment timing
24	Main relay	3F	Control module self-test, control module	F5	Secondary air system flow too low, Cyl #1-3
25	Main relay switching delay	4A	A/C compressor relay	F6	Secondary air system flow too low, Cyl #4-6
26	Clutch switch	4F	AfterCat O2 sensor heater insufficient,	F7	Secondary air system valve stuck open
27	BLS/BTS plausibility	5E	Secondary air system, air mass	F8	AfterCat O2 sensor, signal after
30	Control module self-test, control module	5F	Secondary air system, tube blocked	F9	AfterCat O2 sensor, signal after
31	Control module self-test, torque	6A	Exhaust camshaft VANOS, over-	FA	Functional check purge valve
32	Control module self-test, speed	6d	Throttle valve control circuit		
33	Control module self-test, speed	6E	Pedal position sensor 1	Table 20	
34	Exhaust flap	6F	Pedal position sensor 2		
35	Idle speed actuator (open)	7A	Oil temperature sensor	2712	DMTL magnetic valve
37	PreCat O2 sensor heater insufficient, Cyl #4-6	7b	Map controlled thermostat	2715	PreCat O2 sensor heater control, Bank 2
38	Ignition feedback - shunt resistor	7c	DISA control	2716	AfterCat O2 sensor heater control, Bank 1
39	Knock Sensor, Cyl #1-3	7d	E-fan	2717	AfterCat O2 sensor heater control, Bank 2
41	Intake camshaft position sensor	7E	DM-TL Switching solenoid	2718	Camshaft generator: positioning
42	Control module self-test, control module	8c	DM-TL pump control circuit	2719	Crank shaft sensor: cycle duration
43	Control module self-test, control module	8E	DM-TL pump current	271A	PreCat O2 sensor signal, Bank 1
44	Evaporative emission system, purge	8F	DM-TL leak detected	271c	AfterCat O2 sensor signal, Bank 1
				271d	PreCat O2 sensor heater control, Bank 1
45	Fuel pump relay	A0	Throttle valve position controller, stuck	271F	O2 sensor aging bank 1: period duration
46	Control module self-test, control module	A1	Throttle valve position controller, stuck	2720	O2 sensor aging bank 1: switching time
47	Control module self-test, control module	A2	Throttle valve position controller, control	2721	AfterCat O2 sensor aging, Bank 1
		A8	Coolant thermostat jammed open	2722	PreCat O2 sensor signal, Bank 2
48	Control module self-test, control module			272A	AfterCat O2 sensor signal, Bank 2
53	Crankshaft Sensor	bA	O2 sensor heating during regulation, Cyl #1-3	2725	O2 sensor aging bank 2: period duration
60	Secondary air system, pump not active	bb	O2 sensor heating during regulation,	2726	O2 sensor aging bank 2: switching time
61	Secondary air system, flow too low63	bc	PreCat O2 sensor heater circuit, Cyl #1-3	2727	AfterCat O2 sensor aging, Bank 2
62	Secondary air system, flow too high	bd	PreCat O2 sensor heater circuit, Cyl #4-6	273A	TPS 1: signal not plausible against MAF
64	Memory self-test, control module	bE	AfterCat O2 sensor heater circuit, Cyl #1-3	2735	TPS 2: signal not plausible against MAF
67	Intake camshaft VANOS, over-	bF	AfterCat O2 sensor heater circuit, Cyl #4-6	2737	EWS 3.3 manipulation protection

2738	Catalyst bank 1	27c4	Main relay	289c	AfterCat 02 sensor heater function, Bank1
273b	Catalyst bank 1 via NOx-sensor	27c5	Brake-light-test-switch: signal	289d	AfterCat 02 sensor heater function, Bank2
273c	Catalyst bank 2 via NOx-sensor	27c7	Main relay: switching delay	289E	PreCat 02 sensor, Bank 1
273d	Catalyst bank 2	27cA	DMTL pump: controlled	289F	PreCat 02 sensor, Bank 2
2740	Pedal 1: voltage supply	27cc	DMTL: leakage	28A1	Driving speed regulation
2741	Pedal 2: voltage supply	27cd	DMTL: module failure	28A2	Air path
2742	Misfire Cyl. 1	27cF	Ignition cyl. 1	28A4	Engine-speed
2743	Misfire Cyl. 5	27d0	Ignition cyl. 5	28A5	Pedal value
2744	Misfire Cyl. 3	27d1	Ignition cyl. 3	28A7	Telegram monitoring: NOx-sensor 1
2745	Misfire Cyl. 6	27d2	Ignition cyl. 6	28A8	Telegram monitoring: NOx-sensor 2
2746	Misfire Cyl. 2	27d3	Ignition cyl. 2	28AA	Idle speed regulator
2747	Misfire Cyl. 4	27d4	Ignition cyl. 4	28Ab	External torque requirement: monitoring
274E	Misfire on several cylinders	27d6	Idle controller: position closed	28Ac	Nominal torque
2750	Electronic throttle controller: momentarily sticking	27d7	Idle controller: position open	28Ad	Actual torque
2751	Electronic throttle controller: permanently sticking	27d9	DMTL heater: controlled	28AE	Torque limit
2752	Electronic throttle controller: hard movement	27dA	BSD-generator	28b1	Rpm limit
2753	Ignition coil cyl. 1	27db	Accelerator pedal and brake pedal: signal implausible	28b2	Rpm limiting: reset
2754	Ignition coil cyl. 5	27dc	EWS 3.3 exchange code storing	28b3	Throttle flap: cont. adaptation
2755	Ignition coil cyl. 3	27dd	Temperature sensor engine coolant: gradient	28b4	Sport button
2756	Ignition coil cyl. 6	27dE	Temperature sensor engine coolant: signal	28b5	Sound flap: signal
2757	Ignition coil cyl. 2	27dF	Temperature sensor engine coolant: constant signal	28b6	Inlet-camshaft bank1: mechanical
2758	Ignition coil cyl. 4	27E0	Crankshaft sensor: segment time measurement	28b8	Exhaust camshaft bank1: mechanical
2760	Secondary air system	27E2	Knock sensor 1	28bA	Inlet-camshaft bank1: rough-running
2761	Secondary air system	27E3	Knock sensor 2	28bc	Exhaust camshaft bank1: stiff
2762	Secondary air valve	27Eb	Telegram (EGS 2) missing from EGS-ECU	28bd	Intake camshaft sensor: latching
2764	Relay sec.air pump: controller	27Ec	Telegram (EGS 1) missing from EGS-ECU	28bE	Exhaust camshaft sensor: latching
2765	Solenoid valve secondary air: activation	27F2	Petrol tank level implausible	28bF	NOx-sensor 1
2766	Camshaft sensor inlet: signal time	27F7	Pedal input sensor 1	28c0	NOx-sensor 2
2767	Camshaft sensor outlet: signal time	27F8	Pedal input sensor 2	28c1	PreCat 02 sensor, Bank 1
2768	Camshaft sensor inlet: phase position	27F9	Start auto.: control	28c2	PreCat 02 sensor, Bank 2
276c	Camshaft sensor outlet: phase position	27Fb	Controlled air management: activation	28c3	PreCat 02 sensor heater function, Bank 1
276d	Function-check tank venting			28c4	PreCat 02 sensor heater function, Bank 2
2770	Secondary air heated film air mass sensor	2800	Telegram (I-combi 2) missing from combi-ECU	28c5	AfterCat 02 sensor system check, Bank 1
2772	TEV: controller	2801	Idle-speed implausible (air leakage)	28c6	AfterCat 02 sensor system check, Bank 2
2774	Engine cut off time	2804	Driving speed regulation: requirement	28cA	Ozone exchange: too low
2777	DME-self test: AD-converter	2805	Switch driving speed regulation: signal	28cb	Ozone sensor 2
2778	Clutch switch	2806	Driving speed regulation: time limit data transmission reached	28cc	Ozone sensor 1
2779	DME-self test: RAM	2807	PWM-potentiometer: signal	28cF	Fuel pump: emergency switch off
2783	Heated film at air mass measuring sensor	2808	PWM: signal	28d0	Fuel pump
2786	TPS 1	2809	Telegram (I-combi 3) missing from combi-ECU	28dd	Air mass system
2787	TPS 2	280b	Telegram (ASC 1) missing from ASC-ECU	28E6	02 sensor analysis unit/self test, Bank 1
2788	Vehicle speed	280c	Telegram (ASC 3) missing from ASC-ECU	28E7	02 sensor analysis unit/self test, Bank 2
278b	Coolant temp sensor	280d	Telegram (LWS) missing from LWS-ECU	28E8	02 sensor trim control, Bank 1
278c	Intake air sensor	280E	Telegram (SMG 1) missing from SMG-ECU	28E9	02 sensor trim control, Bank 2
278d	Radiator outlet temp sensor	280F	Message (ASC 4) missing from ASC-ECU	28EA	AfterCat 02 sensor signal, Bank 1
278F	Generator: under uproar	2811	Local CAN communication error	28Eb	AfterCat 02 sensor signal, Bank 2
2790	Coolant-outlet-temperature: implausible	2812	Oil temperature	28Ec	AfterCat 02 sensor (after full load) Bank 1
2794	Electronic throttle controller	281A	Telegram (TxU) missing	28Ed	AfterCat 02 sensor (after full load) Bank 2
2796	Electronic throttle controller: adaptation wrong	281b	Telegram (EKP) missing from EKP-ECU	28F0	AfterCat 02 sensor system check, Bank 1
279b	Mapped thermostat cooling: mechanical	281c	Bit serial data interface (BSD): signal	28F1	AfterCat 02 sensor system check, Bank 2
279c	Mapped thermostat cooling: control	281d	BSD generator: signal	28F2	02 sensor trim control, Bank 1
279d	Engine fan: activation	281E	Variable air intake system: activation	28F3	02 sensor trim control, Bank 2
279E	Exhaust flap: control	282F	PT-CAN communication error	28F4	PreCat 02 sensor cold test, Bank 1
27A0	E-box fan: control	2830	DME-self test: checksum	28F5	PreCat 02 sensor cold test, Bank 2
27A1	Electronic throttle controller: start check	2831	DME self diagnostics: CPU monitoring	28F6	AfterCat 02 sensor cold test, Bank 1
27A4	Interface EWS 3.3 - DME	283A	Oil condition sensor	28F7	AfterCat 02 sensor cold test, Bank 2
27A5	Throttle valve: new adaptation	283F	Oil pressure switch: signal implausible	28F9	Roughness: segment time measurement
27A6	Injection valve cyl. 1	2869	DME self diagnostics: RAM-check failed	28FA	Torque in shift phase
27A7	Injection valve cyl. 5	286A	DME self diagnostics: knock sensor module	28Fb	Active Cruise Control (ACC)
27A8	Injection valve cyl. 3	286b	DME self diagnostics: multi output module	28FF	DME-self test
27A9	Injection valve cyl. 6	2882	Mixture preparation bank1		
27AA	Injection valve cyl. 2	2883	Mixture preparation bank2	2900	DME-self test
27Ab	Injection valve cyl. 4	2892	Misfire with low tank volume	293c	Telegram monitoring: torque requirement AFS
27b2	Brake-light-switch: signal	2893	Internal ECU temperature	293d	Telegram monitoring: EKP
27b4	Ambient-pressure sensor	2894	Irreversible ecu error	2947	Telgram monitoring: torque request ACC
27b5	Camshaft control inlet bank1: controller	2895	Crank shaft sensor: signal	2948	Telegram monitoring: ARS
27b7	Gas pump relay: control	2896	Camshaft sensor: input-signal	2949	Telegram monitoring: CAS
27b9	PreCat 02 sensor voltage increase, Bank1	2897	Camshaft sensor: output-signal	294A	Telgram monitoring: torque request SMG
27bA	PreCat 02 sensor voltage increase, Bank2	2898	AfterCat 02 sensor signal, Bank 1	294b	Telegram monitoring: speed DSC
27bd	Camshaft control outlet bank1: controller	2899	AfterCat 02 sensor signal, Bank 2	294c	Telegram monitoring: status DSC
27c2	AC-compressor controller	289A	PreCat 02 sensor heater function, Bank 1	294d	Telgram monitoring: torque request EGS
27c3	Thermal oil level sensor	289b	PreCat 02 sensor heater function, Bank 2	294E	Telegram monitoring: transmission data EGS/SMG

294F	Telegram monitoring: torque request SMG	29E6	Fuel mixture adaptation 2, upper speed range	2A86	Exhaust VANOS, Control 2
2950	Telegram monitoring: AC	29F1	Fuel pressure, plausibility	2A87	Exhaust Vanos variable cam control test, mechanics
2951	Telegram monitoring: temp. kombi	29F2	Fuel high pressure system, fuel pressure	2A8A	Intake VANOS, Adaptation limit stop
2952	Telegram monitoring: km-count kombi	29F3	Fuel pressure sensor, electrical	2A8c	Exhaust VANOS, Adaptation limit stop
2953	Telegram monitoring: status kombi	29F4	Cat conversion	2A92	Exhaust VANOS 1, control
2954	Telegram monitoring: batt.voltage power module	29F5	Cat conversion 2	2A93	Intake VANOS, control
2955	Telegram monitoring: charge voltage power module	29F6	Cat conversion, complete system: below threshold	2A94	Crankshaft sensor, signal
2956	Telegram monitoring: cruise control	29F7	Cat conversion 2, complete system: below threshold	2A95	Crankshaft sensor, synchronization
2957	Telegram monitoring: steering angle	29FF	Secondary air system	2A96	Crankshaft sensor, tooth failure2A97 crankshaft sensor, gap failure
2958	Telegram monitoring: sport switch			2A98	Crank shaft - intake camshaft, correlation
2960	PreCat O2 sensor, Bank 1	2A00	Secondary air system	2A99	Crank shaft - exhaust camshaft, correlation
2961	PreCat O2 sensor, Bank 2	2A01	Secondary air valve, mechanics	2A9A	Camshaft sensor intake, signal
2962	PreCat O2 sensor dynamics, Bank 1	2A02	Secondary air valve, input signal	2A9b	Camshaft sensor exhaust, signal
2963	PreCat O2 sensor dynamics, Bank 2	2A03	Secondary air pump relay, input signal	2A9c	Crank shaft sensor, electric
2964	PreCat O2 sensor ceramic temp, Bank 1	2A04	Secondary air mass sensor, plausibility	2A9E	Camshaft sensor intake, synchronization
2965	PreCat O2 sensor ceramic temp, Bank 2	2A07	Secondary air valve, mechanics	2A9F	Camshaft sensor exhaust, synchronization
2966	PreCat O2 sensor signal, Bank 1	2A0c	Exhaust fume return, system function	2AA0	Camshaft sensor intake, signal
2967	PreCat O2 sensor signal, Bank 2	2A0d	Exhaust fume return valve, input signal	2AA1	Camshaft sensor exhaust, signal
296A	PreCat O2 sensors switched	2A0E	Exhaust fume return valve, deviation position controlling	2AA2	Camshaft sensor intake, gap loss
296b	AfterCat O2 sensors switched	2A0F	Exhaust fume return valve, adaptation	2AA3	Camshaft sensor exhaust, loss
2973	PreCat O2 sensor wires/lines, Bank 1	2A10	Exhaust fume return valve, signal	2AA4	Camshaft sensor intake, tooth failure
2974	PreCat O2 sensor wires/lines, Bank 2	2A12	DMTL diagnosis module tank leakage, magnetic valve, input signal	2AA5	Camshaft sensor exhaust, tooth failure
2986	PreCat O2 sensor system check, Bank 1	2A13	DMTL diagnosis module tank leakage, leakage diagnosis pump, input signal	2AA8	Variable suction unit adjustment motor: input signal
2987	PreCat O2 sensor system check, Bank 2	2A15	DMTL diagnosis module tank leakage, fine leakage	2AA9	Variable suction unit adjustment motor 2: input signal
2988	PreCat O2 sensor system check, Bank 1	2A16	DMTL diagnosis module tank leakage, finest leakage	2AAA	Variable suction unit, plausibility
2989	PreCat O2 sensor system check, Bank 2	2A17	DMTL diagnosis module tank leakage, system failure	2AAb	Variable suction unit, self diagnosis
2990	NOx-sensor 1: system check	2A18	DMTL diagnosis module tank leakage, heating: input signal	2AAc	Variable suction unit 2, self diagnosis
2991	NOx-sensor 2: system check	2A19	Tank ventilation valve, input signal	2AAd	Fuel pump, emergency off
2992	NOx-sensor 1: system check dynamic	2A1A	Tank ventilation system, function	2AAE	Fuel pump
2993	NOx-sensor 2: system check dynamic	2A1b	Tank lid	2AAF	Fuel pump, plausibility
2994	NOx-sensor 1: heater power	2A1c	Tank filling level, plausibility	2AB2	DME, internal error: RAM
2995	NOx-sensor 2: heater power	2A26	Cat conversion during shift operation	2AB3	DME, internal error: checksum
2996	NOx-sensor 1: system check plausibility	2A27	Cat 2, conversion during shift operation	2AB4	DME, internal error: RAM-checksum
2997	NOx-sensor 2: OBD-II-diagnostics plausibility	2A29	Fuel low pressure sensor, Signal	2AB5	DME, internal error: knock sensor
2998	NOx-sensor 1: system check	2A2b	Fuel mixture control	2AB6	DME, internal error: output chip
2999	NOx-sensor 2: system check	2A2c	Fuel mixture control 2	2Abc	Charging pressure sensor, electrical
299A	Error management EGS	2A2d	Fuel low pressure system, fuel pressure	2Abd	Intake pressure sensor, re-running
299b	Battery sensor: signal	2A2E	Mixture control	2Ac1	Sound flap, control
299c	Battery sensor: Function	2A2F	Mixture control 2	2Ac6	Sport switch signal
299d	Battery sensor: data transmission	2A30	Valvetronic, eccentric shaft sensor: power supply	2Ac7	Sport switch illumination, electric
299E	AfterCat O2 sensor signal, Bank 1	2A31	Valvetronic, eccentric shaft sensor: guidance	2Ac8	DME digital motor electronics main relay, input signal
299F	AfterCat O2 sensor signal, Bank 1	2A32	Valvetronic, eccentric shaft sensor: reference	2Acc	DME digital motor electronics main relay, switch delay
29A0	AfterCat O2 sensor signal, Bank 1	2A33	Valvetronic, eccentric shaft sensor: guidance	2Ad0	Gear control
29A1	AfterCat O2 sensor signal, Bank 1	2A34	Valvetronic, eccentric shaft sensor: reference	2A88	EAC-sensor, control
29A2	PreCat O2 sensor signal, Bank 2	2A35	Valvetronic, eccentric shaft sensor: guidance	2A89	EAC-sensor, coding
29A3	PreCat O2 sensor signal, Bank 2	2A36	Valvetronic, eccentric shaft sensor: reference	2AdA	EAC-sensor, electrical error
29A4	PreCat O2 sensor heater control, Bank 1	2A37	Valvetronic, eccentric shaft sensor: plausibility	2Adb	EAC-sensor, communication
29A5	PreCat O2 sensor heater control, Bank 2	2A38	Valvetronic, actuator: sluggish or open circuit	2Adc	EAC-Sensor, Communication
29A6	PreCat O2 sensor signal, Bank 1	2A39	Valvetronic, adjustable range	2Adf	Idle running control, speed
29A7	PreCat O2 sensor signal, Bank 1	2A3A	Valvetronic, internal error	2AE0	Idle running control during cold start
29A8	Telegram monitoring failure: Network failure power management	2A3b	Valvetronic, servo motor: rotation direction	2AE1	Demand for power output in idle running too high
29A9	Telegram monitoring failure: Battery Power management	2A3c	Valvetronic relay, input signal	2AE4	Engine ventilation-heater relays, control
29Ab	Torque request with CAN	2A3d	Valvetronic, adjustment motor: input signal	2AE5	Idle switch position OPEN
29AE	Tank flap	2A3E	Valvetronic, servo motor: overload	2AE6	Idle switch position CLOSE
29AF	Telegram and signal monitoring KL.15	2A3F	Valvetronic, servo motor: power supply	2AF0	Nitric oxide sensor, heating
29b5	Secondary air system	2A40	Valvetronic, thermic overload protection	2AF2	Nitric oxide sensor, Lambda linear
29b6	Cyl. switch off	2A41	Valvetronic, electronic overload protection	2AF4	NOX sensor, electrical
29cc	Misfire, several Cyls	2A42	Valvetronic, position at restart: plausibility	2AF6	Nitric oxide sensor, Lambda binary
29cd	Misfire, Cyl. 1	2A43	Valvetronic, thermo overload protection: warning threshold		
29cE	Misfire, Cyl. 2	2A44	Valvetronic, output limitation	2b00	Over speed, lean-range
29cF	Misfire, Cyl. 3	2A45	Valvetronic, adjustment motor: plausibility	2c24	PreCat O2 sensors switched
29d0	Misfire, Cyl. 4	2A46	Valvetronic, adaptation	2c27	PreCat O2 sensor system check, Bank 1
29d1	Misfire, Cyl. 5	2A47	Valvetronic, eccentric shaft sensor: plausibility	2c28	PreCat O2 sensor system check, Bank 2
29d2	Misfire, Cyl. 6	2A48	Valvetronic, Temp. Plausibility	2c2b	PreCat O2 sensor system check, Bank 1
29d9	Misfire in case of tank filling level too low	2A49	Valvetronic, mechanical	2c2c	PreCat O2 sensor system check, Bank 2
29dA	Crankshaft sensor, segment adaptation	2A4A	Valvetronic-servo motor	2c2d	PreCat O2 sensor thrust control, Bank 1
29db	Engine roughness, segment time measurement	2A76	Valvetronic, matching voltage	2c2E	PreCat O2 sensor thrust control, Bank 2
29dc	Cyl. injection switch-off	2A77	Ecu, internal error: Valvetronic-output	2c31	PreCat O2 sensor trim control, Bank 1
29E0	Fuel mixture control	2A80	Intake Vanos variable cam control test, input signal	2c32	PreCat O2 sensor trim control, Bank 2
29E1	Fuel mixture control 2	2A81	Intake VANOS, Control 2	2c37	PreCat O2 sensor heater connection, Bank 1
29E2	Fuel injection rail, pressure sensor signal	2A82	Intake Vanos variable cam control test	2c38	PreCat O2 sensor heater connection, Bank 2
29E5	Fuel mixture adaptation, upper speed range	2A85	Exhaust VANOS variable cam control test	2c39	PreCat O2 sensor dynamics, Bank 1

2c3a	PreCat O2 sensor dynamics, Bank 2	2d2b	Pressure sensor of the intake pipe, re-running	2E77	Ignition, voltage supply
2c3b	PreCat O2 sensor disconnected, Bank 1	2d2E	Angle of throttle valve - intake pipe under pressure, correlation	2E7c	Bit serial data interface, signal
2c3c	PreCat O2 sensor disconnected, Bank 2	2d33	Absolute pressure sensor, intake pipe: Signal	2E81	Electrical coolant pump, speed deviation
2c3d	PreCat O2 sensor lines/wires, Bank 1	2d35	Absolute pressure sensor, intake pipe: adaptation	2E82	Electrical coolant pump, shut down
2c3E	PreCat O2 sensor lines/wires, Bank 2	2d50	DME digital motor electronics, internal failure: driving speed control	2E83	Electrical coolant pump, power reduced operation
2c3F	DME, internal error: lambda probe (Bank 1) analyzing chip	2d51	Air path control	2E84	Electrical coolant pump, communication
2c40	DME, internal error: lambda probe (Bank 2) analyzing chip	2d52	DME digital motor electronics, internal failure: control motor speed	2E85	Electrical coolant pump, communication
2c41	DME, internal error: lambda probe Bank 1	2d53	DME digital motor electronics, internal failure: control speed limitation	2E8b	Intelligent battery sensor, signal
2c42	DME, internal error: lambda probe Bank 2	2d54	DME, internal error: control over speed trip unit reset	2E8c	Intelligent battery sensor, function
2c6A	AfterCat O2 sensors switched	2d55	DME digital motor electronics, internal failure: control driver pedal module	2E8d	Intelligent battery sensor, signal transmission
2c6b	AfterCat O2 sensor system check, Bank 1	2d56	DME digital motor electronics, internal failure: control idle running	2E8E	Intelligent battery sensor, communication
2c6c	AfterCat O2 sensor system check, Bank 2	2d57	DME digital motor electronics, internal failure: control external torque requirement	2E96	Generator, under excitation
2c6d	AfterCat O2 sensor aging, Bank 1	2d58	DME digital motor electronics, internal failure: control nominal torque?	2E97	Generator
2c6E	AfterCat O2 sensor aging, Bank 2	2d59	DME digital motor electronics, internal failure: control actual torque??	2E98	Generator, communication
2c6F	AfterCat O2 sensor signal at full load, Bank 1	2d5A	Control motor torque limitation	2E9F	Oil condition sensor
2c70	AfterCat O2 sensor signal at full load, Bank 2	2d5b	DME, internal error: torque control	2EA1	Oil condition sensor, communication
2c73	AfterCat O2 sensor signal, Bank 1	2d5c	DME digital motor electronics, internal failure: control hardware	2EAE	Message of nitrogen oxide sensor 1 missing
2c74	AfterCat O2 sensor signal, Bank 2	2d5F	ECU, internal error: Reset	2EAF	Message of nitrogen oxide sensor 2 missing
2c75	AfterCat O2 sensor signal, Bank 1	2d60	Fuel mass, monitoring	2Ec2	LIN-Bus, communication
2c76	AfterCat O2 sensor signal, Bank 2	2d61	Throttle valve, monitoring	2EcB	Generator, emission worsening
2c77	AfterCat O2 sensor signal, Bank 1	2d64	Control stoichiometric mixture	2Ecc	Generator, communication
2c78	AfterCat O2 sensor signal, Bank 2	2d67	DME digital motor electronics, internal failure: control processors	2Ecd	Generator, electric
2c79	AfterCat O2 sensor signal, Bank 1	2db5	Driving speed control, signal	2EcE	Generator, Plausibility: electrical
2c7A	AfterCat O2 sensor signal, Bank 2	2db6	Cruise control, switch multifunction steering wheel	2EcF	Generator, over temperature
2c7b	AfterCat O2 sensor signal, Bank 1	2db7	Driving speed control, time limit of data transfer achieved	2Ed0	Generator, plausibility: temperature
2c7c	AfterCat O2 sensor signal, Bank 2	2dbE	Active speed control, locked for driving cycle	2Ed1	Generator, mechanical
2c7E	AfterCat O2 sensor trim control, Bank 1	2dc0	Longitudinal dynamics management	2Edc	Generator, controller false
2c7F	AfterCat O2 sensor trim control, Bank 2	2dc3	Control Klemme 15	2Ed3	Generator, type false
2c87	Exhaust gas temp sensor signal	2dc5	Torque requirement over CAN, plausibility	2EE0	Coolant temperature sensor, Signal
2c92	Exhaust gas temperature sensor, electric	2dc6	Fuel tank level, plausibility	2EE1	Coolant temperature sensor, plausibility
2c93	Exhaust gas temperature sensor, plausibility	2dc8	Message of electronic gear control? missing, electronic gear control? 1	2EE2	Coolant temp sensor, plausibility: Signal constant
2c9c	PreCat O2 sensor heater input signal, Bank 1	2dc9	Message of electronic gear control? missing, electronic gear control? 2	2EE3	Coolant temp sensor, plausibility: Gradient
2c9d	PreCat O2 sensor heater input signal, Bank 2	2dcc	Message of ASC/DSC anti slip control/dynamic stability control missing, ASC anti slip control 1	2EE6	Coolant temperature sensor, metering range
2c9E	AfterCat O2 sensor heater input signal, Bank 1	2dcd	Message of ASC/DSC anti slip control/dynamic stability control missing, ASC anti slip control 3	2EEA	Temperature sensor radiator outlet, signal
2c9F	AfterCat O2 sensor heater input signal, Bank 2	2dce	Message of ASC/DSC anti slip control/dynamic stability control missing, ASC 4	2EEb	Temperature sensor radiator outlet, plausibility, gradient
2cA6	PreCat O2 sensor function, Bank 1	2dd0	Message of instrument cluster missing, I-Kombi 2	2EEc	Temperature sensor radiator outlet, plausibility
2cA7	PreCat O2 sensor function, Bank 2	2dd1	Message of instrument cluster missing, I-Kombi 3	2EF4	Map thermostat, mechanics
2cA8	AfterCat O2 sensor function, Bank 1	2dd2	Message of LWS steering angle sensor control unit missing, LWS	2EF5	Map thermostat, input signal
2cA9	AfterCat O2 sensor function, Bank 2	2dd3	Message of SMG-control unit missing, SMG 1	2EFE	Electrical fan, input signal
2cAA	PreCat O2 sensor temperature, Bank 1	2dd4	Telegram (TxU) missing	2EFF	Electrical fan, self diagnosis
2cAb	PreCat O2 sensor temperature, Bank 2	2dd5	Message from EKP missing		
2cEc	Throttle positioner, stuck for an intermediate time	2dE0	Message of electrical fuel pump missing, EKP	2F08	Inlet air temperature sensor, signal
2cEd	Throttle positioner, permanently stuck	2dE1	Fuel level sensor, right: Signal	2F09	Inlet air temperature sensor, plausibility
2cEE	Throttle positioner, sluggish	2dE2	Fuel level sensor, left: Signal	2FOA	Inlet air temperature sensor turbo charger, signal
2cEF	Throttle positioner, input signal	2dE3	Message instrument panel missing, I-Kombi 7	2FOc	Intake air temperature, signal: Gradient
2cF6	Throttle valve potentiometer 1, plausibility with regard to air mass	2dEb	Power management, vehicle wiring system control	2F0d	Radiator blind, input signal, (GLF)
2cF7	Throttle valve potentiometer 2, plausibility with regard to air mass	2dEc	Power management, battery control	2F0F	Radiator blind, bottom
2cF9	Throttle valve potentiometer 1	2dEd	Power management, standby current control	2F10	Radiator blind, bottom
2cFA	Throttle valve potentiometer 2			2F11	Radiator blind, top
2cFb	Throttle valve adaptation value	2E18	Ignition, Cyl. 1	2F12	Air conditioning compressor, input signal
2cFc	Throttle valve, start test	2E19	Ignition, Cyl. 2	2F44	EWS manipulation protection
2cFd	Throttle valve adaptation value missing	2E1A	Ignition, Cyl. 3	2F45	Interface EWS-DME
2cFE	Throttle valve, continuous adaptation	2E1b	Ignition, Cyl. 4	2F46	EWS code-saving
2d06	Air mass system	2E1c	Ignition, Cyl. 5	2F47	EWS irreversible ecu error
2d07	Throttle flap 1	2E1d	Ignition, Cyl. 6	2F49	EWS manipulation protection
2d09	Throttle valve	2E24	Ignition coil, Cyl. 1	2F4A	Interface EWS-DME electronic vehicle immobilization/digital motor electronics
2d0b	Throttle valve heater, Relay	2E25	Ignition coil, Cyl. 2	2F4b	DME digital motor electronics, internal failure: EWS (electronic vehicle immobilization) data
2d0c	Throttle valve, defrosting	2E26	Ignition coil, Cyl. 3	2F4c	Message of EWS-DME digital motor electronics, internal failure: EWS (electronic vehicle immobilization) data
2d0E	Air mass meter, electrical	2E27	Ignition coil, Cyl. 4	2F4E	Vehicle speed, signal
2d0F	Air mass meter, signal	2E28	Ignition coil, Cyl. 5	2F4F	Vehicle speed, plausibility
2d15	Air mass sensor, metering range	2E29	Ignition coil, Cyl. 6	2F58	Start automatics, input signal
2d16	Air mass meter, signal	2E30	Injection valve Cyl. 1, input signal	2F63	Brake light switch, plausibility
2d18	Manipulation protection, max air mass	2E31	Injection valve Cyl. 2, input signal	2F64	Brake light test switch, plausibility
2d1b	Accelerator pedal module, pedal sensor signal 1	2E32	Injection valve Cyl. 3, input signal	2F65	Brake booster, system check
2d1c	Accelerator pedal module, pedal sensor signal 2	2E33	Injection valve Cyl. 4, input signal	2F66	Brake booster, electric ATIC39
2d1d	Accelerator pedal module, pedal sensor 1, voltage supply	2E34	Injection valve Cyl. 5, input signal	2F67	Clutch switch, signal
2d1E	Accelerator pedal module, pedal sensor 2, voltage supply	2E35	Injection valve Cyl. 6, input signal	2F6c	Exhaust flap, input signal
2d1F	Accelerator pedal module, pedal sensor potentiometer, signal	2E68	Knock sensor signal 1	2F71	E-box-fan, input signal
2d20	Accelerator pedal module, pedal sensor, plausibility between signal 1 and signal 2	2E69	Knock sensor signal 2	2F76	Ambient pressure sensor, signal
2d28	Differential pressure sensor, suction pipe: Signal	2E6A	Knock sensor signal 3	2F77	Ambient pressure sensor, plausibility
2d29	Differential pressure sensor, suction pipe: plausibility	2E74	Mixture adaptation, injector ageing: Bank 1	2F79	Ambient pressure sensor, re-running
2d2A	Differential pressure sensor, suction pipe: adaptation	2E75	Mixture adaptation, injector ageing: Bank 2	2F7A	Ambient pressure sensor, re-running

2F7b	Oil pressure switch, plausibility	30EA	NOX Cat, sulfured	271c	Oxygen sensor after cat.
2F80	Motor shutoff time, plausibility	30Ed	Extreme knock Cyl. 1	271d	Oxygen sensor heater before cat.
2F85	DME digital motor electronics, internal failure: inside temperature sensor, signal	30EE	Extreme knock Cyl. 2	271E	Oxygen sensor heater after cat.
2F8F	Accelerator pedal module and brake pedal, plausibility	30EF	Extreme knock Cyl. 3	271F	Lambda sensor period duration ageing
2F94	Fuel pump relay, input signal	30F0	Extreme knock Cyl. 4	2720	Lambda sensor ageing TV
2F99	Ambient temperature sensor, plausibility	30F1	Extreme knock Cyl. 5	2721	Lambda sensor ageing after cat
2F9A	Ambient temperature sensor, communication	30F2	Extreme knock Cyl. 6	2722	Oxygen sensor2 before cat.
2F9E	Thermal oil level sensor	30Fc	Turbo charger, density	2723	Output heater O2-sensor before catalyst bank2
2FA3	Coding missing	30FE	Turbo charger, high pressure side	2724	Oxygen sensor2 after cat.
2FA4	Wrong data set	30FF	Turbo charger, low pressure side	2725	Lambda sensor period duration ageing bank2
2FAb	Active engine bearing	3100	Air charge control, shut-down	2726	Lambda sensor ageing TV bank2
2FAc	Active engine bearing 2, electrical	3104	Engine roughness, layer charging operation	2727	Lambda sensor ageing after cat bank2
2Fbc	Fuel pressure control valve, signal	3105	Engine roughness, layer charging operation: warming	2728	Adaptation multipl. area2
2Fbd	Fuel pressure steuer ventil, plausibility	3c1d	Crank shaft sensor: signal	2729	Adaptation multipl. area2 (bank2)
2FbE	Fuel pressure after motor stop	3c1E	Camshaft sensor: input-signal	272A	Adaptation multipl. area1
2FbF	Fuel pressure at injection release	3c1F	Camshaft sensor: output-signal	272b	Adaptation multipl. area1 (bank1)
2Fc0	Fuel pressure, measurement range	3d33	Torque request with CAN	272c	Adaptation add. per time
2Fc3	Fuel pressure steuer ventil, plausibility			272d	Adaptation add. per time (Bank2)
2Fc6	Energy save mode active	cd87	PT-CAN communication failure	272E	Adaptation add. per ignition
2Fc7	Power saving mode 2, active	cd8b	Local-CAN communication failure	272F	Adaptation add. per ignition bank2
2F8F	Crank case ventilation, system check	cd8F	PT-CAN communication error	2730	Failure within the idle-speed control
2Fdb	Crank case ventilation, electric ATIC39	cd94	Message (outside temperature/relative time, 310)	2731	Camshaft control inlet - VANOS
		cd95	Message (handling FGR / ACC, 194)	2732	NW-Control of inlet B2 (8cyl)/outlet (4cyl)
3070	Cyl. same adjustment via irregular running Cyl. 1	cd96	Message (torque requirement ACC active cruise control, B7)	2733	NW-KW synchron failure
3071	Cyl. same adjustment via irregular running Cyl. 2	cd97	Message (speed demand AFS, B1)	2734	PS/MAF plausibility
3072	Cyl. same adjustment via irregular running Cyl. 3	cd98	Message (torque requirement DSC dynamic stability control, B6)	2735	TPS/MAF plausibility bank2
3073	Cyl. same adjustment via irregular running Cyl. 4	cd99	Message (torque requirement EGS electronic gear control? B5)	2736	Throttle controller PWM short test
3074	Cyl. same adjustment via irregular running Cyl. 5	cd9A	Message (torque requirement SMG, BD)	2737	EWS-manipulation control
3075	Cyl. same adjustment via irregular running Cyl. 6	cd9b	Message (vehicle mode, 315)	2738	Catalytic-converter conversion
307c	Cyl. same adjustment via Lambda Cyl. 1	cd9c	Message (speed, 1A0)	2739	Catalytic-converter conversion LSU
307d	Cyl. same adjustment via Lambda Cyl. 2	cd9d	Message (gear data, BA)	273A	Catalytic-converter conversion LSU bank2
307E	Cyl. same adjustment via Lambda Cyl. 3	cd9E	Message (gear data 2, 1A2)	273b	Throttle controller PWM long test
307F	Cyl. same adjustment via Lambda Cyl. 4	cd9F	Message (kilometer reading/coverage, 330)	273c	Throttle controller diff.
3080	Cyl. same adjustment via Lambda Cyl. 5	cdA0	Message (terminal state, 130)	273d	Catalytic-converter conversion (bank2)
3081	Cyl. same adjustment via Lambda Cyl. 6	cdA1	Message (steering wheel angle, C4)	273E	Signal temperature sensor exhaust1
30A0	Ignition coil Cyl. 1, input signal	cdA2	Message (power management battery voltage, 3B4)	273F	Signal temperature sensor exhaust2
30A1	Ignition coil Cyl. 2, input signal	cdA3	Message power management load voltage, 334)	2740	Pedal-travel1 permanently
30A2	Ignition coil Cyl. 3, input signal	cdA4	Message (status ARS active roll stabilizing module, 1AC) acceleration?	2741	Pedal-travel2 permanently
30A3	Ignition coil Cyl. 4, input signal	cdA5	Message (status DSC dynamic stability control, 19E)	2742	Misfire detection cyl.1
30A4	Ignition coil Cyl. 5, input signal	cdA6	Message (status electrical fuel pump, 335)	2743	Misfire detection cyl.3
30A5	Ignition coil Cyl. 6, input signal	cdA7	Message (status reverse gear, 3B0)	2744	Misfire detection cyl.4
30Ac	Injection valve Cyl. 1, input signal	cdA8	Message (status KOMBI, 1B4)	2745	Misfire detection cyl.2
30Ad	Injection valve Cyl. 2, input signal	cdA9	Message (heat stream/load AC, 1B5)	2746	Misfire detection cyl.
30AE	Injection valve Cyl. 3, input signal	cdAA	Message (status crash shut off EKP electric fuel pump, 135)	2747	Misfire detection cyl.
30AF	Injection valve Cyl. 4, input signal	cdAb	Message (lamp condition, 21A)	2748	Misfire detection cyl
30b0	Injection valve Cyl. 5, input signal	cdAC	Message (status water valve, 3B5)	2749	Misfire detection cyl
30b1	Injection valve Cyl. 6, input signal	cdAd	Message (requirement road wheel torque drive line, BF)	274A	Misfire detection cyl
30bA	Injector bank 1 or ECU, internal error	cdAE	Message (time/date, 2F8)	274b	Misfire detection cyl
30bb	Injector bank 2 or ECU, internal error	cdAF	Message (status trailer, 2E4)	274c	Misfire detection cyl
30bE	Injector, calibration: plausibility30C1 motor oil pressure control, statically	cdb0	Message (display gear data)	274d	Misfire detection cyl
30c0	Motor oil pressure control, dynamically	cdb1	Message (status central locking system, 2FC)	274E	Misfire detection, Checksum failure
30c1	Motor oil pressure control, statically	cdb3	Message (speed demand steering, B9)	274F	Misfire, Checksum failure, service rel.
30c2	Oil pressure regulating valve, control	cdB4	Message (transmission data 3, 3B1) missing	2752	Pedal-travel half plausibility
30c3	Motor oil pressure sensor, signal	cdB5	PT-CAN communication failure	2753	Monitoring ignition coil 1
30c4	Motor oil pressure control, mechanically	cdB8	Message speed demand DKG, B8)	2754	Monitoring ignition coil 3
30c5	Engine oil pump, mechanical: engine oil pressure	cdB9	Message (status EMF, 201)	2755	Monitoring ignition coil 4
30c6	Motor oil pressure sensor, plausibility	cdBA	Message (Stellanforderung EMF, 1A7)	2756	Monitoring ignition coil 2
30c7	Motor oil pressure system	cdBE	Message, (torque demand from DSC)	2757	Monitoring ignition coil
30c8	Motor oil pressure, final stage (preliminary)			2758	Monitoring ignition coil
30c9	Engine oil pump, control	Table 21		2759	Monitoring ignition coil
30cF	Waste gate, input signal			275A	Monitoring ignition coil
30d0	Waste gate 2, input signal	2711	DMTL pump final stage	275b	Monitoring ignition coil
30d6	Nitric oxide sensor, plausibility	2712	DMTL magnetic valve control	275c	Monitoring ignition coil
30d8	NOX sensor, Sensor damaged	2713	Oxygen sensors switched	275d	Monitoring ignition coil
30dA	NOX sensor, Signal	2714	Oxygen sensor heater after cat. (bank2)	275E	Monitoring ignition coil
30dc	Nitric oxide sensor, heating	2715	Oxygen sensor heater before cat. (bank2)	275F	Pedal-travel defect
30dE	NOX sensor - PreCat O2 sensor, Correlation	2716	Controller heater sensor after cat	2760	Secondary air system
30E0	NOX sensor, Offset	2717	Controller heater sensor after cat (Bank2)	2761	Secondary air system bank2
30E2	NOX sensor, thrust test	2718	Speed (rpm) sensor for missing tooth	2762	Secondary air valve
30E4	NOX sensor, aging	2719	Speed (rpm) sensor for period timing	2763	Secondary air valve bank2
30E6	NOX, dynamics	271A	Oxygen sensor before cat.	2764	Controller secondary air pump relay
30E9	NOX Cat, aging	271b	Oxygen sensor before cat.	2765	Controller secondary air valve

2766	Phase generator 1 time duration	27b0	Ansteuerung Einspritzventil	2810	Engine speed monitoring
2767	Phase generator 2 time duration	27b1	Ansteuerung Einspritzventil	2811	Local CAN Bus Off
2768	Phase generator positioning failure	27b3	Diagnose DK/HFM adjustment	2812	Oil temperature
2769	Spring test DK-controller open spring	27b4	Ambient-pressure sensor	2813	Control unit monitoring group A
276A	Control-unit recognition	27b5	Control inlet-VANOS	2814	Control unit monitoring group B
276b	Secondary air valve output stage bank 2	27b6	Control inlet-VANOS bank2	2815	Control unit monitoring group C
276c	Phase generator 2 positioning failure	27b7	Control gas pump relay	2816	Engine rpm monitor
276d	Tank-ventilation functional check	27b8	Plausibility diff. pressure sensor	2818	Voltage-monitoring O2-sensor on air
276E	Tank-ventilation functional check bank 2	27b9	BLS/BTS Plausibility	281c	BSD wire failure
276F	Failure within secondary air system	27bA	Output AC-compressor enable from AC-SG	281E	Controller DISA
2770	Failure within secondary air system	27bb	Camshaft control outlet-VANOS	281F	DISA-mount response
2771	Secondary air system locked	27bc	Camshaft control outlet-VANOS bank2	2820	Failure DISA
2772	Control gas ventilation valve	27bd	Control outlet-VANOS	2821	DISA temperature warning level engine protection module
2773	Tank-ventilation valve output stage bank 2	27be	Output outlet-VANOS bank2	2822	Forced switched EGS
2774	Monitoring cycle failure storing	27bF	Camshaft sensor inlet bank2	2823	Heating lambda sensor before Cat
2775	engine moment monitoring level 2	27c0	Camshaft sensor outlet bank2	2824	Heating lambda sensor before Cat bank2
2776	Interface multifunction steering wheel	27c1	Master camshaft sensor	2825	Lambda sensor aging after Cat
2777	Monitoring controller function	27c2	Controller: AC-compressor relay	2826	Lambda sensor aging after Cat bank2
2778	Switch clutch	27c3	Signal oil level sensor (TOENS)	2827	Heater link at signal-path
2779	SG self test RAM	27c6	LDP Diagnose 0.5mm leak	2828	CAN ARS-Signal failure
277A	Switch break	27c7	LDP Diagnose 1.0mm leak	2829	CAN CAS-Signal failure
277b	SG self test ROM	27c8	LDP system	282A	CAN IHKA- Signal failure
277c	SG self test reset	27c9	Leak diagnosis module	282b	CAN PWML- Signal failure
277d	Battery Voltage	27cA	Ansteuerung DM-TL Pumpen motor	282c	CAN SZL- Signal failure
277E	Moment restrictor level 1	27cb	DM-TL 0.5mm leak MIL off	282d	Heater link at signal-path bank2
277F	Crankshaft sensor	27cc	DM-TL 1mm & 0.5mm leak	282E	PWG-movement
2780	Ref. marking generator	27cd	DM-TL module	2830	Aging of O2-sensor behind catalyst (Bank2)
2781	Camshaft sensor inlet	27cE	Load sensor monitoring	2832	Plausibility ASR-Torque
2782	Camshaft sensor outlet	27cF	Ignition time Cyl.1	2833	Plausibility CAS
2783	Hot film air mass meter	27d0	Ignition time Cyl.3	2834	Plausibility IHKA
2784	Thermostat diagnosis THM	27d1	Ignition time Cyl.4	2835	Plausibility PWML
2785	DK-Potentiometer	27d2	Ignition time Cyl.2	2836	Plausibility SZL
2786	Throttle-valve potentiometer 1	27d5	Failure within the idle-speed control	2837	Plausibility EMF
2787	Throttle-valve potentiometer 2	27d6	Output idle-speed controller OFF	2838	Output-stage AAV
2788	Vehicle speed	27d7	Output idle-speed controller ON	2839	AAV-Functionality
2789	Bad way detection	27d8	Failure depressurize pump	283A	Failure oil quality sensor
278A	Ambient temperature	27d9	Output DM-TL heater	283b	Camshaft control output bank2
278b	Engine temperature	27dA	Generator failure	283c	Camshaft control output
278c	Intake air temperature	27dc	EWS3.3 Random-code storing	283d	PT - CAN bus off
278d	Temperature sensor: coolant temperature	27E1	Monitoring pedal-travel sensor	283E	WT enable control
278E	Diff. pressure sensor suction tube	27E2	Knock sensor 1	283F	Plausibilitaet Oeldruckschalter
278F	Low Range signal not plausible	27E3	Knock sensor2 bank1	2841	Air flushed injector valves control
2790	Transmission temperature	27E4	Knock sensor 3	2843	Plausibility diagnostics LSU by LSH after catalyst
2791	Parts exchange without adaptation	27E5	Knock sensor 4	2844	Internal diagnostics Cj125 SPI communication
2792	Drosselklappe - Positionsüberwachung	27E6	Knock sensor zero test	2849	Power break at pump-current
2793	DK-Actuator regulator area	27E7	Knock sensor offset	284A	Short circuit to minus or to plus at sensor-line
2794	DK-Actuator controlled	27E8	Knock regulation Test impulse	284c	LSU dynamic too slow
2795	Spring test DK-controller closing spring	27E9	Knock sensor zero test bank 2	284F	Failure at speed-display kombi
2796	Throttle flap lower stop	27EA	CAN-Timeout HDEV	2850	WT-guiding sensor
2797	DK-Controller failure booster	27Eb	CAN-Timeout TCU	2851	WT-guiding sensor (bank 2)
2798	Throttle flap emergency air point	27Ec	CAN-Timeout EGS	2852	WT-ref. sensor
2799	Abort DV-adaptation because of environment	27Ed	CAN-Timeout ASC/DSC	2853	WT-ref. sensor (bank 2)
279A	Throttle flap adaptation - abort after re-teaching	27EE	CAN-Timeout Instrumental combination	2854	WT-Sensor plausibility
279b	Thermostat jammed	27EF	CAN ACC-Signal failure	2855	WT-Sensor plausibility (bank 2)
279c	Control heater cooler	27F0	Plausibility MSR-control	2856	WT-Supply voltage for the sensor
279d	Control engine fan	27F1	Plausibility ACC-control	2857	WT-Supply voltage for the sensor (bank 2)
279E	Output exhaust flap	27F2	Plausibility gas level	2858	WT-Teaching function at stop
279F	Output fan A	27F3	CAN-Timeout WT-Control unit	2859	WT-Teaching function at stop (bank 2)
27A0	Controller: E-box fan	27F4	CAN-Timeout WT-Control-unit bank2	285A	WT-Actuator monitoring
27A1	Failure within secondary air system 2	27F5	CAN-Timeout DME-Control unit	285b	WT-Actuator monitoring (Bank 2)
27A2	Temperature sensor engine LR	27F6	Pedal-travel	285c	WT-CAN-communication
27A3	CAN timeout HDEV2 SG	27F7	Pedal-travel Pot1	285d	WT-CAN-communication (bank 2)
27A4	EWS3.3 Schnittstelle EWS-DME	27F8	Pedal-travel Pot2	285E	WT-Control unit internal failure
27A6	Ansteuerung Einspritzventil 1	27F9	Start automatic control	285F	WT-Control unit internal failure (bank 2)
27A7	Ansteuerung Einspritzventil 3	27FA	Input starter automatic	2860	WT-Controller
27A8	Ansteuerung Einspritzventil 4	27Fb	Output controlled airflow	2861	WT-Controller (bank2)
27A9	Ansteuerung Einspritzventil 2	27Fd	Starter automatic	2862	WT-Power supply
27AA	Ansteuerung Einspritzventil	27FE	Knock control offset bank2	2863	WT-Power supply (bank2)
27Ab	Ansteuerung Einspritzventil	27FF	Knock control test signal bank2	2864	DM-TL-Pump control failure
27Ac	Ansteuerung Einspritzventil	280A	Assign. camshaft to crankshaft	2865	Power supply limit WT-emergency
27Ad	Ansteuerung Einspritzventil	280d	Control unit monitoring	2866	WT-stops leaning necessary
27AE	Ansteuerung Einspritzventil	280E	Control unit monitoring	2867	WT system overload
27AF	Ansteuerung Einspritzventil	280F	Camshaft control	2868	WT system overload (bank2)

286F	AGR Valve output	29EA	LR-Adaptation add. per ignition bank 2	2b72	DISA temperature warning level engine protection model
2870	AGR Valve monitoring	29Eb	LR-Deviation	2b7F	Diagnose DK/HFM adjustment
2871	AGR Valve positioning sensor	29Ec	LR-Deviation bank 2	2b80	Idle running controlling
2872	Diagnose AGR valve	29Ed	LR-Adaptation multiplicative area1 (Bank 1)	2b8A	Knock sensor zero test
2873	Output-stage HDEV-SG1 bank1	29EE	LR-Adaptation multiplicative area1 (Bank 2)	2b8b	Knock sensor offset
2874	Output-stage HDEV-SG1 bank2	29F4	Catalytic-converter conversion	2b8c	Knock regulation Test impulse
2875	Output-stage HDEV-SG1 bank3	29F5	Catalytic-converter conversion (bank 2)	2b8d	Knock sensor zero test bank2
2876	Output-stage HDEV-SG2 bank1	29F8	Cat-conversion LSU	2b8E	Knock control offset bank2
2877	Output-stage HDEV-SG2 bank2	29F9	Catalytic-converter conversion LSU bank 2	2b8F	Knock control test signal bank2
2878	Output-stage HDEV-SG2 bank3	29FE	Secondary air injection system	2b98	Plausibility monitoring of the RAM backup
2879	Signal exhaust temperature sensor 4	29FF	Secondary air system (Bank 2)	2b99	RAM Backup
287A	Output pressure control valve			2b9A	ECU self-test RAM
287b	Signal exhaust temperature sensor 3	2A01	Secondary air injection control valve	2b9b	ECU self-test ROM
287c	Pressure sensor suction tube	2A02	Control air system valve	2b9c	ECU self-test Reset
287d	Signal rail-pressure sensor	2A03	Secondary air pump relay	2b9d	Over voltage detection on VCC
287E	Pressure control valve	2A05	Secondary air valve bank 2	2b9E	Energy saving mode active
287F	High pressure sensor test	2A0E	AGR valve	2bA7	Torque restrictor level 1
2880	AGR system	2A12	Magnetic valve DMTL control	2bb6	Control main relay
2881	CDKBKE Output twist generator controller	2A13	Control DMTL pump motor		
2882	Output pressure control valve	2A14	DM-TL Fine leak	2c24	Interchanged O2-sensors
2883	Rail-pressure regulation	2A15	Tank-ventilation-system major leak	2c37	Heater link at signal-path
2889	Plausibility monitoring of the RAM backup	2A16	DM-TL 0.5mm leak MIL off	2c38	Heater link at signal-path bank2
2893	DME- Temperature	2A17	DM-TL module	2c39	LSU dynamic too slow
2898	Lambda sensor after cat bank1: signal	2A18	Control DMTL heater	2c3A	LSU dynamic too slow bank2
28A0	Output gas circuit switch	2A19	Tank ventilation valve	2c3b	Voltage-monitoring O2-sensor on air
28c8	Lambda control mismatch	2A1A	Tank-ventilation functional check	2c3c	Voltage-monitoring O2-sensor on air bank2
28c9	Lambda control mismatch bank2	2A1d	Tank leakage monitoring	2c45	Lambda sensor in front of cat
28d2	Pressure sensor charge-air	2A1E	Leakage diagnostic pump	2c46	Lambda sensor of front cat bank2
28d3	Plausibility ambient- to charge pressure	2A58	VVT-Enable control	2c47	Short circuit to minus or to plus at sensor-line
28d4	Pressure control valve	2A59	VVT-leading sensor	2c48	Short circuit to minus or to plus at sensor-line bank2
28d5	Output charge pressure control valve	2A5A	VVT-leading sensor bank 2	2c49	Plausibility diagnostics LSU by LSH after catalyst
28d6	HO-Proc. failure, coding missing	2A5b	VVT-ref. sensor	2c4A	Plausibility diagnostics LSU by LSH after catalyst bank2
28d7	Generator communication	2A5c	VVT-ref. sensor (bank 2)	2c4b	Internal diagnostics CJ125 SPI communication
28d8	RAM backup-failure	2A5d	VVT-Sensor plausibility	2c4c	Internal diagnostics CJ125 SPI communication bank2
28d9	Electric heater	2A5E	VVT-Sensor plausibility (bank 2)	2c4d	Power break at pump-current
28dA	CAN timeout elec. heater	2A5F	VVT-Supply voltage for the sensor	2c4E	Power break at pump-current bank2
28db	Minimum Lift adaptation repeat. ran over	2A60	VVT-Supply voltage for the sensor (bank 2)	2c4F	LSU adjustment line
28dc	Generator 2 communication	2A61	VVT-Teaching function at stop	2c50	LSU adjustment line bank2
2906	AGR valve monitoring	2A62	VVT-Teaching function at stop (bank 2)	2c51	LSU Nernst cell break
2907	AGR valve monitoring	2A63	VVT-Actuator monitoring	2c52	LSU Nernst cell break bank2
2908	CAN timeout DSG SG	2A64	VVT-Actuator monitoring (Bank 2)	2c53	LSU virtual mass break
2909	CAN timeout EGS	2A65	VVT-Control unit internal failure	2c54	LSU virtual mass break bank2
290A	Active front steering torque	2A66	VVT-Control unit internal failure (bank 2)	2c55	Lambda sensor periode duration ageing
292b	LSU adjustment line	2A67	VVT-activation	2c56	Lambda sensor ageing TV
292c	LSU adjustment line bank2	2A68	VVT-Output-stage (bank	2c6A	Inverted lambda sensors of front cat
292d	LSU Nernst cell break	2A69	VVT-Power supply	2c6d	Lambda sensor aging of rear cat bank1
292E	LSU Nernst cell break bank2	2A6A	VVT-Power supply (bank 2)	2c6E	Lambda sensor aging of rear cat bank2
2930	LSU virtual mass break	2A6b	Power supply limit VVT-emergency	2c6F	Lambda sensor aging of rear cat (VL- test)
2931	LSU virtual mass break bank2	2A6c	VVT-stops leaning necessary	2c70	Aging of O2-sensor behind catalyst (Bank 2)
2936	Fuel pressure sensor	2A6d	VVT-system overload	2c71	Lambda sensor in rear of cat
2937	Function monitoring: Lambda Plausibility	2A6E	VVT-system overload bank2	2c72	Lambda sensor of rear cat bank2
296b	Inverted lambda sensors of front cat	2A6F	Multiple minimum lift adaptation stop	2c9c	Output heater O2-sensor before catalyst
2972	Control pump for breaks	2A70	Error current plausibility	2c9d	Output heater O2-sensor before catalyst bank2
297d	CAN SSG signal failure	2A71	Output stage diagnostics of discharge relay VVT	2c9E	Control heater sensor after cat
2981	Control controlled airflow	2A72	Actuator control VVT throw adjustment	2c9F	Control heater sensor after rear cat (bank2)
299b	IBS communication	2A80	Injector-VANOS	2cA0	Lambda sensor heating in front of cat
299c	IBS general error	2A81	Control inlet-VANOS bank2	2cA1	Oxygen sensor heater before cat. (bank2)
299d	IBS plausibility	2A83	Camshaft control- Input	2cA2	Heating lambda sensor of front cat (shearing stress)
29A8	Power management network failure	2A85	Outlet-VANOS	2cA3	Heating lambda sensor of front cat (shearing stress) Bank2
29A9	Power management	2A86	Control outlet-VANOS bank2	2cA8	Oxygen sensor heater after cat.
29AE	Tank-ventilation-system major leak	2A88	Camshaft control outlet	2cA9	Oxygen sensor heater after cat. (bank2)
29cc	Misfire detection summation error	2A89	Camshaft control outlet-VANOS bank2	2cEF	DK-actuator
29cd	Misfire detection cylinder 1 in 1. ignition sequence			2cF0	DK-Actuator regulator area
29cE	Misfire detection cylinder 2 in 4. ignition sequence	2b5c	Crankshaft sensor	2cF1	DK position monitoring
29cF	Misfire detection cylinder 3 in 2. ignition sequence	2b5d	Reference marking generator	2cF8	DK-potentiometer sensor
29d0	Misfire detection cylinder 4 in 3. ignition sequence	2b61	Assign. camshaft to crankshaft	2cF9	Throttle-valve potentiometer 1
29d9	Misfire at too low fuel filling level	2b62	Camshaft sensor inlet	2cFA	Throttle-valve potentiometer 2
29dd	Bad way detection	2b63	Camshaft sensor outlet	2cFF	DK-Controller failure booster
29E5	LR-Adaptation multiplicative area2 (Bank 1)	2b64	Camshaft sensor inlet bank2		
29E6	LR-Adaptation multiplicative area2 (Bank 2)	2b65	Camshaft sensor outlet bank2	2d00	Spring-check throttle-valve-actuator closing spring
29E7	LR-Adaptation add. per time (Bank 1)	2b66	Master camshaft sensor	2d01	Spring-check throttle-valve-actuator opening spring
29E8	LR-Adaptation add. per time (bank 2)	2b70	DISA	2d02	Error emergency air set point
29E9	LR-Adaptation add. per ignition	2b71	Failure DISA	2d03	Abort DV-adaptation because of environment

2d04	Throttle valve adaptation	2EF6	Characteristic diagram thermostat	2731	Camshaft control inlet
2d05	Abort at UMA-repeat learning	2EFE	Engine blower	2732	NW-intake control bank2
2d08	Parts exchange without adaptation			2737	EWS3.3 manipulation protection
2d0F	Hot film air mass meter	2F08	Intake air temperature	2738	Catalytic-converter conversion
2d10	Plausibility HFM	2F0d	Control controlled airflow	2739	Cat-conversion LSU
2d11	Plausibility, mass flow Lambda sensor	2F12	Air conditioner compressor control	273A	Catalytic-converter conversion LSU bank2
2d12	Plausibility, mass flow Lambda sensor BAnk2	2F17	Forced switched EGS	273d	Catalytic-converter conversion (bank2)
2d19	PWG-movement	2F1c	Oil temperature sensor	273E	Exhaust temperature sensor in front of catalyst
2d1A	Accelerator potentiometer	2F21	Engine controller, power reduction	273F	Exhaust temperature sensor in front of catalyst (Bank2)
2d1b	Pedal-travel Pot1	2F44	EWS3.3 manipulation protection	2742	Misfire detection cyl. 1
2d1c	Pedal-travel Pot12	2F45	EWS3.3 Interface DME-EWS	2743	Misfire detection cyl. 5
2d28	Diff. pressure sensor suction tube	2F46	WS3.3 Random-code storing	2744	Misfire detection cyl. 4
2d29	Plausibility diff. pressure sensor	2F4E	Vehicle speed	2745	Misfire detection cyl. 8
2d32	Plausibility pressure sensor intake tube	2F50	Failure at speed-display kombi	2746	Misfire detection cyl. 6
2d6E	Moment monitoring level 2	2F58	Control starter automatic	2747	Misfire detection cyl. 3
2d6F	Load sensor monitoring	2F59	Input starter automatic	2748	Misfire detection cyl. 7
2d70	Control unit monitoring group A	2F5A	Start automatic control	2749	Misfire detection cyl. 2
2d71	Control unit monitoring group B	2F62	Switch brakes	274E	Misfire detection, Checksum failure
2d72	Control unit monitoring group C	2F67	Switch clutch	2753	Monitoring igniter 1
2d73	Fuel pressure sensor	2F6c	Control exhaust flap	2754	Monitoring igniter 5
2d74	Function monitoring: Lambda Plausibility	2F71	E-Box blower	2755	Monitoring igniter 4
2d75	Engine speed monitoring	2F76	Ambient-pressure sensor	2756	Monitoring igniter 8
2d76	Pedal encoder monitoring (level2)	2F7b	Oil pressure switch	2757	Monitoring igniter 6
2d78	Control air mass flow adjustment	2F80	Error CAN / relative timer	2758	Monitoring igniter 3
2db4	Interface MFL	2F85	DME- Temperature	2759	Monitoring igniter 7
2dbF	CAN ACC signal failure	2F8A	Battery Voltage	275A	Monitoring igniter 2
2dc8	CAN- Timeout EGS	2F94	Fuel pump relay	2760	Secondary air injection system
2dcA	CAN timeout EGS	2F99	Ambient temperature	2761	Secondary air system bank2
2dcb	CAN SSG signal failure	2F9E	Terminal oil level sensor	2762	Secondary air injection control valve
2dcF	CAN- Timeout instrument combination	2FA3	HO-process failure, coding missing	2763	Secondary air valve bank2
2dd6	CAN- Timeout ASC/DSC	2Fb2	Suction jet pump for brake force amplifier	2764	Control stage relays secondary air pump
2dd7	CAN timeout DSG SG	2Fb7	Electrical: under pressure pump for brake booster	2765	Control air system valve
2dd8	Active front steering torque			2769	Spring-check throttle-valve-actuator opening spring
2dd9	CAN ARS signal failure	cd87	PT - CAN bus off	276b	Control secondary air valve bank2
2dda	CAN CAS signal failure	cd8b	Local CAN Bus Off	276d	Tank-ventilation functional check
2ddb	CAN IHKA signal failure	cd9b	Status vehicle-mode	276E	Tank-ventilation functional check bank2
2ddc	CAN SZL signal failure	cdA1	Angle of steering wheel	2772	Control tank-ventilation valve
2ddd	CAN-Timeout VWT-Control unit	cdA2	Power management battery voltage	2773	Control tank-ventilation valve bank2
2dde	VWT-CAN-communication	cdA3	Power management charge voltage	2774	Engine Off Time
2ddf	VWT-CAN-communication (bank2)	cdA7	Status gear reverse	2775	Engine moment monitoring level 2
2dE6	CAN-Timeout DME-Control unit	cdAA	Control crash-switch-off EKP	2776	Interface MFL
2dEb	Power management network failure	cdAc	Status water valve	2777	Monitoring controller function
2dEc	Power management			2778	Switch clutch
2dEd	Power management: quiescent current violation	Table 22		2779	ECU self-test RAM
2E24	Spark coil cylinder 1 in 1. ignition sequence			277A	Switch brakes
2E25	Spark coil cylinder 2 in 4. ignition sequence	2712	Magnetic valve DMTL control	277b	ECU self-test ROM
2E26	Spark coil cylinder 3 in 2. ignition sequence	2713	Interchanged O2-sensors	277c	ECU self-test Reset
2E27	Spark coil cylinder 4 in 3. Ignition sequence	2714	Oxygen sensor heater after cat. (bank 2)	277d	Battery Voltage
2E30	Injection valve cylinder 1 in 1. Cylinder sequence	2715	Oxygen sensor heater before cat. (bank 2)	277E	Torque restrictor level 1
2E31	Injection valve cylinder 2 in 4. Cylinder sequence	2716	Control heater sensor after cat	277F	Crankshaft sensor
2E32	Injection valve cylinder 3 in 2. Cylinder sequence	2717	Control heater sensor after cat (bank 2)	2780	Ref. marking generator
2E33	Injection valve cylinder 4 in 3. Cylinder sequence	271A	Lambda sensor before catalyst bank 1	2781	Camshaft sensor inlet
2E68	Knock sensor 1	271b	Output heater O2-sensor before catalyst	2782	Camshaft sensor outlet
2E69	Knock sensor2 (Bank1)	271c	Oxygen sensor after cat.	2783	Hot film air mass meter
2E6A	Knock sensor 3	271d	Oxygen sensor heater before cat.	2785	DK-potentiometer sensor
2E6b	Knock sensor 4	271E	Oxygen sensor heater after cat.	2786	Throttle-valve potentiometer 1
2E7c	BSD wire failure	271F	Lambda sensor period duration ageing	2787	Throttle-valve potentiometer 2
2E86	Electrical water pump	2720	Lambda sensor ageing TV	2788	Vehicle speed
2E8b	IBS communication	2721	Lambda sensor ageing after cat	2789	Bad way detection
2E8c	IBS general error	2722	Oxygen sensor2 before cat.	278A	Ambient temperature
2E8d	IBS plausibility	2723	Output heater O2-sensor before catalyst bank 2	278b	Engine temperature
2E95	Generator communication	2724	Oxygen sensor2 after cat.	278c	Intake air temperature
2E97	CDKGEN/CDKGEN - BSD generator	2725	Lambda sensor period duration ageing bank 2	278d	Temp. sensor coolant temperature
2E9F	Failure oil quality sensor	2726	Lambda sensor ageing TV bank2	278E	Diff. pressure sensor suction tube
2EA0	Oil status sensor	2727	Lambda sensor ageing after cat bank2	278F	Low Range signal not plausible
2Eb8	BSD-message from IBS not existent	2728	LR-Adaptation multiplicative area2	2790	Transmission temp.
2Ebc	BSD message from oil sensor missing	2729	LR-Adaptation multiplicative area2 (bank2)	2791	Arts exchange without adaptation
2EbD	BSD message from generator missing	272A	LR-Adaptation multiplicative area1	2792	DK position monitoring
2EbE	BSD message from generator missing	272b	LR-Adaptation multiplicative area1 (bank1)	2793	DK-Actuator regulator area
2EE0	Temperature sensor engine cooling liquid	272c	LR-Adaptation additive per time	2794	DK-Actuator controlled
2EEA	Temp. sensor coolant temperature	272d	LR-Adaptation additive per time (bank2)	2795	Spring-check throttle-valve-actuator closing spring
2EF4	Thermostat characteristic diagram cooling, mechanical	272E	LR-Adaptation additive per ignition	2796	Check at lower stop
2EF5	Thermostat characteristic diagram cooling, activation	272F	LR-Adaptation additive per ignition bank2	2797	DK-Controller failure booster

2798	Error emergency air set point	280A	Assign. camshaft to crankshaft	28d3	Charge pressure sensor
2799	Abort DV-adaptation because of environment	2812	Oil temperature	28d4	Charge pressure actuator
279A	Abort at UMA-repeat learning	2813	Control unit monitoring group A	28d5	Control charge pressure control valve
279b	Thermostat jamming	2814	Control unit monitoring group B	28d6	HO-process failure, coding missing
279c	Control thermostat map cooling	2815	Control unit monitoring group C	28d7	Generator communication
279d	Control engine fan	2816	Engine speed monitoring	28d8	Network-system switched off, error-memory deleted
279E	Control exhaust flap	2818	Voltage-monitoring O2-sensor on air	28db	Multiple. minimum lift adaptation stop
279F	Control fan A	281d	BSD wire failure	28dc	Generator 2 communication
27A0	Control E-box fan	281E	Control DISA		
27A4	EWS3.3 Interface DME-EWS	281F	Voltage-monitoring O2-sensor on air bank2	2908	CAN Timeout DSC SG
27A6	Activation EV1	2820	Failure DISA	2909	CAN timeout EGS
27A7	Activation EV5	2821	DISA temp. warn level engine protection model	290A	Active front steering torque
27A8	Activation EV4	2822	Forced switched EGS	292b	LSU adjustment line
27A9	Activation EV8	2823	Lambda sensor heater before cat (within acceleration)	292c	LSU adjustment line bank2
27AA	Activation EV6	2824	Lambda sensor heater before cat (within acceleration) bank2	292d	LSU Nernst cell break
27Ab	Activation EV3	2825	Aging of O2-sensor behind catalyst	292E	LSU Nernst cell break bank2
27Ac	Activation EV7	2826	Aging of O2-sensor behind catalyst (Bank 2)	2930	LSU virtual mass break
27Ad	Activation EV2	2827	Heater link at signal-path	2931	LSU virtual mass break bank2
27b3	Diagnose DK/HFM adjustment	2828	CAN ARS signal failure	297d	CAN SSG signal failure
27b4	Ambient-pressure sensor	2829	CAN CAS signal failure	2981	Control controlled airflow
27b5	Control inlet-VANOS	282A	CAN IHKA signal failure	2982	Oil control light activation
27b6	Control inlet-VANOS bank2	282b	CAN PWML signal failure	299b	Communication DME - IBS
27b7	Control fuel pump relay	282c	CAN SZL signal failure	299c	IBS proprietary diagnostic 1
27b8	Plausibility diff. pressure sensor	282d	Heater link at signal-path bank2	299d	IBS proprietary diagnostic 2
27bb	Camshaft control outlet-VANOS0	282E	PWG-movement	29A8	Power management network failure
27bc	Camshaft control outlet-VANOS bank2	2830	Aging of O2-sensor behind catalyst (Bank 2)	29A9	Power management
27bd	Control outlet-VANOS	2832	Plausibility diagnostics LSU by LSH after catalyst bank2	29AE	Check Filler Cap
27bE	Control outlet-VANOS bank2	2833	Internal diagnostics CJ125 SPI communication bank2	29cc	Misfire, several cylinders
27bF	Camshaft sensor inlet bank2	2834	Power break at pump-current bank2	29cd	Misfire, cylinder 1
27c0	Camshaft sensor outlet bank2	2835	Short circuit to minus or to plus at sensor-line bank2	29cE	Misfire, cylinder 2
27c1	Master camshaft sensor	2836	LSU dynamic too slow bank2	29cF	Misfire, cylinder 3
27c2	Control A/C-compressor control	283A	Failure oil quality sensor	29d0	Misfire, cylinder 4
27c3	Failure oil status sensor	283E	WT-enable-wire control	29d1	Misfire, cylinder 5
27c8	Tank-ventilation-system major leak	283F	Plausibility oil pressure switch	29d2	Misfire, cylinder 6
27cA	Control DMTL pump motor	2841	Containment injectors control	29d3	Misfire, cylinder 7
27cb	DM-TL 0.5mm leak MIL off	2842	Generator 2 error	29d4	Misfire, cylinder 8
27cc	DM-TL Fine leak	2843	Plausibility diagnostics LSU by LSH after catalyst	29d9	Misfire with low fuel
27cd	DM-TL module	2844	Internal diagnostics CJ125 SPI communication	29dd	Bad way detection
27cE	Load sensor monitoring	2849	Power break at pump-current	29E5	Mixture adaptation, upper speed range
27d5	Failure within the idle-speed control	284A	Short circuit to minus or to plus at sensor-line	29E6	Mixture adaptation 2, upper speed range
27d9	Control DMTL heater	284c	LSU dynamic too slow	29E7	Mixture adaptation at idle speed per time
27dA	Generator failure	284F	Failure at speed-display kombi	29E8	Mixture adaptation 2 at idle speed per time
27dc	EWS3.3 Random-code storing	2850	WT-leading sensor	29E9	Mixture adaptation at idle speed per ignition
27E1	Monitoring pedal-travel sensor	2851	WT-leading sensor bank2	29EA	Mixture adaptation 2 at idle speed per ignition
27E2	Knock sensor 1	2852	WT-ref. sensor	29Eb	Mixture adaptation, deflection
27E3	Knock sensor 2	2853	WT-ref. sensor (bank2)	29Ec	Mixture adaptation 2, deflection
27E4	Knock sensor 3	2854	WT-Sensor plausibility	29Ed	Mixture adaptation, lower speed range
27E5	Knock sensor 4	2855	WT-Sensor plausibility (bank2)	29EE	Mixture adaptation 2, lower speed range
27E6	Knock sensor zero test	2856	WT-Supply voltage for the sensor	29EF	Mixture adaptation, total fault
27E7	Knock sensor offset	2857	WT-Supply voltage for the sensor (bank2)	29F0	Mixture adaptation 2, total fault
27E8	Knock regulation Test impulse	2858	WT-Teaching function at stop	29F4	Catalyst conversion
27E9	Knock sensor zero test bank2	2859	WT-Teaching function at stop (bank2)	29F5	Catalyst conversion 2
27EA	CAN-Timeout HDEV	285A	WT-Actuator monitoring	29FE	Secondary air system
27Eb	CAN-Timeout TXU	285b	WT-Actuator monitoring (Bank2)		
27Ec	CAN EGS signal failure	285c	WT-CAN-communication	2A01	Secondary air valve, Mechanics
27Ed	CAN ASC/DSC signal failure	285d	WT-CAN-communication (bank2)	2A02	Secondary air valve, Control
27EE	CAN Instrument cluster signal failure	285E	WT-Control unit internal failure	2A03	Secondary air pump relay, Control
27EF	CAN ACC signal failure	285F	WT-Control unit internal failure (bank2)	2A05	Secondary air ventricle 2, Mechanics
27F0	Plausibility MSR-control	2860	WT-Output	2A08	Secondary air system 2
27F1	Plausibility ACC-control	2861	WT-Output-stage (bank2)	2A09	Secondary air pump plausibility
27F2	Plausibility gas level	2862	WT-Power supply	2A12	DMTL-magnetic valve, control
27F3	CAN-Timeout WT-Control unit	2863	WT-Power supply (bank2)	2A13	DMTL-Lack diagnose pump control
27F5	CAN-Timeout DME-Control unit	2864	DM-TL-Pump control failure	2A14	DMTL, subtlest leakage
27F6	Accelerator potentiometer	2865	Power supply limit WT-emergency	2A15	DMTL, fine leakage
27F7	Pedal-travel Pot11	2866	WT-stops leaning necessary	2A16	DMTL, subtlest leakage
27F8	Pedal-travel Pot12	2867	WT-system overload	2A17	DMTL, system error
27F9	Control starter automatic	2868	WT-system overload bank2	2A18	DMTL, Heizung: control
27FA	Input starter automatic	287c	Pressure sensor suction tube	2A19	Fuel evaporation valve, control
27Fb	Controlled airflow	2880	AGR system	2A1A	Fuel evaporation system, function
27Fd	Start automatic control	2889	Plausibility monitoring of the RAM backup	2A1b	Fuel cap
27FE	Knock control offset bank2	28c8	LR-Deviation	2A1c	Fuel level, plausibility
27FF	Knock control test signal bank2	28c9	LR-Deviation bank2	2A1d	Fuel level, plausibility
		28d2	Pressure sensor charge-air	2A1E	Fuel level, signal

2A20	Tank ventilation valve, plausibility	2c38	Lambda probe front catalyst 2, heater interconnection	2db4	Multifunction steering wheel, communication
2A23	DMTL, leakage diagnostic pump	2c39	Lambda probe front catalyst, dynamic	2dbF	CAN, ACC: signal error
2A58	Valvetronic, power supply	2c3A	Lambda probe front catalyst 2, dynamic	2dcA	EGS message missing, timeout
2A59	Valvetronic, eccentric shaft sensor: guide	2c3b	Lambda probe front catalyst, not plugged	2dcb	CAN, SSG: signal error
2A5A	Valvetronic, eccentric shaft sensor 2: guide	2c3c	Lambda probe front catalyst 2, not plugged	2dcF	CAN, control panel: signal error
2A5b	Valvetronic, eccentric shaft sensor: reference	2c45	Lambda probe front catalyst	2dd7	DSC message missing, timeout
2A5c	Valvetronic, eccentric shaft sensor 2: reference	2c46	Lambda probe front catalyst 2	2dd8	AFS message missing, timeout
2A5d	Valvetronic, eccentric shaft sensor: plausibility	2c47	Lambda probe front catalyst, sensor line	2dd9	CAN, ARS: signal error
2A5E	Valvetronic, eccentric shaft sensor 2: plausibility	2c48	Lambda probe front catalyst 2, sensor line	2dda	CAN, CAS: signal error
2A5F	Valvetronic, eccentric shaft sensor: power supply	2c49	Lambda probe front catalyst, plausibility	2ddb	CAN, IHKA: signal error
2A60	Valvetronic, eccentric shaft sensor 2: power supply	2c4A	Lambda probe front catalyst 2, plausibility	2ddc	Message from SZL is absent
2A61	Valvetronic, adjustable range	2c4b	Ecu, internal error: lambda probe device	2ddd	Valvetronic message missing
2A62	Valvetronic, adjustable range 2	2c4c	Ecu, internal error: lambda probe device 2	2dde	Local-CAN communication
2A63	Valvetronic, servo motor: monitoring tightness, rotation direction	2c4d	Lambda probe front catalyst, pumping electricity line	2ddf	Local-CAN communication 2
2A64	Valvetronic, servo motor 2: monitoring tightness, rotation direction	2c4E	Lambda probe front catalyst 2, pumping electricity line	2dEb	Power management, vehicle electrical system monitoring
2A65	Valvetronic, internal error	2c4F	Lambda probe front catalyst, alignment line	2dEc	Power management, battery monitoring
2A66	Valvetronic, internal error 2	2c50	Lambda probe front catalyst 2, alignment line	2dEd	Power management, quiescent current control
2A67	Valvetronic, servo motor: control	2c51	Lambda probe front catalyst, Nernst line		
2A68	Valvetronic, servo motor 2: control	2c52	Lambda probe front catalyst 2, Nernst line	2E24	Spark coil cylinder 1
2A69	Valvetronic, servo motor: power supply	2c53	Lambda probe front catalyst, virtual mass	2E25	Spark coil cylinder 2
2A6A	Valvetronic, servo motor 2: power supply	2c54	Lambda probe front catalyst 2, virtual mass	2E26	Spark coil cylinder 3
2A6b	Valvetronic, power limitation	2c61	Lambda probe front catalyst, electrical error	2E27	Spark coil cylinder 4
2A6c	Valvetronic, position at restart: plausibility	2c62	Lambda probe front catalyst 2, electrical error	2E28	Spark coil cylinder 5
2A6d	Valvetronic, electric overload protection	2c6d	Lambda probe rear catalyst, aging	2E29	Spark coil cylinder 6
2A6E	Valvetronic, electrical overload protection 2	2c6E	Lambda probe rear catalyst 2, aging	2E2A	Spark coil cylinder 7
2A6F	Valvetronic, minimal stroke	2c71	Lambda probe rear catalyst	2E2b	Spark coil cylinder 8
2A80	Intake-VANOS, control	2c72	Lambda probe rear catalyst 2	2E30	Injection valve cylinder 1, control
2A81	Intake-VANOS, Control 2	2c9c	Lambda probe heater front catalyst, control	2E31	Injection valve cylinder 2, control
2A83	Intake-VANOS	2c9d	Lambda probe heater front catalyst 2, control	2E32	Injection valve cylinder 3, control
2A84	Intake-VANOS 2	2c9E	Lambda probe heater rear catalyst, control	2E33	Injection valve cylinder 4, control
2A85	Outlet-VANOS, control	2c9F	Lambda probe heater rear catalyst 2, control	2E34	Injection valve cylinder 5, control
2A86	Outlet-VANOS, Control 2	2cA0	Lambda probe heater front catalyst	2E35	Injection valve cylinder 6, control
2A88	Outlet-VANOS	2cA1	Lambda probe heater front catalyst 2	2E36	Injection valve cylinder 7, control
2A89	Outlet-VANOS 2	2cA2	Lambda probe heating in front of catalyst, shearing stress	2E37	Injection valve cylinder 8, control
2A8A	Intake-VANOS, Adaptation limit stop	2cA3	Lambda probe heating in front of catalyst 2, shearing stress	2E68	Knocking sensor signal 1
2A8b	Intake-VANOS, Adaptation limit stop 2	2cA8	Lambda probe heater rear catalyst, function	2E69	Knocking sensor signal 2
2A8c	Outlet-VANOS, Adaptation limit stop	2cA9	Lambda probe heater rear catalyst 2, function	2E6A	Knocking sensor signal 3
2A8d	Outlet-VANOS, Adaptation limit stop 2	2cEF	Throttle valve actuator, control	2E6b	Knocking sensor signal 4
2A8E	Intake camshaft, cog offset of crankshaft	2cF0	Throttle valve actuator, control range	2E72	Ecu, internal error: knock sensor device
2A8F	Intake camshaft 2, cog offset of crankshaft	2cF1	Throttle valve actuator, position monitoring	2E73	Ecu, internal error: knock sensor device
2A90	Outlet camshaft, cog offset of crankshaft	2cF8	Throttle valve potentiometer	2E7c	Bit serial data interface, signal
2A91	Outlet camshaft 2, cog offset of crankshaft	2cF9	Throttle valve potentiometer 1	2E86	Electrical water pump
		2cFA	Throttle valve potentiometer 2	2E8b	Intelligent Battery sensor, Signal
2b5c	Crankshaft sensor, signal	2cFF	Throttle valve actuator, amplifier alignment	2E8c	Intelligent Battery sensor, Function
2b5d	Crankshaft sensor, plausibility			2E8d	Intelligent Battery sensor, Signal transmission
2b61	Crankshaft - camshaft, correlation	2d00	Throttle valve actuator, spring check closing spring	2E95	Generator
2b62	Camshaft sensor, intake	2d01	Throttle valve actuator, spring check opening spring	2E97	Generator
2b63	Camshaft sensor, outlet	2d02	Throttle valve actuator, auxiliary air point	2E99	Generator 2
2b64	Camshaft sensor 2, intake	2d03	Throttle valve actuator, abort alignment because of environmental condition	2E9A	Generator 2, communication
2b65	Camshaft sensor 2, outlet	2d04	Throttle valve actuator, checking lower block	2E9F	Oil status sensor
2b66	Camshaft sensor, master	2d05	Throttle valve actuator, abort at UMA relearn	2EA0	Ölstands sensor
2b70	Variable intake system, control	2d08	Throttle valve actuator, change detection without alignment	2Eb8	BSD message from intelligent battery sensor missing
2b71	Variable suction system	2d0F	Airflow sensor, signal	2Eb9	BSD message from glow ecu missing
2b72	Variable intake system, temperature warning limit	2d10	Air mass gauger, plausibility	2EbA	BSD message from electric coolant pump missing, electronic missing
2b73	Variable intake system, plausibility	2d11	Air mass current, plausibility	2Ebb	BSD message from electric coolant pump missing, motor missing
2b7F	Trim throttle valve-air mass sensor	2d13	Luftmassenmesser, rational	2Ebc	BSD message from oil sensor missing
2b80	Idle running control	2d14	Air mass gauger, correction signal	2Ebd	BSD message from generator missing
2b84	Intake flap, Signal	2d19	Gas pedal device, gas pedal sensor	2Ebe	BSD message from generator 2 missing
2b98	Ecu, internal error: RAM backup, plausibility	2d1A	Gas pedal device, gas pedal sensor	2EbF	Rate action: BSD message missing
2b99	Ecu, internal error: RAM backup	2d1b	Gas pedal device, gas pedal sensor 1	2EE0	Coolant temperature sensor, signal
2b9A	Ecu, internal error: RAM	2d1c	Gas pedal device, gas pedal sensor 2	2EE1	Coolant temperature sensor, plausibility
2b9b	Ecu, internal error: ROM	2d28	Differential air pressure, intake tube: signal	2EE4	Coolant temperature sensor, plausibility, shunt
2b9c	Ecu, internal error: reset	2d29	Differential air pressure, intake tube: plausibility	2EEA	Temperature sensor coolant exhaust, Signal
2b9d	Ecu, internal error: over voltage	2d32	Differential pressure, intake tube: plausibility	2EEc	Temperature sensor radiator, plausibility
2bA7	Monitoring engine torque limit	2d6E	DME, internal error: monitoring actual torque	2EF4	Engine characteristic map thermostat, Mechanics
2bbF	Oil control lamp Control	2d6F	Monitoring airflow	2EF5	Engine characteristic map thermostat, Control
2bc0	Environment temperature sensor, Plausibility	2d70	DME, internal error: monitoring engine functions	2EF6	Engine operating map thermostat
2bc1	Ambient temperature sensor, signal	2d71	DME, internal error: monitoring input variable	2EFE	E-fan, control
		2d72	DME, internal error: monitoring hardware		
2c24	Lambda probe front catalyst, exchanged	2d75	DME, internal error: monitoring engine speed	2F08	Intake air temperature sensor, signal
2c31	Lambda probe front catalyst, adjustment control	2d76	DME, internal error: monitoring gas pedal device	2F09	Intake air temperature sensor, plausibility
2c32	Lambda probe front catalyst 2, adjustment control	2d78	Air mass current alignment	2F0d	Cooler louver, control, (GLF)
2c37	Lambda probe front catalyst, heater interconnection			2F0F	Cooler jalousie, above

2F12	Air-conditioning compressor, control	2738	Fill plausibility bank 2	2783	Secondary air valve actuation electric diagnostic
2F17	Engine oil temperature, temporary to high, EGS-Zwangsschaltung	2739	Secondary air Mini-HFM electrical Diagnostics	2786	Plausible fuel pressure sensor to mech. pressure actuator
2F26	Coordinator thermal management	273A	Lambda sensor vibration test NKAT bank	2787	Fuel pressure variance comparison at controlled operation
2F44	EWS manipulation prevention	273b	Lambda sensor vibration test NKAT bank 2	2788	Fuel pressure variance comparison at max pressure
2F45	Interface EWS-DME	273c	Lambda sensor part/full diagnostic VKAT bank 1	2789	Catalytic converter conversion bank 1
2F46	EWS saving changing code	273d	Lambda sensor part/full diagnostic VKAT bank 2	278A	Catalytic converter conversion bank 2
2F4E	Vehicle speed, signal	273E	Lambda sensor terminal stage heating VKAT bank 1	278b	VANOS pressure accumulation valve actuation
2F4F	Vehicle speed, plausibility	273F	Lambda sensor terminal stage heating VKAT bank 2	278c	Generator
2F50	Vehicle speed, plausibility	2740	Lambda sensor heating control diagnostic VKAT bank 1	278d	BSD interface
2F59	Start automatic, start signal	2741	Lambda sensor heating control diagnostic VKAT bank 2	278E	Oil quality sensor
2F5A	Start automatic control	2742	Lambda sensor heater resistance diagnostic VKAT bank 1	278F	IBS communication
2F62	Brake light switch	2743	Lambda sensor heater resistance diagnostic VKAT bank 2	2790	IBS implausible
2F67	Clutch switch, Signal	2744	Lambda sensor heater diagnostic after START VKAT bank 1	2791	IBS general
2F6c	Flue gas damper, control	2745	Lambda sensor heater diagnostic after START VKAT bank 2	2792	Power management vehicle electrical system
2F71	E-Box-fan, control	2746	Lambda probe Reference resistance diagnosis VKAT Bank 1	2793	Power management battery
2F76	Ambient pressure, signal	2747	Lambda probe Reference resistance diagnosis VKAT Bank 2	2794	Unterdruck sensor Mastervac
2F77	Ambient pressure, plausibility	2748	Lambda probe Diagnosis via ATIC42-device VKAT Bank1	2796	Motor emergency program activated
2F78	DME, internal error: environment pressure sensor	2749	Lambda probe Diagnosis via ATIC42-device VKAT Bank2	2797	Intake jet pump system check
2F7b	Oil pressure switch, plausibility	274A	Lambda sensor pump current assimilation error VKAT bank 1	2798	EWS interface
2F80	Engine turn off time, plausibility	274b	Lambda sensor pump current assimilation error VKAT bank 2	2799	EWS
2F8A	Battery Voltage	274c	Message (gear data)	279A	IBS communication error
2F94	Fuel pump relay, actuation	274d	Message (gear data 2)	279b	Generator communication error
2F99	Environment temperature sensor, Plausibility	274E	Lambda sensor error Nernst cable VKAT bank 1	279c	BSD bus error (general)
2F9E	Thermo oil level sensor	274F	Lambda sensor error Nernst cable VKAT bank 2	279d	Power management battery closed-circuit current violation
2FA3	Coding is absence	2750	Lambda sensor error pump current cable VKAT bank 1	279E	Oil quality sensor
		2751	Lambda sensor error pump current cable VKAT bank 2	279F	Box blower actuation electric diagnostic
cd87	PT-CAN communication error	2752	SG internal error Inj working page		
cd8b	Local CAN communication error	2753	Ignition cyl 1 actuation electric diagnostic	27A0	SG internal error
cd9b	Telegram monitoring (vehicle mode, 315)	2754	Ignition cyl 2 actuation electric diagnostic	27A1	Throttle valve actuator enable cable bank 1
cdA1	Telegram monitoring (steering angle, C4)	2755	Ignition cyl 3 actuation electric diagnostic	27A2	Throttle valve actuator enable cable bank 2
cdA2	Telegram monitoring (power management battery voltage, 3B4)	2756	Ignition cyl 4 actuation electric diagnostic	27A3	Oil pressure switch electric diagnostic
cdA3	Telegram monitoring (power management charging voltage, 334)	2757	Ignition cyl 5 actuation electric diagnostic	27A4	Tank ventilation function test bank 1
cdA7	Message (Status reverse gear, 3B0)	2758	Ignition cyl 6 actuation electric diagnostic	27A5	Tank ventilation function test bank 2
cdAA	Message (Status Crash shut off EKP, 135)	2759	Ignition cyl 7 actuation electric diagnostic	27A6	Tank ventilation actuation bank 1
cdAc	message (status of water valve, 3B5)	275A	Ignition cyl 8 actuation electric diagnostic	27A7	Tank ventilation actuation bank 2
cdEb	Message (lamp status, 21A)	275b	Ignition cyl 9 actuation electric diagnostic	27A8	SG internal monitor level 2
cdEd	Message (request wheel torque drivetrain, BF)	275c	Ignition cyl 10 actuation electric diagnostic	27A9	Crankshaft sensor
cdEE	Message (time/date, 2F8)	275d	Lambda control stop error bank 1	27AA	Lambda adaptation at VKAT stop bank 1
cdEF	Message (status of trailer, 2E4)	275E	Lambda control stop error bank 2	27Ab	Lambda adaptation at VKAT stop bank 2
		275F	VANOS maximum stop inlet bank 1	27Ac	Crank housing ventilation diagnostic bank 1
Table 23		2760	VANOS maximum stop outlet bank 1	27Ad	Crank housing ventilation diagnostic bank 2
		2761	VANOS maximum stop inlet bank 2	27AE	Tank fuel level implausible
2710	ECU internal INJ-error memory test	2762	VANOS maximum stop outlet bank 2	27AF	Secondary air pump
2711	Ambient pressure sensor	2763	VANOS valve inlet bank 1		
2712	Air mass meter bank 1	2764	VANOS valve outlet bank 1	27b0	Secondary air system throughput bank 1
2713	Air mass meter bank 2	2765	VANOS valve inlet bank 2	27b1	Secondary air system throughput bank 2
2714	Intake pipe pressure sensor bank 1	2766	VANOS valve outlet bank 2	27b2	Secondary air system throughput main section
2715	Intake pipe pressure sensor bank 2	2767	Injection valve cyl 1 electric diagnostic	27b3	Energy saving mode active
2716	Camshaft sensor inlet bank 1	2768	Injection valve cyl 2 electric diagnostic	27b4	Gear leergassen switch of manual transmission
2717	Camshaft sensor outlet bank 1	2769	Injection valve cyl 3 electric diagnostic	27b5	Clutch switch manual gearbox
2718	Camshaft sensor inlet bank 2	276A	Injection valve cyl 4 electric diagnostic	27b6	VANOS oil pressure
2719	Camshaft sensor outlet bank 2	276b	Injection valve cyl 5 electric diagnostic	27b7	Elektrische Unterdruck pump for Mastervac
271A	VANOS control inlet bank 1	276c	Injection valve cyl 6 electric diagnostic	27b8	E blower actuation electric diagnostic
271b	VANOS control outlet bank 1	276d	Injection valve cyl 7 electric diagnostic	27bA	Fuel system diagnostic bank 1
271c	VANOS control inlet bank 2	276E	Injection valve cyl 8 electric diagnostic	27bb	Fuel system diagnostic bank 2
271d	VANOS control outlet bank 2	276F	Injection valve cyl 9 electric diagnostic	27bc	Catalyst protection Bank 1
271E	Camshaft synchronization bank 1	2770	Injection valve cyl 10 electric diagnostic	27bd	Catalyst protection Bank 2
271F	Camshaft synchronization bank 2	2771	Lambda sensor dynamic diagnostic VKAT bank 1	27bE	Message (Status Gear)
2720	SG internal error INJ process control	2772	Lambda sensor dynamic diagnostic VKAT bank 2	27bF	Message (Request wheel moment)
2721	Message (Moment request DKG)	2776	DMTL pump		
2722	Fuel pressure sensor electrical Diagnostics	2777	DMTL valve	27c0	Tankgeber elektrischer Fehler
2723	Message (Status reverse gear)	2778	DMTL heating	27c1	Info Tank leer bei Fehlereintrag
2724	Lambda sensor electric diagnostic VKAT bank 1	2779	DMTL leak detection	27c2	Message (wheel tolerance adjustment)
2725	Lambda sensor electric diagnostic VKAT bank 2	277A	DMTL pump moisture cut-out	27c3	DMTL leak detection
2726	Lambda sensor plausibility VKAT bank 1	277b	Tank cover message	27c4	Environment pressure Plausibility
2727	Lambda sensor plausibility VKAT bank 2	277c	Lambda sensor trim control diagnostic bank 1	27c5	Secondary air Mini-HFM Plausibility
2728	Lambda sensor thrust diagnostic VKAT bank 1	277d	Lambda sensor trim control diagnostic bank 2	27c6	Lambda probe AD-Diagnostics trim control Bank 1
2729	Lambda sensor thrust diagnostic VKAT bank 2	277E	Main relay actuation electric diagnostic	27c7	Lambda sensor trim control AD diagnostic bank 2
272A	Lambda sensor electric diagnostic NKAT bank 1	277F	EKP module actuation electric diagnostic	27c8	Lambda probe electric. OPENLOAD-Diagnostics NKAT Bank1
272b	Lambda sensor electric diagnostic NKAT bank 2	2780	Intake jet pump actuation electric diagnostic	27c9	Lambda probe electric. OPENLOAD-Diagnostics NKAT Bank2
272c	Lambda sensor driver diagnostic heating NKAT bank 1	2781	TD signal actuation electric diagnostic	27cA	Lambda probe Wiedereinsetz-Diagnose NKAT Bank 1
272d	Lambda sensor driver diagnostic heating NKAT bank 2	2782	Secondary air pump actuation electric diagnostic	27cb	Lambda probe Wiedereinsetz-Diagnose NKAT Bank 2
2737	Fill plausibility bank 1				

27cc	Lambda probe heating energy NKAT Bank 1	2b1d	Exhaust temperature sensor bank 1	2b6b	INDEX_115_IGN
27cd	Lambda probe heating energy NKAT Bank 2	2b1E	Exhaust temperature sensor bank 2	2b6c	INDEX_116_IGN
27cE	Fuel pressure-/Model comparison	2b1F	Throttle valve sensor bank 1	2b6d	INDEX_117_IGN
27cF	Building up of fuel pressure EKP-forward stroke	2b20	Throttle valve sensor bank 2	2b6E	INDEX_118_IGN
		2b21	Throttle valve actuator pre-drive check bank 1	2b6F	INDEX_119_IGN
27d0	Fuel pressure control adaptation	2b22	Throttle valve actuator pre-drive check bank 2	2b70	INDEX_120_IGN
27d1	Gear temperature sensor of manual transmission	2b23	Idling speed control valve control monitor bank 1	2b71	INDEX_121_IGN
27d2	Lambda probe VKAT/ATIC42 SPI-communication	2b24	Idling speed control valve control monitor bank 2	2b72	INDEX_122_IGN
27d3	INDEX_195_INJ	2b25	Throttle valve monitor bank 1	2b73	INDEX_123_IGN
27d4	Message (OBD-Error type)	2b26	Throttle valve monitor bank 2	2b74	INDEX_124_IGN
27d5	Tank sensor left electrical failure	2b27	Throttle valve test reset springs bank 1	2b75	INDEX_125_IGN
27d6	Tank sensor right electrical failure	2b28	Throttle valve test reset springs bank 2	2b76	INDEX_126_IGN
27d7	Lambda sensor SLOPE diagnostics NKAT Bank 1	2b29	Torque manager monitor	2b77	INDEX_127_IGN
27d8	Lambda sensor SLOPE diagnostics NKAT Bank 2	2b2A	Idling speed control valve initialization		
27d9	Plausibility Difference-pressure-sensor Mastervac	2b2b	DSC requirement plausibility	cd87	CAN bus communication error
27dA	Plausibility depression pump Mastervac	2b2c	Throttle valve initialization bank 1	cd8b	Bus off idling speed control valve /SMG CAN
27db	INDEX_203_INJ	2b2d	Throttle valve initialization bank 2	cd93	Bus off throttle valve CAN
27dc	INDEX_204_INJ	2b2E	Idling speed control valve initialization bank 1	cd94	Message (exterior temperature)
27dd	INDEX_205_INJ	2b2F	Idling speed control valve initialization bank 2	cd95	Message (control FGR)
27dE	INDEX_206_INJ	2b35	Combustion misfire with cut-out cyl 1	cd98	Message (current requirement DSC)
27dF	INDEX_207_INJ	2b36	Combustion misfire with cut-out cyl 2	cd9b	Message (vehicle mode)
		2b37	Combustion misfire with cut-out cyl 3	cd9c	Message (vehicle speed)
27E0	INDEX_208_INJ	2b38	Combustion misfire with cut-out cyl 4	cd9F	Message (mileage)
27E1	INDEX_209_INJ	2b39	Combustion misfire with cut-out cyl 5	cdA0	Message (terminal status)
27E2	INDEX_210_INJ	2b3A	Combustion misfire with cut-out cyl 6	cdA1	Message (steering angle)
27E3	INDEX_211_INJ	2b3b	Combustion misfire with cut-out cyl 7	cdA5	Message (status DSC)
27E4	INDEX_212_INJ	2b3c	Combustion misfire with cut-out cyl 8	cdA8	Message (cluster status)
27E5	INDEX_213_INJ	2b3d	Combustion misfire with cut-out cyl 9	cdA9	Message (air-conditioning requirement)
27E6	INDEX_214_INJ	2b3E	Combustion misfire with cut-out cyl 10	cdAA	Message (crash cut-out)
27E7	INDEX_215_INJ	2b3F	Ion current signal bank 1	cdAF	Message (trailer status)
27E8	INDEX_216_INJ	2b40	Ion current signal bank 2	cdbb	Message (wheel speeds)
27E9	INDEX_217_INJ	2b41	Combustion misfire with cut-out several cyl	cdbc	Message (audio telephone control)
27EA	INDEX_218_INJ	2b42	Combustion misfire with emissions deterioration cyl 1	cdbd	Idling speed control valve CAN message bank 1
27Eb	INDEX_219_INJ	2b43	Combustion misfire with emissions deterioration cyl 2	cdbe	Idling speed control valve CAN message bank 2
27Ec	INDEX_220_INJ	2b44	Combustion misfire with emissions deterioration cyl 3	cdbf	Throttle valve actuator CAN message bank 1
27Ed	INDEX_221_INJ	2b45	Combustion misfire with emissions deterioration cyl 4	cdc0	Throttle valve actuator CAN message bank 2
27EE	INDEX_222_INJ	2b46	Combustion misfire with emissions deterioration cyl 5	cdc1	SMG CAN message 1
27EF	INDEX_223_INJ	2b47	Combustion misfire with emissions deterioration cyl 6	cdc2	SMG CAN message 2
		2b48	Combustion misfire with emissions deterioration cyl 7	cdc3	SMG CAN message 3
2AF8	ECU internal IGN-error memory test	2b49	Combustion misfire with emissions deterioration cyl 8	FFFF	Unknown error location
2AF9	Coolant temperature sensor	2b4A	Combustion misfire with emissions deterioration cyl 9		
2AFA	Coolant temperature sensor plausibility	2b4b	Combustion misfire with emissions deterioration cyl 10	Table 24	
2AFb	Intake air temperature sensor bank 1	2b4c	Ion current control module internal bank 1		
2AFc	Intake air temperature sensor bank 2	2b4d	Ion current control module internal bank 2	2712	Actuation of solenoid valve DM-TL
2AFd	Relative time plausibility	2b4E	Combustion misfire with emissions deterioration several cyl	2713	Reversed Lambda probes or plug assignment HDEV control module reversed
2AFE	Voltage at terminal 87	2b4F	Intake air temperature sensor plausibility bank 1	2716	Actuation of heating sensor downstream of cat
2AFF	Radiator output temperature sensor	2b50	Request Plausibility	271A	Lambda probe upstream of cat
		2b51	Message (Status EKP)	271b	Output heating probe upstream of catalytic converter
2b00	Control module temperature sensor	2b52	Additional oil pump bank 1	271c	Lambda probe downstream of cat
2b01	Voltage supply at PIN 111,219,514	2b53	Additional oil pump bank 2	271d	Lambda probes heating upstream of cat
2b02	Voltage supply at PIN 124,512	2b54	SG internal error	271E	Lambda probes heating downstream of cat
2b03	SG internal error Ign working page	2b55	SG internal monitor level 2	2721	Lambda probe ageing downstream of cat
2b04	Radiator outlet temperature plausibility	2b56	Brake light/test switch plausibility	2728	LR adaptation multiplicative range2
2b05	Pedal value sensor 1	2b57	Motor emergency program activated	272A	LR adaptation multiplicative range1
2b06	Pedal value sensor 2	2b58	Idling control monitor	272c	LR adaptation additive per time
2b07	Pedal value sensor plausibility	2b59	Coolant thermostat monitor	272E	LR adaptation additive per ignition
2b08	SG internal error IGN processor control	2b5A	Intake air temperature sensor plausibility bank 2	2730	Mix adaptation sum error
2b0d	Idling speed control valve monitor bank 1	2b5b	Throttle valve error status Bank 1	2731	Camshaft controller inlet
2b0E	Idling speed control valve monitor bank 2	2b5c	Throttle valve error status Bank 2	2733	Mix adaptation sum error Bank2
2b0F	SMG switch process monitor	2b5d	Vehicle speed control release	2736	Lambda probe in front of catalyst, electrical error
2b10	SMG module monitor	2b5E	Acknowledgement of accelerator and brake at the same time	2737	EWS3.3 manipulation guard
2b11	SMG engine speed monitor	2b5F	CAS Control electrical Diagnostics	2738	Catalytic conversion
2b12	Ambient temperature sensor plausibility	2b60	Longitudinal acceleration sensor Hand schaltgetriebe	2742	Failure recognition cyl.1
2b13	Speed registration	2b61	Gear input speed sensor / slipping clutch	2743	Failure recognition cyl.7
2b14	Initialization throttle positioner	2b62	Environment temperature sensor	2744	Failure recognition cyl.5
2b15	Throttle valve actuator control monitor bank 1	2b63	Idle running switch control - CSS	2745	Failure recognition cyl.11
2b16	Throttle valve actuator control monitor bank 2	2b64	Shunt coolant temperature sensor	2746	Failure recognition cyl.3
2b17	Throttle valve adaptation bank 1	2b65	Post adoption longitudinal acceleration sensor HSG	2747	Failure recognition cyl.9
2b18	Throttle valve adaptation bank 2	2b66	INDEX_110_IGN	2748	Failure recognition cyl.6
2b19	Ion current signal amplification bank 1	2b67	INDEX_111_IGN	2749	Failure recognition cyl.12
2b1A	Ion current measurement voltage selection bank 1	2b68	INDEX_112_IGN	274A	Failure recognition cyl.2
2b1b	Ion current signal amplification bank 2	2b69	INDEX_113_IGN	274b	Failure recognition cyl.8
2b1c	Ion current measurement voltage selection bank 2	2b6A	INDEX_114_IGN	274c	Failure recognition cyl.4

274d	Failure recognition cyl.10	27b8	Plausibility differential pressure sensor	2847	Pressure switch activation
274E	Failure recognition sum error	27b9	Environment pressure sensor, Signal	2848	Output relay HDEV SG
2753	Monitor magneto 1	27bA	Environment pressure sensor, Plausibility	2849	Cable break on pump current
2754	Control igniter 5	27bb	Camshaft control outlet	284A	Short circuit probe cables against earth or Ub
2755	Control igniter 3	27bd	Activation of outlet VANOS	284b	Control return blocking valve
2756	Control igniter 6			284c	LSU dynamic too slow
2757	Control igniter 2	27c1	Master camshaft sensor	284F	Speed display in cluster defective
2758	Control igniter 4	27c2	Activation of air conditioning compressor controller	2850	WT guide sensor
2759	Control igniter 7	27c8	DM-TL rough leakage	2851	WT-direction sensor (Bank2)
275A	Control igniter 11	27cA	Activation of DM-TL pump motor	2852	WT reference sensor
275b	Control igniter 9	27cb	DM-TL Very fine leak (0.5 mm) MIL off	2853	WT reference sensor (bank2)
275c	Control igniter 12	27cc	DM-TL fine leak	2854	WT sensor plausibility
275d	Control igniter 8	27cd	DM-TL module	2855	WT sensor plausibility (bank2)
275E	Monitor magneto 10	27cE	Load-sensor-, wire- or ECU-error	2856	WT sensor supply voltage
2760	Secondary air system			2857	WT sensor supply voltage (bank2)
2762	Secondary air valve	27d5	Idling control defective	2858	WT learn function stop
2764	Activate relay for secondary air pump	27d9	Activation of DM-TL heating	2859	WT learn function stop (bank2)
2765	Activate secondary air valve	27dA	Generator error	285A	WT actuator monitor
2769	Spring test throttle valve adjuster opening spring	27dc	EWS3.3 alternating code saving	285b	WT actuator monitor (bank2)
276A	Control module selection			285c	WT-CAN communication
276d	Tank ventilation functional check	27E1	Pedal value sensor monitor	285d	WT-CAN communication (bank2)
2772	Activate tank ventilation valve	27E2	Knocking sensor1	285E	WT control module internal error
2774	Plausibility system clock power module	27E3	Knocking sensor2	2860	WT-output
2775	Engine torque monitor level 2	27E4	Knocking sensor3	2862	WT-power supply
2776	Multi-functional steering wheel interface	27E5	Knocking sensor3	2864	DM-TL pump activation error
2778	Clutch switch	27E6	Knocking control zero test	2865	Performance limit WT emergency operation
2779	Control module self-test RAM	27E7	Knocking control offset	2866	WT stop learning necessary
277A	Brake switch	27E8	Knocking control test pulse	2867	WT system overload
277b	Control module self-test ROM	27E9	Knocking control zero test bank2	286d	Output HDEV9, cable 9
277c	Control module self-test RESET	27EA	CAN timeout HDEV	286E	Output HDEV12, cable 12
277d	Battery voltage	27Ec	CAN-EGS Signal error	286F	Output HDEV8, cable 8
277E	Torque limitation level 1	27Ed	CAN-ASC/DSC signal error	2870	Output HDEV10, cable 10
277F	Crankshaft sensor	27EE	CAN-instrument cluster signal error	2871	High pressure injection valve high side 7
2780	Reference mark sensor	27EF	CAN-ACC signal error	2872	High pressure injection valve high side 11
2781	Camshaft sensor inlet			2873	High pressure injection valve high side 9
2782	Camshaft sensor outlet	27F2	Plausibility tank fill level	2874	High pressure injection valve high side 12
2783	Hot film air mass meter	27F3	CAN-Timeout WT control module	2875	High pressure injection valve high side 8
2785	Throttle valve potentiometer	27F4	Fuel level, signal	2876	High pressure injection valve high side 10
2786	Throttle valve potentiometer 1	27F5	Fuel level, plausibility	2877	High pressure injection valve high side 7
2787	Throttle valve potentiometer 2	27F6	Pedal value sensor	2878	High pressure injection valve high side 11
2788	Driving speed	27F7	Pedal value sensor potentiometer1	287A	High pressure injection valve high side 9
2789	Poor road recognition	27F8	Pedal value sensor potentiometer2	287d	High pressure injection valve low side 12
278A	Ambient temperature	27FA	Automatic start input	287E	High pressure injection valve low side 8
278b	Engine temperature	27Fd	Automatic start	287F	High pressure injection valve low side 10
278c	Intake air temperature	27FE	Knocking control offset bank2	2880	Activation return ventilation-valve
278d	Temperature sensor radiator outlet	27FF	Knocking control test pulse bank2	2889	Plausibility monitor RAM backup
278E	Differential pressure sensor intake pipe			28c8	LR deviation
2791	Exchanger code without adaptation	2813	Control module monitor group A	28d6	HO process error, no coding
2792	Throttle valve position monitor	2814	Control module monitor group B	28d7	Generator communication
2793	DK-Actuator Control division	2815	Control module monitor group C	28d8	RAM backup error
2794	Throttle valve adjuster activation	2816	Engine speed monitor	28db	Min stroke adaptation stop several times
2795	Spring test throttle valve adjuster closing spring	2818	Voltage monitor probe on air (probe not fitted but connected)	28dc	2. generator communication
2796	Check bottom stop	2819	Time out ECU-coupling	28dE	Booster timeout high pressure injection valve cyl 1
2797	Throttle valve adjuster error during amplifier matching	281E	Activation of DISA	28dF	Booster timeout high pressure injection valve cyl 5
2798	Check emergency air point	2822	Forced circuit EGS	28E0	Booster timeout high pressure injection valve cyl 3
2799	Cancel DV adaptation because of environmental conditions	2823	Lambda probe heating upstream of cat (in thrust)	28E1	Booster timeout high pressure injection valve cyl 6
279A	Cancel during UMA relearn	2825	Lambda probe ageing downstream of cat	28E2	Booster timeout high pressure injection valve cyl 2
279b	Thermostat jamming	2827	Heating connection to signal path	28E3	Booster timeout high pressure injection valve cyl 4
279c	Activation of thermostat characteristic field cooling	2828	CAN-ARS signal error	28E4	Booster timeout high pressure injection valve cyl 7
279d	Activation engine electric fan	2829	CAN-CAS signal error	28E5	Booster timeout high pressure injector cyl 11
279E	Activation of exhaust valve	282A	CAN-HKA signal error	2901	Booster timeout high pressure injection valve cyl 9
279F	Output fan A	282b	CAN-PWML signal error	2902	booster timeout high pressure injector cyl 12
		282c	CAN-SZL signal error	2903	Booster timeout high pressure injection valve cyl 8
27A0	Activation of E box fan	282E	PWG movement	2904	Booster timeout high pressure injector cyl 10
27A2	Engine fan 2 activated	283A	Error oil level sensor	290F	High pressure sensor test (signal rail pressure sensor)
27A4	EWS3.3 EWS-DME interface	283d	PT CAN bus off	2913	Output HDEV1, cable 1
		283E	VVT enable cable activation	2914	Output HDEV5 wire 5
27b0	Environment temperature sensor, Signal	283F	Plausibility oil pressure switch	2915	Output HDEV3, cable 3
27b1	Environment temperature sensor, Plausibility	2841	Air-encased injection valves activation	2916	Output HDEV6, cable 6
27b3	Throttle valve/HFM matching activation	2842	2nd generator error	2917	Output HDEV2, cable 2
27b4	Pressure sensor environment	2843	Plausibility diagnostic LSU by LSH rear cat	2918	Output HDEV4, cable 4
27b5	Activation of inlet VANOS	2844	Self-diagnostic CJ125 SPI communication	2919	Output HDEV7, cable 7
27b7	Activation of fuel pump relay	2846	Activation of intake valve	291A	Output HDEV11 cable 11

2E48	Booster high pressure injector 1	291b	High pressure injection valve high side 1	2A12	DMTL diagnosis module tank leakage, magnetic valve, input signal
2E49	Booster high pressure injector 5	291c	High pressure injection valve high side 5	2A13	DMTL diagnosis module tank leakage, leakage diagnosis pump, input signal
2E4A	Booster high pressure injector 3	291d	High pressure injection valve high side 3	2A14	DMTL diagnosis module tank leakage, finest leakage
2E4b	Booster high pressure injector 6	291E	High pressure injection valve high side 6	2A15	DMTL diagnosis module tank leakage, fine leakage
2E4c	Booster high pressure injector 2	291F	High pressure injection valve, communication	2A16	DMTL diagnosis module tank leakage, finest leakage
2E4d	Booster high pressure injector 4	2920	High pressure injection valve low side 1	2A17	DMTL diagnosis module tank leakage, system failure
2E4E	Booster high pressure injector 7	2921	High pressure injection valve low side 5	2A18	DMTL diagnosis module tank leakage, heating: input signal
2E4F	Booster high pressure injector 11	2922	High pressure injection valve low side 3	2A19	Tank ventilation valve, input signal
2E50	Booster high pressure injector 9	2923	High pressure injection valve low side 6	2A1A	Tank ventilation system, function
2E51	Booster high pressure injector 12	2924	Rail pressure control	2A1d	Tank filling level, plausibility
2E52	Booster high pressure injector 8	292b	LSU matching cable	2A1E	Fuel level, signal
2E53	Booster high pressure injector 10	292d	LSU Nernst cell break	2A21	Tank fill level 2, signal
2E60	HDEV-control unit, internal error: communication	2930	LSU virtual earth break	2A2A	Ventilation valve return system, control
2E68	Knock sensor signal 1	2932	Output pressure control valve	2A58	Valvetronic, power supply
2E69	Knock sensor signal 2	2937	Function monitor: Lambda plausibilisation	2A59	Valvetronic, eccentric shaft sensor: track
2E6A	Knocking sensor signal 3	2940	High pressure injection valve high side 2	2A5b	Valvetronic, eccentric shaft sensor: reference
2E6E	Ignition, control: firing time	2941	High pressure injection valve high side 4	2A5d	Valvetronic, eccentric shaft sensor: plausibility
2E6F	Ignition 2, control: firing time	2942	High pressure injection valve low side 2	2A5F	Valvetronic, eccentric shaft sensor: power supply
2E72	Control unit, internal failure: knock sensor module	2943	High pressure injection valve low side 4	2A61	Valvetronic, adjustment range
2E73	Control unit, internal failure: knock sensor module	2944	DME coupling messages	2A63	Valvetronic, servo motor: monitoring tightness, rotation direction
2E97	Generator	296c	CAN timeout TXJ	2A65	Valvetronic, internal error
2E98	Generator, communication	296d	Engine torque bank comparison	2A67	Valvetronic, adjustment motor: input signal
2E99	Generator 2	2971	Program and data state plausibilisation of master and slave	2A69	Valvetronic, servo motor: power supply
2E9A	Generator 2, communication	297c	RL limiting	2A6b	Valvetronic, power limiting
2E9F	Oil condition sensor	298E	High pressure injection valve 1	2A6c	Valvetronic, position at restart: plausibility
2EE0	Coolant temperature sensor, Signal	298F	High pressure injection valve 5	2A6d	Valvetronic, electronic overload protection
2EE1	Coolant temperature sensor, plausibility	2990	High pressure injection valve 3	2A6F	Valvetronic, minimal stroke
2EEA	Temperature sensor radiator emission, signal	2991	High pressure injection valve 6	2A80	Inlet-Vanos variable cam control test, input signal
2EF4	Map thermostat, mechanics	2992	High pressure injection valve 2	2A83	Injector-VANOS
2EF5	Map thermostat, input signal	2993	High pressure injection valve 4	2A85	Outlet-VANOS variable cam control test
2EFc	Electric fan 2, Control	2994	High pressure injection valve 7	2A88	Outlet-VANOS
2EFE	Electrical fan, input signal	2995	High pressure injection valve 11	2A8A	Intake-VANOS, Adaptation limit stop
		2996	High pressure injection valve 9	2A8c	Outlet-VANOS, Adaptation limit stop
2F08	Inlet air temperature sensor, signal	2997	High pressure injection valve 12	2A8E	Intake camshaft, cog offset of crankshaft
2F09	Inlet air temperature sensor, plausibility	2998	High pressure injection valve 8	2A90	Outlet camshaft, cog offset of crankshaft
2F0b	Intake air temperature sensor: cold portion, plausibility (preliminary)	2999	High pressure injection valve 10		
2F17	Engine oil temperature, temporary to high, EGS-Zwangsschaltung	29AE	Fuel tank cap open	2b5c	Crankshaft sensor, signal
2F44	EWS manipulation protection			2b5d	Crankshaft sensor, plausibility
2F45	Interface EWS-DME electronic vehicle immobilization/digital motor electronics	cd87	PT CAN bus off	2b62	Camshaft sensor, intake
2F46	EWS variable code storage	cd8b	Local CAN bus off	2b63	Camshaft sensor, outlet
2F4E	Vehicle speed, signal	cdcf	PT CAN bus off	2b66	Camshaft sensor, master
2F4F	Vehicle speed, plausibility	cdcb	Local CAN bus off	2b7A	Stop valve return system, control
2F50	Vehicle speed, plausibility			2b7F	Adjustment throttle valve-air mass sensor
2F59	Start automatic, start signal	Table 25		2b81	Idle speed control at homogeny mode
2F5A	Start automatic control			2b82	Idle running control at catalyst heating system
2F62	Brake light switch	29cc	Misfiring, several cylinders	2b84	Additional air flap, control
2F6c	Exhaust fume flap, input signal	29cd	Misfiring, cylinder 1	2b98	Ecu, internal error: RAM backup, plausibility
2F71	E-box-fan, input signal	29cE	Misfiring, cylinder 2	2b99	Ecu, internal error: RAM backup
2F77	Ambient pressure sensor, plausibility	29cF	Misfiring, cylinder 3	2b9A	Control unit, internal failure: RAM
2F78	DME, internal error: environment pressure sensor			2b9b	Ecu, internal error: ROM
2F7b	Oil pressure switch, plausibility	29d0	Misfiring, cylinder 4	2b9c	Ecu, internal error: reset
2F80	Motor shutoff time, plausibility	29d1	Misfiring, cylinder 5	2bA7	DME, internal error: toque limit control level 1
2F8A	Battery Voltage	29d2	Misfiring, cylinder 6	2bAc	DME, DME2: Program stand discrepancy
2FA3	Coding missing	29d3	Misfire, cylinder 7	2bAd	DME, DME2: Hardware, plausibility
		29d4	Misfire, cylinder 8	2bc0	Ambient temperature sensor, plausibility
30Ac	Injection valve cylinder 1, input signal	29d5	Misfire, cylinder 9	2bc1	Ambienttemperature sensor, signal
30Ad	Injection valve cylinder 2, input signal	29d6	Misfire, cylinder 10		
30AE	Injection valve cylinder 3, input signal	29d7	Misfire, cylinder 11	2c24	Lambda problem in front of catalytic converter, muddled
30AF	Injection valve cylinder 4, input signal	29d8	Misfire, cylinder 12	2c31	Lambda probe in front of catalytic converter, trimming control
30b0	Injection valve cylinder 5, input signal	29dd	Bad way detection	2c37	Lambda probe in front of catalytic converter, heating coupling
30b1	Injection valve cylinder 6, input signal			2c39	Lambda probe in front of catalytic converter, dynamics
30b2	Injection valve cylinder 7, control	29E2	Fuel injection rail, pressure sensor signal	2c3b	Lambda probe in front of catalytic converter, not plugged
30b3	Injection valve cylinder 8, control	29E3	Fuel pressure regulation, plausibility	2c47	Lambda probe front catalyst, sensor line
30b4	Injector cylinder 9, control	29E4	Volume control valve, control	2c49	Lambda probe front catalyst, plausibility
30b5	Injector cylinder 10, control	29E5	Fuel mixture adaptation, upper speed range	2c4b	Ecu, internal error: lambda probe device
30b6	Injector cylinder 11, control	29E7	Mixture adaptation at idle speed per time	2c4d	Lambda probe front catalyst, pumping electricity line
30b7	Injector cylinder 12, control	29Ed	Mixture adaptation, lower speed range	2c4F	Lambda probe front catalyst, alignment line
30d4	Message from HDEV missing	29EF	Mixture adaptation, total fault	2c51	Lambda probe front catalyst, Nernst line
30E8	Filling limit			2c53	Lambda probe front catalyst, virtual mass
		29F0	Mixture adaptation 2, total fault	2c61	Lambda probe front catalyst, electrical error
cd87	PT-CAN communication failure	29F4	Catalytic converter conversion	2c6d	Lambda probe behind catalytic converter, aging
cd8b	Local-CAN communication failure			2c71	Lambda probe rear catalyst

2c84	Lambda probe behind catalyst, Dynamics	cd b7	Message (OBD-Sensor Diagnosis status, 5E0)	87	Signal Camshaft sensor
2c9c	Lambda probe heating in front of catalytic converter, input signal	cdc 7	PT-CAN communication failure	88	Signal Crankshaft sensor
2c9E	Lambda probe heating behind catalytic converter, input signal	cdcb	Local-CAN communication failure	89	Signal Knock sensor 1
2cA0	Lambda probe heater front catalyst	cd dd	Message (gear data, BA)	90	Manipulation protection EWS
2cA8	Lambda probe heating behind catalytic converter, function	cd e0	Message (terminal state, 130)	91	Misfire by Cylinder 1
2cEF	Throttle valve actuator, activation			92	Misfire by Cylinder 2
2cF0	Throttle valve actuator, control range	Table 26		93	Misfire by Cylinder 3
2cF1	Throttle valve actuator, position monitoring			94	Misfire by Cylinder 4
2cF8	Throttle valve potentiometer	01	Relay electric Fuel pump	95	Control valve secondary air
2cF9	Throttle valve potentiometer 1	02	Idle speed control valve closing coil	96	Control Relay Secondary air pump
2cFA	Throttle valve potentiometer 2	03	Injector valve Cylinder 2	97	Secondary air system Plausibility
2cFF	Throttle valve actuator, amplifier alignment	04	Injector valve Cylinder 4	98	Self test E2PROM-Emulation
		12	Difference suction pipe	99	Control Lambda probe heating after
2d00	Throttle valve actuator, spring check closing spring	18	Ignition coil Cylinder 3		
2d01	Throttle valve actuator, spring check opening spring	19	Ignition coil Cylinder 1	6A	Control Injector valve Cylinder 3
2d02	Throttle valve actuator, auxiliary air point	20	Injector valve Cylinder	6b	Control Injector valve Cylinder 4
2d03	Throttle valve actuator, abort alignment because of environmental condition	24	Tank ventilation valve	6c	Control electric fan
2d04	Throttle valve actuator, checking lower block	25	Lambda probe heating	6E	Control Air conditioning compressor
2d05	Throttle valve actuator, abort at UMA relearn	29	Air mass flow sensor	6F	Control Relay Fuel pump
2d0F	Air mass meter, signal	30	Relay Air conditioning compressor	7A	Signal cooling water temperature
2d13	Air mass sensor, rationality	33	Ignition coil Cylinder 4	7b	Signal cooling water exit temperature
2d1A	Gas pedal device, gas pedal sensor	34	Ignition coil Cylinder 2	7c	Battery Voltage main relay
2d1b	Accelerator pedal module, pedal sensor signal 1	36	Battery Voltage	7d	Signal Lambda probe before KAT
2d1c	Accelerator pedal module, pedal sensor signal 2	40	CAN function EGS	7E	Signal CAN ASC
2d28	Differential pressure sensor, suction pipe: Signal	43	Sensor	7F	Request CAN ASC
2d29	Differential pressure sensor, suction pipe: plausibility	46	Lambda probe	8A	Signal Knock sensor 2
2d6d	DME, internal error: control DME/DME2	49	Signal	8b	Signal Lambda probe after KAT
2d6E	DME digital motor electronics, internal failure: control actual torque??	51	Theft alarm system-PIN	8c	Interface DME – EWS
2d6F	DME, internal error: control air path	52	Air condition	8d	Lambda regulation control range block
2d70	DME, internal error: monitoring engine functions	53	Switch Air Condition		
2d71	DME, internal error: monitoring input variable			Table 61	
2d72	DME digital motor electronics, internal failure: control hardware	0c	Throttle valve potentiometer		
2d74	DME, internal error: control fuel pressure sensor	0F	Knock sensor 1	64	Control Ignition Cylinder 1
2d75	DME digital motor electronics, internal failure: control motor speed	1d	Idle adjuster opening coil	65	Control Ignition Cylinder 2
2d76	DME digital motor electronics, internal failure: control driver pedal module	1F	Injector valve Cylinder 3	66	Control Ignition Cylinder 3
2d77	DME, DME2: torque comparison	2A	Knock sensor 2	67	Control Ignition Cylinder 4
2dbf	CAN, ACC: signal error	2c	Sensor	68	Control Injector valve Cylinder 1
2dc1	Message from power module missing	2E	Electric fan	69	Control Injector valve Cylinder 2
2dcF	CAN, control panel: signal error	4c	Potentiometer	70	Control Solenoid Valve suction tube
2dd7	Message from DSC doesn't exist, timeout	4d	Intake air temperatures	71	Control Solenoid Valve Tank ventilation
2dd9	CAN, ARS: signal error	4E	Engine temperature	72	Control Solenoid Valve suction jet pump
2dda	CAN, CAS: signal error			73	Control grid-controlled cooling
2ddb	CAN, IHKA: signal error	c8	Control unit self-test	75	Control Idle adjuster
2ddc	Message from SZL is absent	c9	Fuel trim limit	76	Control Lambda probe heating before
2ddd	Valvetronic message missing	cE	Knock regulation	77	Signal Throttle valve potentiometer
2ddE	Local-CAN communication	d8	ASC-Signal	78	Signal air flow meter
2dE6	Local-CAN, DME/DME2: communication	dc	Function	79	Signal Intake air temperature
		Ec	EGS-Signal	80	Signal CAN EGS
2E24	Ignition coil cyl. 1			81	Request CAN EGS
2E25	Ignition coil cyl. 2	Table 27		82	Signal CAN IKE
2E26	Ignition coil cyl. 3			83	Signal Speed
2E27	Ignition coil cyl. 4	64	Control Ignition Cylinder 1	84	Reference voltage for air flow meter
2E28	Ignition coil cyl. 5	65	Control Ignition Cylinder 2	85	Reference voltage for Throttle valve
2E29	Ignition coil cyl. 6	66	Control Ignition Cylinder 3	87	Signal Camshaft sensor
2E2A	Spark coil cylinder 7	67	Control Ignition Cylinder 4	88	Signal Crankshaft sensor
2E2b	Spark coil cylinder 8	68	Control Injector valve Cylinder 1	89	Signal Knock sensor 1
2E2c	Ignition coil cylinder 9	69	Control Injector valve Cylinder 2	90	Manipulation protection EWS
2E2d	Ignition coil cylinder 10	70	Control Solenoid Valve suction tube	91	Misfire by Cylinder 1
2E2E	Ignition coil cylinder 11	71	Control Solenoid Valve Tank ventilation	92	Misfire by Cylinder 2
2E2F	Ignition coil cylinder 12	72	Control Solenoid Valve suction jet pump	93	Misfire by Cylinder 3
2E3c	HDEV-control unit line 9, control	73	Control grid-controlled cooling	94	Misfire by Cylinder 4
2E3d	HDEV-control unit line 12, control	75	Control Idle adjuster	95	Control valve secondary air
2E3E	HDEV-control unit line 8, control	76	Control Lambda probe heating before	96	Control Relay Secondary air pump
2E3F	HDEV-control unit line 10, control	77	Signal Throttle valve potentiometer	97	Sekundaerluftsystem Plausibilitaet
2E40	HDEV-control unit line 1, control	78	Signal air flow meter	98	SG-Selbsttest E2PROM-Emulation
2E41	HDEV-control unit line 5, control	79	Signal Intake air temperature	99	Control Lambda probe heating after
2E42	HDEV-control unit line 3, control	80	Signal CAN EGS		
2E43	HDEV-control unit line 6, control	81	Request CAN EGS	6A	Control Injector valve Cylinder 3
2E44	HDEV-control unit line 2, control	82	Signal CAN IKE	6b	Control Injector valve Cylinder 4
2E45	HDEV-control unit line 4, control	83	Signal Speed	6c	Control electric fan
2E46	HDEV-control unit line 7, control	84	Reference voltage for air flow meter	6E	Control Air conditioning compressor
2E47	HDEV-control unit line 11, control	85	Reference voltage for Throttle valve	6F	Control Relay Fuel pump

Warranty

This limited warranty cover defects in materials and workmanship for a period of twelve (12) months which begins from the date the product is purchased by the end user and is subjected to the following terms and conditions:

- Within the warranty period, the manufacturer will repair or replace, at their options, any defective parts and return to the owner in good working condition.
- Any repaired or replaced parts will be warranted for the balance of the original warranty or three months (3) months from the date of repair, whichever is longer.
- This warranty only extends to the first owner and not assignable or transferable to any subsequent owner.
- Cost of delivery charges incurred for the repair of the product to and from the manufacturer will be borne by the owner.
- This limited warranty covers only those defects that arises as a result of normal use and does not cover those that arises as a result of:
 - Unauthorized modifications and repair.
 - Improper operation or misuse.
 - Accident or neglect such as dropping the unit onto hard surfaces.
 - Contact with water, rain or extreme humidity.
 - Contact with extreme heat.
 - Cables that have broken, bent contact pins or subject to extreme stress or wear.
 - Physical damage to the product surface including scratches, cracks or other damage to the display screen or other externally exposed parts.

Limitations of Warranty:

Other than the foregoing limited warranty, the manufacturer does not make any other warranty or condition of any kind, whether express or implied.