CS1000
Fault Code Scanner

BMW
Instructions

Model Years 1988-98

Table of Contents

SCANNER FEATURES

1. Keypad

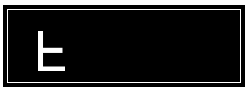
SYSTEM Select vehicle control system for code reading and erasing.

READ Read fault codes.

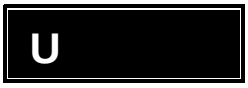
NEXT View next fault code. (If more than one fault code present)

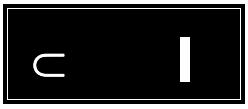
CLEAR Clear fault codes.

2. Screen Symbols:


Control systems select.


Scanner is Reading or Clearing fault code


Indicate fault code list number to use.


Indicate fault code.

0000 Four **0**s flashing together.
Connection fault or system not fitted to this vehicle.

- » Check that the Ignition key is on or the Engine is running.
- » Check power requirement to scanner (10.5 to 14.5 Volts)
- » Check the in-line fuse on the Yellow probe wire.
- » Check for correct connection to the Vehicle Diagnostic Connector.
- » Check for short circuit in the Vehicle Diagnostic Connector.
- » Check that this memory cartridge is available for this vehicle system.
- » Check that vehicle system requested for test is fitted to this vehicle.

3. Indicator lights:

Power indicator (Red LED light)

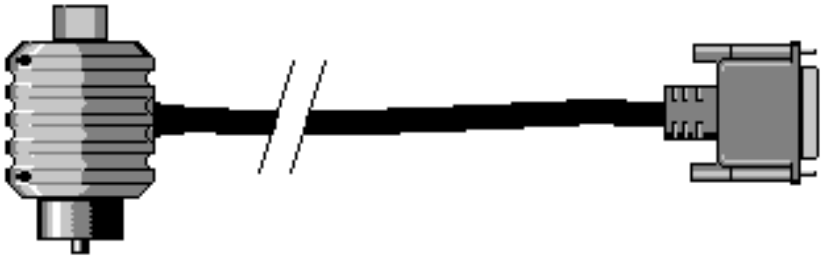
Data link indicator (Green LED light). Receive data from the control unit.

Data link indicator (Yellow LED light). Transfer data to the control unit.

SECTION 1 Using the CS1000 Code Scanner

Diagnostic Cable

CS1000-BMW8897-C BMW Diagnostic Cable 1988-98
For the BMW vehicle control systems on board diagnostic 1988 - 1998 (Except DME 5.2)



Note:
OB15-1, 15-3, 15-5 and 15-9 memory cartridges use the same CS1000-BMW8895-C Diagnostic cable for the application.
Attach one end of the diagnostic cable to the Scanner adapter port. Attach the other end of the diagnostic cable to the vehicle diagnostic connector.

Operating the CS1000 - Engine (DME/DDE) & Airbag (SRS)

OB15-9 Memory Cartridge - BMW DME/SRS

This section covers BMW DME and SRS System types and Model applications

The Code Scanner will read and clear fault codes for the following Systems:

AirBag (SRS)

Airbag Application Guide

Model	Body type	Model Year
SRS 1	E31, E32, E34	1988-1991
SRS 2	E31, E32, E34, E36	1991-1993
SRS 3	E31, E34, E36, E38, E39, E46	1993-1997

Engine (DME)

BMW DME Application Guide

Model	Body	Years	Motor	Notes	Does OB15-9 Module work on this DME?
316i	E30	1988-91	M40	M1.3	YES
318i	E30	9/87-89	M40	M1.3	YES
318is	E30	9/89-91	M42/B18	M1.7	YES
318i/is	E36	92-12/93	M42/B18 disa	M1.7	YES
318i/is	E36	1/94-12/94	M42/B18 DISA2	M1.7.2	YES
318i/is/Ti	E36	1/95-8/95	M42/B18 DISA2	M1.7.2 w/ EWS-II	YES
318i/is/Ti	E36	1996-98	M44/B19	M5.2 (OBD-II)	YES
325e/es	E30	9/84-9/87	M20/B27	Basic M1.0	NO
325	E30	88	M20/B27	M1.1	YES
325i/is/iX	E30	87-91	M20/B25	M1.3	YES
325i/is	E36	9/90-8/92	M50/B25	M3.1	YES
325i/is/ic	E36	9/92-12/94	M50tu/B25	M3.3.1	YES

Model	Body	Years	Motor	Notes	Does OB15-9 Module work on this DME?
325i/is/ic	E36	1/95+	M50tu/B25	M3.3.1 w/ EWS-II	YES
328i	E36	96+	M52/B28	MS41.1 (OBD-II)	YES
M3	E30	88-91	S14/B23	M1.0 Motorsport	NO
M3 - Evo2	E30	89	S14/B23	M1.0 Motorsport	NO
M3 - Evo3	E30	89	S14/B25	M1.0 Motorsport	NO
M3 - Euro	E36	93-95	S50/B30	M3.3	YES
M3	E36	thru 12/95	S50us/B30	M3.3.1	YES
M3	E36	1/95+	S50us/B30	M3.3.1 w/ EWS-II	YES
M3	E36	1996	S50us/B32	MS41.1 (OBD-II)	YES
M3	E36	1997+	S52	MS41.2 (OBD-II)	YES
Z3	E36	96+	M44/B19	M5.2 (OBD-II)	YES
Z3	E36	1997	M52	MS41.0(OBD-II) MS41.1(OBD-II)	YES
525i	E34	89-90	M20/B25	M1.3	YES
525i	E34	89-90	M20/B25	M1.3	YES
525i	E34	thru 8/91	M50/B25	M3.1	YES
525i/iT	E34	9/91-1/92	M50/B25	M3.1	YES
525i/iT	E34	2/92-93	M50/B25	M3.1	YES
525i/iT	E34	93-12/94	M50tu/B25	M3.3.1	YES
525i/iT	E34	1/95+	M50tu/B25	M3.3.1 w/ EWS-II	YES
528e	E28	9/84-9/87	M20/B27	M1.0 Basic	NO
528e	E28	88	M20/B27	M1.1	YES
528i	E39	96+	M52/B28	MS41.1 (OBD-II)	YES
530i	E34	3/93-8/94	M60/B30	M3.3	YES
530i	E34	9/94-12/94	M60/B30	M3.3 w/ air pump	YES
530i	E34	1/95-4/94	M60/B30	M3.3 w/ EWS-II	YES
533i	E28	84	M30/B32	M1.0 Basic	NO
535i/is	E28	85-87	M30/B34	M1.0 Adaptive (24 pin)	NO
535i/is	E28	88	M30/B34	M1.0 Adaptive (28 pin)	NO

BMW **Code Scanner CS1000**

Model	Body	Years	Motor	Notes	Does OB15-9 Module work on this DME?
535i	E34	89-92	M30/B35	M1.3	YES
540i	E34	thru 12/94	M60/B40	M3.3	YES
540i	E34	1/95+	M60/B40	M3.3 w/ EWS-II	YES
540i	E39	96+	M62/B44	M5.2 (OBD-II)	YES
M5/M6	E28/E24	87-88	S38/B35	M1.0 Motorsport	NO
M5/M6	E28/E24	84-88	M88	M1.0 Motorsport	NO
M5	E34	91+	S38/B36	M1.2	YES
633csi	E24	84	M30/B32	M1.0 Basic	NO
635csi	E24	85-87	M30/B34	M1.0 Adaptive	NO
635csi	E24	88	M30/B35	M1.1	YES
635csi	E24	89	M30/B35	M1.3	YES
733i	E23	84	M30/B32	M1.0 Basic	NO
735i	E23	85-87	M30/B34	M1.0 Adaptive	NO
735i/iL	E32	88	M30/B35	M1.1	YES
735i/iL	E32	89-92	M30/B35	M1.3	YES
740i/iL	E32	9/92-4/94	M60/B40	M3.3	YES
740i/iL	E38	1/95-8/95	M60/B40	M3.3 w/ EWS-II	YES
740i/IL	E38	9/95+	M62/B44	M5.2 (OBD-II)	YES
750iL	E32	88-90	M70/B50	M1.2	YES
750iL	E32	91+	M70/B50	M1.7	YES
750iL	E38	9/94+	M73/B54	M5.2.1 (OBD-II)	YES
840i	E31	9/93-12/94	M60/B40	M3.3	YES
840i	E31	1/95+	M60/B40	M3.3 w/ EWS-II	YES
840i	E31	96+	M62/B44	M5.2 (OBD-II)	YES
850i	E31	91+	M70/B50	M1.7	YES

1. Setting Up

Insert the **OB15-9** memory cartridge into the base of the scanner. Make sure the arrow on the cartridge is facing up as it is inserted. Push the cartridge until the cartridge snaps completely. Be sure to insert the memory cartridge into the scanner before powering-up the scanner.

Refer to the diagnostic cable page of this manual to determine vehicle cable requirements. Connect the diagnostic cable specified to the scanner and to the vehicle Diagnostic Connector.

2. Ignition ON or Engine at idle

3. System Select

Air-Bag (SRS)

Engine (DME)

Press the **SYSTEM** key to scroll to display 1 or 2 system .

Before using the CS1000 to read the DME, perform a “PEDAL TEST” on the vehicle to determine if the On-Board computer is working properly. This is for model years 1988-1994. See page 17.

4. Read Fault Codes

Press the **READ** key to begin to read the fault codes for the system selected. The screen will begin to flash the scan symbol and will display the system type number or “U” code (refer to the "U" code list on page 10).

Press the **NEXT** key to view the fault codes ⊂ **xx** . When all codes have been viewed the system type number U x will appear on the display. When there are no faults in the system, ⊂ **0** will be displayed on the screen.

NEXT

***** When performing the DME code read function on some models later then 1993, the CS1000 may read only one code even when more than one code is stored in the system. Perform the clear function and then read the codes again to display the next code.

Engine and Air-Bag System "U" Code Table (U x)

AirBag (SRS) system type list (Section 2)

System Code	Control System Type	Years
U 1	SRS 1 (1 or 2 Air bags)	1988-91
U 2	SRS 2 (1 or 2 Air bags)	1991-1993
U 3	SRS 3 (1 or 2 Air bags)	1993-1995
U 3	SRS 3 (4 AirBags)	1996-98

Engine (DME) system type list (Section 3)

SYSTEM CODE	DME TYPE	SYSTEM CODE	DME TYPE
U 1	M 1.1	U 7	M 3.1
U 2	M 1.2	U 8	M 3.3
U 3	M 1.3	U 9	M 3.3.1
U 4	M 1.7	U 10	MS40.0/1
U 5	M 1.7.1	U 11	MS41.0/1/2 - DME 5.2
U 6	M 1.7.2	U 99	[See below*]

Figure 1:

* If the display shows **U99**, the CS1000's software cartridge cannot identify the specific control unit found in the car. Please refer to the chart below

U99	
M42/43 4- cylinder engine	U 6
M50 6 cylinder engine (325) 10/90-9/92	U 7
M50 6 cylinder engine (VANOS) 9/92-9/95	U 9

M60 8 cylinder engine	**U 8**

5. Identification/Rectification of Faults

Identify fault code list and related circuit according to the fault code number in manual or in BMW maintenance manual. Carry out required repair before clearing fault codes.

6. Clearing Fault Codes

After repairs have been carried out. Press the CLEAR key to erase all of the fault codes from the control unit memory. When there are no faults in the system, ⊂ **0** will be displayed on the screen.

CLEAR

7. Return to System Select function

Press the SYSTEM keys to return to the system select function.

SYSTEM

Operating the **CS1000** - **Transmission (EGS)**

OB15-3 Memory Cartridge - BMW Transmission (EGS)

Transmission (EGS) System Code "U" List (Code Section 4)

System Number	Control system type	Years
U 1	EGS 1.2x	1988-1992
U 4	EGS 4.xx	1992-1995
U 7	EGS 7.xx	1993-1995
U 8	EGS 1.2x	1988-1992
U 9	EGS 9.xx	1993-1995

1. Setting Up:

Insert the OB15-3 memory cartridge into the base of the scanner. Make sure the arrow on the cartridge is facing up as it is inserted. Push the cartridge until the cartridge snaps completely. Be sure to insert the memory cartridge into the scanner before powering-up the scanner.

Refer to the diagnostic cable page of this manual to determine vehicle cable requirements. Connect the diagnostic cable specified to the scanner and to the vehicle Diagnostic Connector.

2. Ignition ON or Engine at idle

3. Read Fault Codes

Press the READ key to begin to read the fault codes for the system selected. The screen will begin to flash the scan symbol and will display the system type number (refer to the "U" code list on page 13).

READ

Press the NEXT key to scroll to view the fault codes ⊂ **xx** and system type number U

x. When there are no faults in the system, ⊂ **0** will be displayed on the screen.

NEXT

***** When performing the DME code read function on some models later then 1993, the CS1000 may read only one code even when more than one code is stored in the system. Perform the clear function and then read the codes again to display the next code.

4. Identification/Rectification of Faults

Identify fault code list and related circuit according to the fault code number in manual or in BMW maintenance manual. Carry out required repair before clearing fault codes.

5. Clear Fault Code

After repairs have been carried out. Press the CLEAR key to erase all of the fault codes from the control unit memory. When there are no faults in the system, ⊂ **0** will be displayed on the screen.

CLEAR

Operating the **CS1000** - **Service Interval Reset**

OB15-5 Memory Cartridge - SERVICE RESET

1. Setting Up

Insert the OB15-3 memory cartridge into the base of the scanner. Make sure the arrow on the cartridge is facing up as it is inserted. Push the cartridge until the cartridge snaps completely. Be sure to insert the memory cartridge into the scanner before powering-up the scanner.

Refer to the diagnostic cable page of this manual to determine vehicle cable requirements. Connect the diagnostic cable specified to the scanner and to the vehicle Diagnostic Connector.

2. Ignition ON

Note: The Scanner will automatically perform an OIL Service Interval reset when power is supplied.

3. System Select

1 **OIL Reset**

2 **INSPECTION Reset**

Press the SYSTEM key to scroll the display to the **1** or **2** system .

SYSTEM

4. Reset Service Counter

Press the CLEAR key to reset the service interval counter.

5. Return to System Select function

Press the SYSTEM keys to select the next function.

SECTION 2 DME/DDE Fault Code Lists

BMW MOTRONIC PEDAL TEST FAULT CODES

All 1989-94 BMW vehicles are equipped with a self diagnostic system for the detection of injection faults. When a fault is detected by the system the Electronic Control Unit (ECU) records the code corresponding to the defect in the ECU's memory until either:

1) The vehicle battery or the ECU is disconnected.
2) The engine is started 60 times with no recurrence of the fault.
3) The ECU memory is cleared using the BMW MODIC, DIS, Bosch KTS300, KTS500, or the Baum Tools CS1000 or CS2000 BMW hand held scanner.

To review the FAULT CODES from the ECU memory use the following procedure:

1) Turn the ignition switch to the 'engine run' position.
2) Depress the gas pedal to the floor 5 times.

The CHECK ENGINE light will blink out the FAULT CODES starting with the lowest number first. These FAULT CODES consist of 4 digits each separated by a short pause (ie. blink pause blink blink pause blink pause blink translates as 1 2 1 1).

BMW 'PEDAL' FAULT CODES

(Models 1989-94)

CODE	MALFUNCTIONING SYSTEM
1211	DME Control Unit
1212	EGO(O2) Sensor 2
1213	Lambda Control 2
1215	Air Mass/Volume Sensor
1216	Throttle Potentiometer
1218	Output Stage, Group 1
1219	Output Stage, Group 2
1221	EGO(O2) Sensor 1
1222	Lambda Control 1
1223	Coolant Temp. Sensor
1224	Intake Air Temp. Sensor
1225	Knock Sensor 1
1226	Knock Sensor 2
1227	Knock Sensor 3
1228	Knock Sensor 4

1231	Battery Voltage/DME Main Relay
1232	Throttle Switch - Idle
1233	Throttle Switch - WOT
1234	Speedometer A Signal
1237	A/C Compressor cut off
1241	False Air Mass Sensor Code - Update EPROM and replace Idle Valve
1242	A/C Compressor
1243	Crankshaft Pulse Sensor
1244	Camshaft Sensor
1245	Intervention EGS
1247	Ignition Secondary Monitor
1251	Fuel Injector 1 (or group 1)
1252	Fuel Injector 2 (or group 2)
1253	Fuel Injector 3
1254	Fuel Injector 4

1255	Fuel Injector 5
1256	Fuel Injector 6
1257	Fuel Injector 7
1258	Fuel Injector 8
1261	Fuel Pump Relay Control
1262	Idle Speed Actuator
1263	Purge Valve
1264	EGO(O2) Heater
1265	Fault Lamp (check engine)
1266	VANOS
1267	Air Pump Relay Control
1271	Ignition Coil 1
1272	Ignition Coil 2
1273	Ignition Coil 3

1274	Ignition Coil 4
1275	Ignition Coil 5
1276	Ignition Coil 6
1277	Ignition Coil 7
1278	Ignition Coil 8
1281	Control Unit Memory Supply
1282	Fault Code Memory
1283	Fuel Injector Output Stage
1286	Knock Control test Pulse
1444	No Failures

*In the 12 cylinder model the Injection system is treated as two 6 cylinder systems joined at the crank. This means there are two ECUs in the system. To access the second ECU depress the gas pedal to the floor 6 times.

Some models will return implausible blink codes if the ECU has failed or if the power is interrupted during operation. Remove the control units harness and reconnect after 10 minutes to reset the base values. This seems to resolve most of these problems.

BMW DME/DDE DIAGNOSTIC FAULT CODES

U1, U2, U3 - DME 1.1, 1.2, 1.3 / 4, 6 & 12-Cylinder	
M20, M30, M70 (1988-90), S38	
Fault	**Malfunction**
1	Fault in the DME control Unit
3	Fuel Pump Relay (EKP) or no TR Signal
4	Idle-speed Controller - Opening Winding
5	Tank Ventilation Valve
7	Air-flow Sensor
10	Oxygen Sensor (Lambda) Control Feedback (Air or Fuel Leak Likely)
15	Check Engine Light Failure (Check both bulbs)
16	Injection Valve(s), Cylinder 1+3, 1+3+5 or 7+9+11
17	Injection Valve(s), Cylinder 2+4, 2+4+6 or 8+10+12
22	Idle Speed Controller - Closing Windiing
23	Oxygen (Lambda) Sensor - Heater/Air Pump Relay
28	Oxygen (Lambda) Sensor
29	Vehicle Speed Signal
33	Kick Down Prevention Solenoid in Transmission (short)
37	Control Unit Power Supply B+
38	ASC/DWA short on pin 38 of DME, ground or B+
40	Air Conditioner Compressor
43	Idle-speed Co-potentiometer
44	Temperature-sensor - Air Intake
45	Temperature-sensor - Coolant
50	Intervention, Engine Drag Torque Control (MSR)
51	Ignition Timing (Angle) Intervention
52	Idle-speed Switch
53	Wide-open-throttle Switch
54	Torque Converter Lockup Clutch
100	DME Control Unit Final Stage

U4, U5 - DME 1.7, 1.7.1 / 4 & 12-Cylinder	
M40, M42, S70 Engine	
Fault	**Malfunction**
0	Undefined Fault
1	Fuel Pump Relay (EKP) / RPM Signal
2	Idle Actuator - Closing Winding
3	Fuel Injector on 4 cyl. 1 + 3, 12 cyl. 2+4+6 or 8+10+12
6	Fuel Injector output stage without cylinder assignment
8	Fault Lamp (US Model only)
12	Throttle Valve Potentiometer
16	Ignition Reference Signal, 6 cyl. Cam, 12 cyl #6 or #12
18	Control Unit Output Stage (short), Pin 18
19	Control Unit Output Stage (short), Pin 19
29	Idle Actuator
32	Fuel Injector, Cylinder 1+3+5 or 7+9+11
36	Tank Ventilation Valve
37	Oxygen Sensor Heater Relay
41	Air Flow Sensor
48	Air Conditioner Compressor Cutoff
54	Control Unit Power Supply B+
63	Torque Converter Lockup Clutch
64	Ignition Timing Intervention (signal from EGS)
70	Oxygen Sensor
73	Vehicle Speed Sensor Signal
76	Idle CO Potentiometer
77	Temperature Sensor - Air Intake
78	Temperature Sensor - Engine Coolant
82	Intervention, Engine Drag Torque Control (MSR)
83	Intervention, Automatic Stability Control (ASC)
85	Air Condition Compressor (Belt Slip or Seizing)
100	Control Unit, Output Stage
200	Control Unit (RAM, ROM/EPROM)
201	Oxygen Sensor (Lambda) Control Feedback (Air or Fuel Leak Likely)
255	Control Unit Internal Fault

U6 - DME1.7.2 / 4 Cylinder	
M42, M43 Engine	
Fault	**Malfunction**
0	Undefined fault
1	Fuel pump relay (EKP)
2	Idle Speed Controller
3	Fuel Injector #1 & #3 cylinder
8	Fault Lamp (US model only)
12	Throttle Valve Potentiometer

BMW DME/DDE DIAGNOSTIC FAULT CODES

15	Knock Sensor 1
16	Camshaft Sensor
18	Changeover Valve, DISA Butterfly
29	Idle Actuator
32	Fuel Injector, #2 & #4 cylinder
36	Tank Ventilation Valve
37	Oxygen-Sensor Heater
41	Air Flow Sensor
42	Knock Sensor 2
48	Air-Conditioner Compressor Cutoff
54	Control-Unit Power Supply B+
55	Ignition, #1 & #4 cylinder
64	Ignition Timing Intervention (signal from EGS)
70	Oxygen Sensor
73	Vehicle Speed Sensor Signal
76	Idle CO Potentiometer
77	Temperature Sensor - Air Intake
78	Temperature Sensor - Engine Coolant
85	Air Condition Compressor
100	This code pinpointed elsewhere
153	Control Voltage of Knock Control
201	Oxygen Sensor Control
255	Control Unit Internal Fault

U7 - DME 3.1 / 6-Cylinder	
M40, M42, M50 (1991-93), S70 Engine	
Fault	**Malfunction**
0	Undefined Fault
1	Fuel Pump Relay (EKP)
2	Idle Actuator - Closing Winding
3	Fuel Injector on Cylinder #1
4	Fuel Injector on Cylinder #3
5	Fuel Injector on Cylinder #2
6	Fuel Injector output stage without cylinder assignment
8	Fault Lamp (US Model only)
12	Throttle Valve Potentiometer
16	Ignition Reference Signal, Cam
18	Control Unit, Output Stage (short) Pin 18
19	Control Unit, Output Stage (short) Pin 19
23	Ignition Cylinder #2
24	Ignition Cylinder #3
25	Ignition Cylinder #1
26	Control Unit Supply Voltage B+ (Too High or Low)
29	Idle Actuator- Opening Winding
31	Fuel Injector, Cylinder #5
32	Fuel Injector, Cylinder #6
33	Fuel Injector, Cylinder #4
36	Tank Ventilation Valve
37	Oxygen Sensor Heater
41	Air Flow Sensor
46	Control Unit, Output Stage
48	Air Conditioner Compressor Cutoff
50	Ignition, Cylinder #4
51	Ignition, Cylinder #6
52	Ignition, Cylinder #5
54	DME Control Unit Power Supply via Main Relay
55	Ignition Final Stage
62	Electronic Throttle Control Signal (EML)
64	Ignition Timing Intervention (signal from EGS)
67	Crankshaft Pulse Generator
70	Oxygen Sensor (Short or Break)
73	Vehicle Speed Sensor Signal
77	Temperature Sensor - Air Intake
78	Temperature Sensor - Engine Coolant
81	Antitheft System Signal (DWA)
82	Intervention, Engine Drag Torque Control (MSR)
83	Intervention, Automatic Stability Control (ASC)
85	Air Condition Compressor (Belt Slip or Seizing)
100	Control Unit, Output Stage Ignition
200	Control Unit (RAM, ROM/EPROM)
201	Oxygen Sensor (Lambda) Control Feedback (Air or Fuel Leak Likely)
202	Fault Memory in Control Unit Fault
203	Ignition Circuit Monitor - No Primary Ignition Signal
204	Idle Speed Increase During MSR Operation (Stall Protect)
255	Control Unit Internal Fault

BMW DME/DDE DIAGNOSTIC FAULT CODES

U8 - DME 3.3 / 8 Cylinder	
M60 Engine	
Fault	**Malfunction**
0	Undefined Fault
1	Fuel Pump Relay (EKP)
2	Idle Actuator Closing Winding
3	Fuel Injector, #1 Cylinder
4	Fuel Injector, #4 Cylinder
5	Fuel Injector, #6 Cylinder
6	Fuel Injector Output Stage without Cylinder Assignment
7	Fuel Injector, #7 Cylinder
8	Fault Lamp (US Model only)
12	Oxygen Sensor #2
13	Oxygen Sensor #1
15	Ignition Circuit Monitoring
16	Crankshaft Pulse Generator
17	Camshaft Sensor
18	Fault to test storage - No actual fault
22	Ignition #7 Cylinder
23	Ignition #6 Cylinder
24	Ignition #4 Cylinder
25	Ignition #1 Cylinder
26	Control Unit Supply B+
29	Idle Actuator Opening Winding
31	Fuel Injector, #5 Cylinder
32	Fuel Injector, #8 Cylinder
33	Fuel Injector, #3 Cylinder
35	Fuel Injector, #2 Cylinder
36	Tank Ventilation
37	Oxygen-Sensor Heater #2
38	Oxygen-Sensor Heater #1
41	Air Mass Flow Sensor (HLM)
42	Road Speed Sensor
46	Free SG Output Stage
48	Air Conditioner Compressor Cutoff
49	Ignition, #2 Cylinder
50	Ignition, #3 Cylinder

BMW DME/DDE DIAGNOSTIC FAULT CODES

51	Ignition, #8 Cylinder
52	Ignition, #5 Cylinder
54	DME Control Unit Power Supply via Main Relay
55	Ignition Final Stage
62	Signal, Electronic Engine Power Control (EML)
63	Torque Convertor Lockup Clutch
64	Engagement in the Ignition Control Unit
65	Air Conditioner Compressor
66	Signal, Burglar Alarm System (DWA)
67	Knock Sensor Cylinder #4
68	Knock Sensor Cylinder #3
69	Knock Sensor Cylinder #2
70	Knock Sensor Cylinder #1
73	Throttle Valve Potentiometer
76	Idle CO Potentiometer
77	Temperature Sensor - Air Intake
78	Temperature Sensor - Engine Coolant
82	Intervention, Engine Drag Torque Control (MSR)
83	Intervention, Automatic Stability Control (ASC)
85	Air Conditioner Compressor Relay
100	Output Amplifier Stage - Group 1
101	Output Amplifier Stage - Group 2
200	DME control Unit
201	Oxygen Sensor Control #1
202	Fault Memory in Control Unit Fault
203	Oxygen Sensor Control #2
204	Idle Speed Increase During MSR Operation
205	Transmission Intervention during Gear-Shifts (EGS only)
206	Knock Regulation
210	CAN Interface, Trans. Intervention signal to the DME

U9 - DME 3.3.1 / 6-Cylinder	
M50 VANOS	
Fault	**Malfunction**
0	Undefined Fault
1	Fuel Pump Relay (EKP)
2	Idle-Actuator Closing Winding
3	Fuel Injector, #5 Cylinder
4	Fuel Injector, #6 Cylinder
5	Fuel Injector, #4 Cylinder
6	Fuel Injector output stage without cylinder assignment
7	VANOS Solenoid Valve
8	Fault Lamp (US Model Only)
12	Oxygen Sensor #2
13	Oxygen Sensor #1
15	Ignition-Circuit Monitoring
16	Crankshaft Pulse Generator
17	Camshaft Sensor
23	Ignition, #4 Cylinder
24	Ignition, #6 Cylinder
25	Ignition, #5 Cylinder
26	Control-Unit Supply B+
29	Idle-Actuator Opening Winding
31	Fuel Injector, #3 Cylinder
32	Fuel Injector, #2 Cylinder
33	Fuel Injector, #1 Cylinder
36	Tank Ventilation
37	Oxygen-Sensor Heater
41	Air-Mass Flow Sensor (HLM)
42	Vehicle Speed Sensor
48	Air-Conditioner Compressor Cutoff
50	Ignition, #1 Cylinder
51	Ignition, #2 Cylinder
52	Ignition, #3 Cylinder
54	DME Control-Unit Power Supply via Main Relay
57	Ignition Timing Intervention (signal from EGS)
62	Signal, Electronic Engine Power Control (EML)
66	Signal, Burglar Alarm System (DWA)
69	Knock Sensor 2
70	Knock Sensor 1
73	Throttle Valve Potentiometer
77	Intake Air Temp Sensor
78	Engine Temp Sensor (coolant)
82	Intervention, Engine-Drag-Torque Control (MSR)
83	Intervention, Automatic Stability Control (ASC)
100	Output Stage, Group 1

BMW DME/DDE DIAGNOSTIC FAULT CODES

101	Output Stage, Group 2
200	DME Control Unit (RAM, ROM/EPROM)
201	Oxygen Sensor Control
202	Fault Memory in Control Unit
204	Idle Speed Increase during MSR Operation
206	Knock Control Test Pulse

84	Camshaft Angle Pulse Generator
85	Intake Air Temperature Sensor
97	Fuel Evaporation Control Valve Jammed
98	Idle Actuator Jammed
99	Lambda Regulation Limit Exceeded
100	DME Control Unit Fault

U10 - DME MS40.0 / MS40.1

Fault	Malfunction
1	Ignition Fault : Cylinder 1
2	Ignition Fault : Cylinder 3
3	Ignition Fault : Cylinder 5
5	Fuel Injector Fault : Cylinder 6
6	Fuel Injector Fault : Cylinder 4
10	Air-Conditioner Compressor
12	Vehicle Speed Signal
14	Transmission Intervention
22	Fuel Injector Fault : Cylinder 3
23	Fuel Injector Fault : Cylinder 1
24	Air Conditioner Compressor Control
27	Idle Actuator
29	Ignition Fault : Cylinder 2
30	Ignition Fault : Cylinder 4
31	Ignition Fault : Cylinder 6
33	Fuel Injector Fault : Cylinder 5
49	Power Supply to DME Control Unit
50	Fuel Injector Fault : Cylinder 2
51	Evaporation Control Valve
52	Fuel Pump Relay (EKP)
53	Oxygen Sensor Heater
62	Ignition Signal Feedback
63	Knock Sensor Fault : Cylinder 4+5+6
64	Knock Sensor Fault : Cylinder 1+2+3
68	Hot Film Air Mass Meter
75	Oxygen Sensor Voltage
77	Throttle Potentiometer
79	Crankshaft Angle Pulse Generator
81	Engine Coolant Temperature Sensor

U11 - MS41.0 / MS41.1

M52, S50us/B32

Fault	Malfunction
1	Ignition Coil : Cylinder 2
2	Ignition Coil : Cylinder 4
3	Ignition Coil : Cylinder 6
5	Fuel Injector : Cylinder 2
6	Fuel Injector : Cylinder 1
8	Mass or Volume Air Flow Circuit, Range/Perf.
10	Engine Coolant Temperature Sensor Circuit
11	Fuel Tank Pressure Sensor - EVAP
12	Throttle Position Sensor
14	Intake Air Temperature Sensor
16	AC Compressor Pulse Width Signal (E-39 only)
18	EWS Signal not present or faulty
20	Malfunction Indicator Lamp (MIL) - USA Only
21	VANOS: electrical fault
22	Fuel Injector : Cylinder 3
23	Fuel Injector : Cylinder 6
24	Fuel Injector : Cylinder 4
25	Oxygen Sensor Heater : Bank 1 (Pre Cat. Conv.)
27	Idle Actuator : Closing Coil
29	Ignition Coil : Cylinder 1
30	Ignition Coil : Cylinder 3
31	Ignition Coil : Cylinder 5
33	Fuel Injector : Cylinder 5
35	Relay or Pump - Secondary air injection system
47	Temperature Sensor : Downstream of Pre-catalytic converter
50	Evaporation Control Valve - EVAP
51	Shut-off Valve : EVAP Activated Charcoal Filter

BMW DME/DDE DIAGNOSTIC FAULT CODES

52	Solenoid Valve : Exhaust Flap
53	Idle Actuator : Opening Coil
55	Oxygen Sensor Heater : Bank 2 (Pre Cat. Conv.)
56	Ignition Signal Feedback, Interruption at Shunt Resistor
57	Knock Sensor 1 : Bank 1 (Cyl. 1, 2 & 3)
59	Knock Sensor 2 : Bank 2 (Cyl. 4, 5 & 6)
61	Oxygen Sensor Heater : Bank 2 (Post Cat. Conv.)
62	Secondary Air Injection Switching Valve
65	Camshaft Position Sensor
68	Fuel Tank Purge Valve - EVAP
69	Fuel Pump Relay (EKP)
74	A/C-compressor relay
75	Oxygen Sensor Voltage : Bank 1 (Pre. Cat. Conv.)
76	Oxygen Sensor Voltage : Bank 2 (Pre. Cat. Conv.)
77	Oxygen Sensor Voltage : Bank 1 (Post Cat. Conv.)
78	Oxygen Sensor Voltage : Bank 2 (Post Cat. Conv.)
79	Oxygen Sensor Heater : Bank 1 (Post Cat. Conv.)
80	ABS/ASC Signal - Active too long
81	MSR Signal - Active too long : Raised idle speed
82	EML Signal - Active too long : Ignition-timing adjustment
83	Crankshaft Positin Sensor
100	DME Control Unit : Self-test Failed
190	EVAP: Reed Switch not closed - E39 MY98 only
191	EVAP: Reed Switch doesn''t open - E39 MY98 only
192	EVAP: Reed Switch doesn''t close - E39 MY98 only
193	EVAP: Clamped Tube Check - E39 MY98 only
194	EVAP: Large Leak detected - E39 MY98 only
195	EVAP: Small Leak detected - E39 MY98 only
196	EVAP: el. Valve LDP - E39 MY98 only
197	EVAP: Barometric Pressure Sensor - E39 MY98 only
200	O2 Sensor Inactive : Bank 1 (Pre. Cat. Conv.)
201	O2 Sensor Inactive : Bank 2 (Pre. Cat. Conv.)
202	Lambda Regulation (Fuel Trim) Limit Exceeded : Bank 1
203	Lambda Regulation (Fuel Trim) Limit Exceeded : Bank 2
204	Idle Control System, Idle Speed not plausible
209	EWS Content of Message
210	Ignition Feedback (ZSR) fault on more than 2 cylinders
211	Idle Actuator Mechanically Jammed

212	VANOS Mechanically Jammed - Bank 1
214	Vehicle Speed Signal
215	ASC/MSR/EML: signal not plausable
216	EGS Driving Position Signal - error
217	CAN Bus Error : EGS 1 signal timed out.
218	CAN module : Warning level reached
219	CAN module : Bus off-line.
221	ECU Diagnostic
222	Coolant Temperature too low to permit Closed Loop Operation.
225	Catalytic Convertor Conversion : Cylinder 1-3 (Bank 1)
227	Mixture Deviation (Fuel Trim) - Bank 1 (Cylinder 1-3)
228	Mixture Deviation (Fuel Trim) - Bank 2 (Cylinder 4-6)
229	Oxygen Sensor Bank 1 (Pre catalytic convertor) - Response time too slow
230	Oxygen Sensor Bank 2 (Pre catalytic convertor) - Response time too slow
231	Oxygen Sensor Bank 1 (Post catalytic convertor) - Response time too slow
232	Oxygen Sensor Bank 2 (Post catalytic convertor) - Response time too slow
233	Catalytic Convertor Efficiency Bank 1 - Below threshold
234	Catalytic Convertor Efficiency Bank 2 - Below threshold
235	Oxygen Sensor Heater Bank 1 (Post catalytic convertor) - Insufficient Heating.
236	Oxygen Sensor Heater Bank 2 (Post catalytic convertor) - Insufficient Heating.
238	Misfire Detected : Cylinder 1
239	Misfire Detected : Cylinder 2
240	Misfire Detected : Cylinder 3
241	Misfire Detected : Cylinder 4
242	Misfire Detected : Cylinder 5
243	Misfire Detected : Cylinder 6
244	Crankshaft Segment Timing Fault - Flywheel adaption
245	Secondary Air System Bank 1 - Flow too low
246	Secondary Air System Bank 2 - Flow too low
248	Pre-Catalytic Convertor Efficiency Bank 1
249	Pre-Catalytic Convertor Efficiency Bank 2
250	Tank Venting Valve - Function Fault
251	Tank Ventilation System - Small leak detected

BMW DME/DDE DIAGNOSTIC FAULT CODES

252	Tank Ventilation System - Suction Fault, Incorrect purge flow
253	Shut-off Valve - Jammed shut
254	Tank Ventilation System - Large Volume Air Leak (Gas cap off)
255	Tank Venting Valve - Jammed Open
333	DME Control Unit : Self-test Failed

U11 - DME 5.2	
M44, M62, M73	
Fault	**Description**
1	EVAP: LDP Valve - Final Stage - M62/M73 MY98 only
2	Running losses valve - final stage - M62/M73 MY98 only
3	EVAP: Reed Switch not closed, doesn''t open or doesn''t close - M62/M73 MY98 only
4	O2-Sensor-Heater, Post Cat.(Bank2), Insufficient Heating.
5	O2 Sensor Heater, Pre Cat.(Bank2), insufficient.
6	CAN-Timeout Instrument Cluster - M62/M73 MY98 only
7	Engine coolant temperature, radiator outlet - M62/M73 MY98 only
8	Misfire with low fuel detected
10	O2 Sensor Pre Cat. (Bank1)
12	O2 Sensor Post Cat.(Bank1)
13	O2 Sensor Heater Circuit Pre Cat (Bank1)
14	O2-Sensor-Heater, Post Cat. (Bank1), insufficient.
15	O2 Sensor Pre Cat. (Bank1), Slow Response time
16	O2-Sensor Pre Cat (Bank 1)
17	O2 Sensor Post Cat. (Bank1), Slow Response time
18	O2 Sensor Pre Cat. (Bank2)
19	CAN Signal, Timeout EKAT - M73LEV MY99 only
20	O2 Sensor Post Cat. (Bank2)
21	O2 Sensor Pre Cat. (Bank2) Slow Response time
22	O2-Sensor Pre Cat (Bank 2)
23	O2 Sensor Post Cat. (Bank2) Slow Response time
24	AC Compressor Function
26	Fuel Trim (Bank1), Multiplicative
27	Fuel Adaptation Additive with airleak (Bank 1)
28	Fuel Trim (Bank1), Additive
29	air containment valve for air control of shrouded fuel injector (Bank 1) - M62/M73 MY98 only
30	EKAT-Status 7 - power switch control - M73LEV MY99 only
32	Idle Control Valve stuck mechanically
33	EKAT-Status 8 - EKAT-ECU - M73LEV MY99 only
34	Fuel Trim (Bank2), Multiplicative
35	Fuel Adaptation Additive with airleak (Bank 2)
36	Fuel Trim (Bank2), Additive
39	EWS Content of Message
40	Catalyst Efficiency Bank 1, Below Threshold
42	Vehicle Speed Sensor 1995-97
42	EKAT-Status 1 - Disconnection of heater for Catalyst 1 - M73LEV MY99 only
43	EKAT-Status 2 - switch on operating condition catalyst 1 - M73LEV MY99 only
44	EKAT-Status 3 - power switch Catalyst 1 - M73LEV MY99 only
45	Catalyst Efficiency Bank 2, Below Threshold
46	EKAT-Status 4 - Disconnection heater for Catalyst 2 - M73LEV MY99 only
47	EKAT-Status 5 - switch on operating condition catalyst 2 - M73LEV MY99 only
48	EKAT-Status 6 - power switch catalyst 2 - M73LEV MY99 only
50	Cylinder 1 Misfire detected
51	Cylinder 2 Misfire detected
52	Cylinder 3 Misfire detected
53	Cylinder 4 Misfire detected
54	Cylinder 5 Misfire detected
55	Cylinder 6 Misfire detected
56	Cylinder 7 Misfire detected
57	Cylinder 8 Misfire detected
62	Random/Multiple Cylinder, Misfire detected
63	Cylinder 1 Misfire detected, catalyst damaging
64	Cylinder 2 Misfire detected, catalyst damaging
65	Cylinder 3 Misfire detected, catalyst damaging
66	Cylinder 4 Misfire detected, catalyst damaging
67	Cylinder 5 Misfire detected, catalyst damaging
68	Cylinder 6 Misfire detected, catalyst damaging
69	Cylinder 7 Misfire detected, catalyst damaging

BMW DME/DDE DIAGNOSTIC FAULT CODES

70	Cylinder 8 Misfire detected, catalyst damaging
71	Cylinder 9 Misfire detected, catalyst damaging
72	Cylinder 10 Misfire detected, catalyst damaging
73	Cylinder 11 Misfire detected, catalyst damaging
74	Cylinder 12 Misfire detected, catalyst damaging
75	Random/Multiple Cylinder, Misfire detected
77	air containment valve for air control of shrouded fuel injector (Bank 2) - M62/M73 MY98 only
78	Crankshaft Position Sensor (too many teeth)
80	Secondary Air Control
81	EKAT-Status 9 - sensor check temperature sensor (1) in battery - M73LEV MY99 only
82	EKAT-Status 10 - sensor check temperature sensor (2) in battery - M73LEV MY99 only
83	EKAT-Status 11 - plausibility check of temperature sensor in battery - M73LEV MY99 only
84	Secondary Air Pump Final stage
84	CDTSLPE: secondary air pump - final stage - M62/M73 MY98 only
85	Secondary Air Valve Final stage
91	EVAP System, Purge Control Valve Circuit (Bank 2) - M62/M73 MY98 only
93	EVAP Emission Control System
94	EVAP System Large Leak
97	EVAP System Small Leak detected
98	EVAP System, Purge Control Valve Circuit
100	Transmission/ coolant heat exchanger - M73LEV only
101	Internal Control Module, RAM
102	Internal Control Module, Keep Alive Memory
103	Internal Control Module, Memory check sum
104	Internal Control Module, RAM
105	Internal Control Module, EEPROM : M62/M73 MY98 only
107	Battery Voltage
108	Battery Voltage Disconnected
111	Crankshaft Position Sensor, Malfunction
112	Camshaft Position Sensor Circuit, Malfunction
115	Mass or Volume Air Flow Circuit, Malfunction
117	Throttle Position Sensor
120	Vehicle Speed Sensor
121	Load Calculation Cross Check, Range/Perf.

123	Engine Coolant Temp, Circuit Range/Perf.
124	Intake Air Temperature Range/Performance
130	Swapped O2 Sensors Pre Cat.
133	DME Bank identification input : M73 MY98 only
135	Transmission: Torque Reduction
138	AC Compressor Torque Reduction
139	Electric Thermostat Control, final stage
140	Torque imbalance - M73 MY98 only
141	ASC Signal, Plausibility check
143	MSR Signal
144	ASC Signal, Plausibility Torque Reduction
147	Electric Thermostat Control, Range/Performance.
148	EWS Signal not present or faulty
150	Injector Circuit Cylinder 1, Malfunction
151	Injector Circuit Cylinder 2, Malfunction
152	Injector Circuit Cylinder 3, Malfunction
153	Injector Circuit Cylinder 4, Malfunction
154	Injector Circuit Cylinder 5, Malfunction
155	Injector Circuit Cylinder 6, Malfunction
156	Injector Circuit Cylinder 7, Malfunction
157	Injector Circuit Cylinder 8, Malfunction
158	Injector Circuit Cylinder 9, Malfunction
159	Injector Circuit Cylinder 10, Malfunction
160	Injector Circuit Cylinder 11, Malfunction
161	Injector Circuit Cylinder 12, Malfunction
163	Electric Fuel Pump Relay, Final stage (Bank 2) : M73 MY98 only
164	EVAP: Barometric Tank Pressure Sensor : M62/M73 MY98 only
165	Check Engine Light, Final stage Malfunction
167	Electric Fuel Pump Relay, Final stage
168	Idle Control Valve Opening Coil, Malfunction
169	Idle Control Valve Closing Coil, Malfunction
170	AC Compressor Control
175	DISA, Range/Performance
179	AC Compressor Control (Bank 2) : M73 MY98 only
183	EVAP: Large Leak detected : M62/M73 MY98 only
184	EVAP: pinched hose check : M62/M73 MY98 only
203	Ignition Feedback (bank failed) : M62/M73 MY98 only

BMW DME/DDE DIAGNOSTIC FAULT CODES

204	Rolling code storage : M62/M73 MY98 only
208	Secondary Air Induction System (Bank 2)
210	Knock Sensor 1 Circuit, (Bank 1)
211	Knock Sensor 2 Circuit, (Bank 2)
212	Knock Sensor Signal 3
213	Knock Sensor Signal 4
214	CAN - Index Verification : M62/M73 MY98 only
215	CAN - Signal, Timeout Left / Right DME : M62/M73 MY98 only
216	CAN Signal, Timeout ASC
217	CAN-Signal, Timeout EML : M62/M73 MY98 only
220	Knock control, Test pulse
222	Knock control, Test pulse (Bank2)
225	EKAT-Status 12 - temperature sensor - plausibility power switch : M73LEV MY99 only
226	EKAT-Status 13 - temperature sensor - plausibility power switch - M73LEV MY99 only
227	EKAT-Status 14 - plausibility check of battery disconnection switch - M73LEV MY99 only
228	Automatic Start, Output (Bank 2) - M62/M73 MY98 only
233	Automatic Start, Output - M62/M73 MY98 only
234	Automatic Start, Input
236	CAN Time Out (EGS)
237	Automatic Start, Output
253	Coolant Fan, Final stage

DDE 1	
Digital Diesel Electronics Version 1	
Fault	**Malfunction**
1	RPM Transmitter
2	Temperature Sensor - Fuel
3	Temperature Sensor - Engine Coolant
4	Pedal Position Transmitter
5	Boost Pressure Sensor
6	Throttle Position Potentiometer
7	Boost Pressure Regulator
8	Air Mass Position
10	Speed Regulator
11	Compute Coupling
12	Temperature Sensor - Air
13	RPM Data Line
14	Start of Injection Transmitter
15	Exhaust Gas Recirculation
16	Start of Injection Regulator
17	Brake Test Switch
36	Water Level Sensor

DDE 2	
Digital Diesel Electronics Version 2	
Fault	**Malfunction**
0	Undefined Fault
1	Air Mass Sensor
3	Electronic Turn off Unit
5	Start of Injection Transmitter
6	Glow Period Regulator
10	Start of Injection Regulator
15	Voltage Supply DDE Control Unit
20	Speed Regulator
21	Throttle Position Potentiometer
28	Clutch Switch
29	Speed Signal
31	Brake Switch
35	Temperature Sensor - Fuel
36	Water in Fuel Sensor
37	Pedal Position Transmitter
41	Glow Period Regulator
45	Theft Protection System
47	RPM Transmitter
52	Temperature Sensor - Charge Air
53	Temperature Sensor - Engine Coolant
54	Boost Pressure Sensor
56	Internal Control Unit Fault
58	Disturbance of the High-level Stage
59	Deviation of the Boost Pressure

BMW DME/DDE DIAGNOSTIC FAULT CODES

SECTION 3 Airbag (SRS) Fault Code Lists

***** BEFORE STARTING TO WORK ON THE SRS SYSTEM ***** DISCONNECT THE BATTERY

U1 (SRS 1 1988-91)	
CODE	**DESCRIPTION OF MALFUNCTION**
1	**AIRBAG IGNITION CAPACITOR DEFECT**. - Please replace the Ignition Capacitor. The airbag system will not function if this is not corrected.
2	**DIAGNOSTIC UNIT MALFUNCTION** - Examine all faults and delete them from the fault memory. If this fault recurs you must replace the SRS Control Unit.
3	**AIRBAG SUPPLY WIRE- DRIVERS SIDE -**Resistance Too High - Please check the wire resistance. If necessary replace the cable set.
4	**AIRBAG SUPPLY WIRE - DRIVER SIDE - POWER SUPPLY DEFECT** - Please check the wire resistance. If necessary replace the cable set.
5	**SEAT BELT TENSIONER SUPPLY WIRE RESISTANCE TOO HIGH** - Please check the wire resistance. If necessary replace the cable set.
6	**SEAT BELT TENSIONER SUPPLY WIRE - POWER SUPPLY DEFECT** - Check the sensor wire for breaks or shorts. Check the connectors for corrosion and breakage.
7	**CRASH SENSOR TRIGGERED - FRONT LEFT** - Check the sensor, wires and connections for breaks, shorts or defects Delete faults in memory, drive vehicle over 15 mph, then rerun diagnosis.
8	**CRASH SENSOR FAULT - FRONT LEFT** - Check the sensor, wires and connections for breaks, shorts or defects Delete faults in memory, drive vehicle over 15 mph, then rerun diagnosis. Replace the Crash Sensor if the fault recurs.
9	**CRASH SENSOR GROUND CONTACT FAULT - FRONT LEFT** - Check the sensor ground contact. Check the battery ground contacts. Delete faults in memory, drive vehicle over 15 mph, then rerun diagnosis. Replace the Crash Sensor if the fault recurs.
10	**CRASH SENSOR TRIGGERED - FRONT RIGHT** - Check the sensor, wires and connections for breaks, shorts or defects. Delete faults in memory, drive vehicle over 15 mph, then rerun diagnosis.
11	**CRASH SENSOR FAULT - FRONT RIGHT** - Check the sensor, wires and connections for breaks, shorts or defects. Delete faults in memory, drive vehicle over 15 mph, then rerun diagnosis. Replace the Crash Sensor if the fault recurs.
12	**CRASH SENSOR GROUND CONTACT FAULT - FRONT RIGHT** - Check the sensor ground contact. Check the battery ground contacts. Delete faults in memory, drive vehicle over 15 mph, then rerun diagnosis. Replace the Crash Sensor if the fault recurs.
13	**CRASH SENSOR SUPPLY RESISTANCE TOO HIGH - FRONT LEFT** - Check the sensor, wires and connections for breaks, shorts or defects. Delete faults in memory, drive vehicle over 15 mph, then rerun diagnosis.

AIRBAG FAULT CODES

U1 (SRS 1 1988-91)	
CODE	**DESCRIPTION OF MALFUNCTION**
14	**CRASH SENSOR SUPPLY WIRE FAULT - FRONT LEFT** - Check the sensor, wires and connections for breaks, shorts or defects Delete faults in memory, drive vehicle over 15 mph, then rerun diagnosis.
15	**CRASH SENSOR SUPPLY RESISTANCE TOO HIGH - FRONT RIGHT** - Check the sensor, wires and connections for breaks, shorts or defects. Delete faults in memory, drive vehicle over 15 mph, then rerun diagnosis.
16	**CRASH SENSOR SUPPLY WIRE FAULT - FRONT LEFT** - Check the sensor, wires and connections for breaks, shorts or defects Delete faults in memory, drive vehicle over 15 mph, then rerun diagnosis.
17	**WARNING LAMP SHORT CIRCUIT** - A short-circuit exists in the instrument panel or in the supple wire from the control unit to the instrument panel. Please check whether the SRS warning light either lights up permanently or not at all.
18	**WARNING LAMP DEFECT** - Please check the airbag signal bulb in the instrument panel and replace it if necessary.
19	**CRASH DETECTION ACCUMULATOR ACTIVATED** - The detection accumulator is activated by the operation of the SRS system. *** ATTENTION! THIS ACCUMULATOR SHOULD ONLY BE DIAGNOSED AND RESET BY THE BMW DEALER.**
20	**SRS CONTROL UNIT DEFECT - DEALER REPLACEMENT ONLY** -Delete fault stored in memory. Operate vehicle for 5 minutes. If the fault re-occurs, the SRS Control Unit will need replacement.
21	**AIRBAG SUPPLY WIRE RESISTANCE TOO HIGH - PASSENGER SIDE** - Please check the wire resistance. If necessary replace the cable set.
22	**AIRBAG SUPPLY WIRE - DRIVER SIDE WIRE DEFECT** - Please check the wire resistance. If necessary replace the cable set.

AIRBAG FAULT CODES

U2 (SRS 2 1991-93)	
CODE	**DESCRIPTION OF MALFUNCTION**
1	**FRONT SENSOR TRIGGERED - ONE TIME**
2	**FRONT SENSOR TRIGGERED - MULTIPLE TIMES**
5	**FRONT SENSOR TRIGGERED - PERMANENT**
13	**TWO FIRING CIRCUITS ARE SHORT CIRCUITED**
19	**FRONT SENSOR SUPPLY VOLTAGE - LEFT FAULT**
20	**FRONT SENSOR SUPPLY VOLTAGE - RIGHT FAULT**
27	**PRIMARY AIRBAG FIRING CIRCUIT IS SHORTED TO + BATTERY -** Check wiring for short.
33	**PRIMARY AIRBAG FIRING CIRCUIT IS SHORTED GROUND -** Check wiring for shorts or breaks.
42	**AIRBAG IGNITION CIRCUIT - DRIVERS SIDE -** Resistance too low
43	**SEATBELT PRE-TENSIONING SYSTEM** - **PASSENGER AIRBAG** - Resistance in circuit 2 is too low.
44	**PASSENGER AIRBAG** - Resistance in circuit 3 (or spare resistor) is too low.
45	**AIRBAG IGNITION CIRCUIT - DRIVERS SIDE** - Resistance in supply wire is too high
46	**SEATBELT PRE-TENSIONING SYSTEM** - **PASSENGER AIRBAG** - Resistance in circuit 2 is too high.
47	**PASSENGER AIRBAG** - Resistance in circuit 3 (for spare resistance) is too high.
49	**SRS WARNING LAMP FAULTY**
50	**SRS CONTROL UNIT DEFECT** - DEALER REPLACEMENT ONLY -Delete fault stored in memory. Operate vehicle for 5 minutes. If the fault re-occurs, the SRS Control Unit will need replacement.
52	**CRASH ACCUMULATOR TRIGGERED** - DEALER REPLACEMENT ONLY

AIRBAG FAULT CODES

U3 (SRS 3 1993-98)	
CODE	**DESCRIPTION OF MALFUNCTION**
1	**SRS CONTROL UNIT DEFECT - DEALER REPLACEMENT ONLY -** Delete fault stored in memory. Operate vehicle for 5 minutes. If the fault recurs, the SRS Control Unit will need replacement. This code is also associated with low battery voltage.
2	**AIRBAG IGNITION CIRCUIT - DRIVERS SIDE - DEFECTIVE**
3	**SEATBELT PRE-TENSIONING SYSTEM FIRING CIRCUIT - DRIVER SIDE**
4	**SEATBELT PRE-TENSIONING SYSTEM FIRING CIRCUIT - PASSENGER SIDE**
5	**AIRBAG IGNITION CIRCUIT - PASSENGER SIDE - DEFECTIVE**
6-7	**SRS CONTROL UNIT INTERNAL DEFECT** (See fault code 76-77.**)**
12-16	**SRS CONTROL UNIT INTERNAL DEFECT** (See fault code 76-77.**)**
17	**POWER SUPPLY -** Check battery and charging system.
18	**SRS CONTROL UNIT INTERNAL DEFECT** (See fault code 76-77.**)**
19	**SRS WARNING LAMP FAULT**
20	**SEAT OCCUPANCY DETECTION CIRCUIT - PASSENGER SIDE**
21	**PRESSURE SENSOR - DRIVER SIDE**
22	**PRESSURE SENSOR - PASSENGER SIDE**
23	**SRS CONTROL UNIT INTERNAL DEFECT** (See fault code 76-77.**)**
24	**SEAT BELT LOCK - DRIVER SIDE**
25	**SEAT BELT LOCK - PASSENGER SIDE**
48-63	**SRS CONTROL UNIT INTERNAL DEFECT** (See fault code 76-77.**)**
65	**SRS CONTROL UNIT INTERNAL DEFECT** (See fault code 76-77.**)**
67-72	**SRS CONTROL UNIT INTERNAL DEFECT** (See fault code 76-77.**)**.
73	**TWO FIRING CIRCUITS ARE SHORT CIRCUITED**
76-77	**SRS CONTROL UNIT INTERNAL DEFECT - DEALER REPLACEMENT ONLY** - Delete fault stored in memory. Operate vehicle for 5 minutes. If the fault re-occurs, the SRS Control Unit will need replacement. This code is also associated with low battery voltage.

*Please note that some E24 and E30 vehicles do not have the SRS integrated into the diagnostic plug. Please refer to BMW Technical Service Bulletin # 04 29 91 (3446) for information on reading and resetting these vehicles.

If you have any questions, please call Baum Tools Technical Services at
1-415-566-9229

or send us E-mail at danabaum@crl.com
or visit our web site at
http://www.baumtools.com

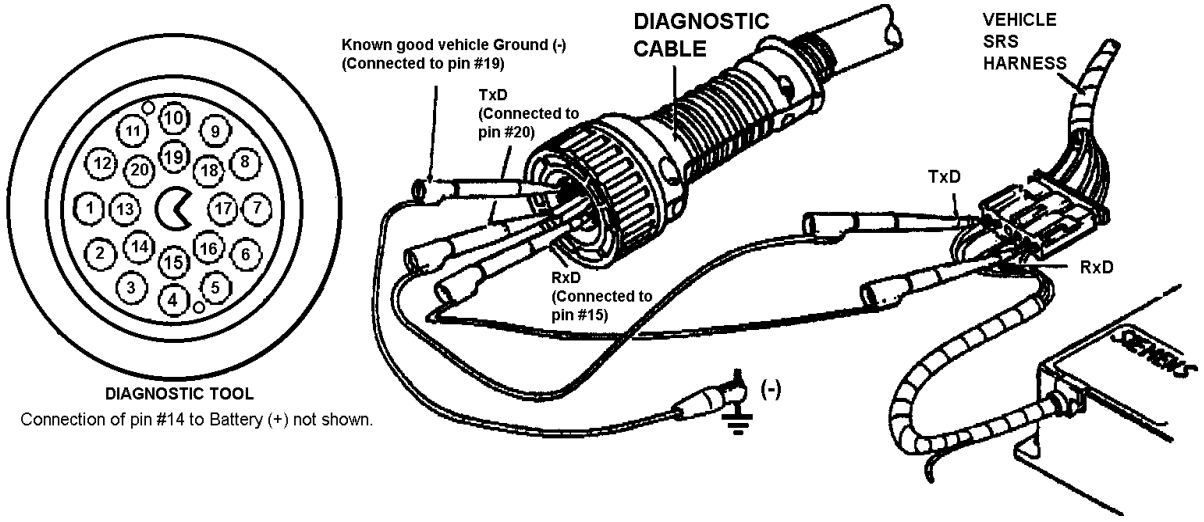
**** Special Notes Regarding SRS Systems on E24 and E30 Chassis

(For use with Baum Tools CS1000, Carsoft Software or BMW MODIC.)

On some E24 and E30 model BMWs, the RxD and TxD lines from the SRS control unit are not integrated into the 20 pin diagnostic socket found under the hood. In order to diagnose and reset SRS lights on these vehicles, you must tap directly into the harness coming from the SRS control unit.

Chassis	Diagnostic Tool Plug Pin	SRS Control Unit Connector
E24	Pin #14 Battery (+)	Battery (+) Terminal
	Pin #15 (RxD)	Pin #6 (WT/YL)
	Pin #19 Ground	Good Vehicle Ground
	Pin #20 (TxD)	Pin #2 (WT/VI)
E30	Pin #14 Battery (+)	Battery (+) Terminal
	Pin #15 (RxD)	Pin #6 (WT/YL)
	Pin #19 Ground	Good Vehicle Ground
	Pin #20 (TxD)	Pin #2 (WT/VI)
E30 1992 Convertible	Pin #14 Battery (+)	Battery (+) Terminal
	Pin #15 (RxD)	Pin #6 (WT/BLK)
	Pin #19 Ground	Good Vehicle Ground
	Pin #20 (TxD)	Pin #7 (WT/VI)

If using SRS reset tool #6213, 6214 or 621300 substitute pin #16 for pin #20.



SECTION 4 Transmission (EGS) Fault Code Lists

4HP22/4HP24 (EARLY MODEL THROUGH 10/89) - EGS 1.XX				
U1 CODE	**DEFINITION OF FAULT**	**EGS PIN OUT**	**TRANS. CABLE (8 PIN)**	**POSSIBLE CAUSES**
01	Transmission relay			Relay not switching
02	EPROM checksum error			Damaged EPROM Program in memory faulty Reinitialize power to EGS control unit Replace control unit
03	Kickdown switch	2		Short to ground
04	Program switch	2		Break in wiring Short in wiring Defective switch
05	Throttle valve signal or accelerator pedal position - (EML pin 32)	7 9		Break in wiring Short in wiring Defective switch
06	Solenoid valve 1	16	5	Break in wiring Short in wiring Defective valve winding
07	Solenoid valve 2	17	6	Break in wiring Short in wiring Defective valve winding
08	Solenoid valves 1 & 2	16, 17	5, 6	Short in wiring Defective valve winding
09	Solenoid valve - Reverse lock	20	2	Break in wiring Short in wiring Defective valve winding
10	Solenoid valve 1 - Reverse lock	16, 20	5, 2	Short in wiring Defective valve winding
11	Solenoid valve 2 - Reverse lock	17, 20	6, 2	Short in wiring Defective valve winding
12	Solenoid valves	25	7	Short in wiring Defective valve winding
13	Solenoid valve - Converter lockup clutch	25	7	Break in wiring Short in wiring Defective valve winding
14	Solenoid valve 1 - Converter lockup clutch	16, 25	5, 7	Short in wiring Defective valve winding
15	Solenoid valve 2 - Converter lockup clutch	17, 25	6, 7	Short in wiring Defective valve winding
16	Solenoid valves - Converter lockup clutch	20	2	Short in wiring Defective valve winding
17	Reverse lock solenoid valve - Converter lockup clutch	20, 25	2, 7	Short in wiring Defective valve winding
19	Solenoid valve - MV2	17	6	Short in wiring Defective valve winding
18	Solenoid valve - Mv1	16	5	Short in wiring Defective valve winding

4HP22/4HP24 (EARLY MODEL THROUGH 10/89) - EGS 1.XX

U1 CODE	DEFINITION OF FAULT	EGS PIN OUT	TRANS. CABLE (8 PIN)	POSSIBLE CAUSES
20	Power supply - MV's and Pressure regulators	1	8	Short in wiring Defective valve winding
21	Engine speed sensor signal	21		Engine speed too high > 6800 rpm
22	Pressure regulator	22	1	Break in wiring Short in wiring Defective valve winding
23	Ignition timing intervention	24		Break in wiring Short to ground
24	Speed sensor n-ab - Downshift prevention	8, 27	3, 4	Break or short in wiring from control unit pin 8 to speed sensor Engine speed sensor defective
25	Engine over-rev lock			Engine speed exceeds output speed
26	KVA signal (ti)	11		Fuel consumption indicator (KVA signal)
27	Speed sensor n-ab			Engine speed sensor or torque converter or stall speed exceeded
28	Breakdown display			Transmission failure detected
29	Incorrect checksum in EGS program memory			Damaged EPROM Program in memory faulty Reinitialize power to EGS control unit Replace control unit
30	Battery voltage			Battery voltage too low >9 volts Check battery Check charging system
31	Shift lever position	28		
200	Kickdown switch not working			
201	Kickdown switch fault			
202	Sport car transmission feature not selectable			
203	Manual shift program feature not selectable			
204	Program cannot be converted	6		
205	No engine deceleration detected	24		
206	False code set			
207	No EML detected			
300	Diagnostic circuit fault			
301	Voltage to control			No voltage to EGS control unit Check wiring harness
302	Shift lever position sensor			Break in wiring Short in wiring Defective switch
303	Shift lever position sensor signal			Break in wiring Short in wiring Defective switch

4HP22, 4HP24 (LATE MODEL 11/89 AND NEWER)- EGS 1.XX				
U1/U8 CODE	**DEFINITION OF FAULT**	**EGS PIN OUT**	**TRANS. CABLE (8 PIN)**	**POSSIBLE CAUSES**
01	Transmission relay			Relay in EGS not switching
02	EPROM checksum error			Damaged EPROM Program in memory faulty Reinitialize power to EGS control unit Replace control unit
03	Kickdown switch	2		Short to ground
04	Program switch E=pin 14, M=pin 15, S=pin 4			Break in wiring Short in wiring Defective switch
05	Throttle valve signal or accelerator pedal position - (EML pin 32)	7, 9		Break in wiring Short in wiring Defective switch
06	Solenoid valve 1	16	5	Break in wiring Short in wiring Defective valve winding
07	Solenoid valve 2	17	6	Break in wiring Short in wiring Defective valve winding
08	Solenoid valves 1 & 2	16, 17	5, 6	Short in wiring Defective valve winding
09	Solenoid valve -Park/neutral lock	20	2	Break in wiring Short in wiring Defective valve winding
10	Solenoid valve 1 - Park/neutral lock	16, 20	5, 2	Short in wiring Defective valve winding
11	Solenoid valve 2 - Park/neutral lock	17, 20	6, 2	Short in wiring Defective valve winding
12	Solenoid valves	25	7	Short in wiring Defective valve winding
13	Solenoid valve - Converter lockup clutch	25	7	Break in wiring Short in wiring Defective valve winding
14	Solenoid valve 1 - Converter lockup clutch	16, 25	5, 7	Short in wiring Defective valve winding
15	Solenoid valve 2 - Converter lockup clutch	17, 25	6, 7	Short in wiring Defective valve winding
16	Solenoid valves - Converter lockup clutch	20	2	Short in wiring Defective valve winding
17	Reverse lock solenoid valve - Converter lockup clutch	20, 25	2, 7	Short in wiring Defective valve winding
19	Solenoid valve - Magnetic valve 2	17	6	Short in wiring Defective valve winding
18	Solenoid valve - Magnetic valve 1	16	5	Short in wiring Defective valve winding
20	Power supply - Solenoid valves (MV's) and Pressure regulators	1	8	Break in wiring Short in wiring Defective valve winding
21	Engine speed sensor signal	21		Engine speed too high > 6800 rpm
22	Pressure regulator	22	1	Break in wiring Short in wiring Defective valve winding

4HP22, 4HP24 (LATE MODEL 11/89 AND NEWER)- EGS 1.XX				
U1/U8 CODE	**DEFINITION OF FAULT**	**EGS PIN OUT**	**TRANS. CABLE (8 PIN)**	**POSSIBLE CAUSES**
23	Ignition timing intervention	24		Break in wiring Short to ground
24	Speed sensor n-ab - Downshift prevention	8, 27	3. 4	Break or short in wiring from control unit pin 8 to speed sensor Engine speed sensor defective Engine speed too high for intended gearshift
25	Engine over-rev lock			Engine speed exceeds output speed
26	KVA signal (ti)	11		Fuel consumption indicator (KVA signal)
27	Speed sensor n-ab	8, 27	3, 4	Engine speed sensor Torque convertor Stall speed exceeded
28	Breakdown display			Transmission failure detected
29	Incorrect checksum in EGS program memory			Damaged EPROM Program in memory faulty Reinitialize power to EGS control unit Replace control unit
30	Battery voltage			Low battery voltage Check battery and charging system
31	Shift lever position	28		Break in wiring Short in wiring Short in sensor
200	Kickdown switch not working			
201	Kickdown switch fault			
202	Sport car transmission feature not selectable			
203	Manual shift program feature not selectable			
204	Program cannot be converted	6		
205	No engine deceleration detected	24		
206	False code set			
207	No EML detected			
300	Diagnostic circuit fault			
301	Voltage to control			No voltage to EGS control unit Check wiring harness
302	Shift lever position sensor			
303	Shift lever position sensor signal			Break in wiring Short in wiring Defective switch

4HP24 - EGS 2.28

U2 CODE	DEFINITION OF FAULT	EGS PIN OUT	POSSIBLE CAUSES
01	Battery voltage +	1	Battery voltage too low >9 volts Check battery Check charging system
02	Output speed sensor (tr)	2, 28	Anomalous signal Not normal signal Signal not in allowable range
03	Engine speed signal	3	Break in wiring Short in wiring Engine speed too high >6800 rpm
05	Solenoid valve 1	5	Break in wiring Short in wiring Defective valve winding
06	Pressure actuator	6	Break in wiring Short in wiring
(11)	Wheel speed - rear left	11	Anomalous signal Not normal signal Signal not in allowable range
(12)	Wheel Speed - Rear Right	12	Anomalous signal Not normal signal Signal not in allowable range
13	Solenoid - Park/neutral Lock	13	Break in wiring Short in wiring Defective valve winding
14	Selector lever position L2	14	Vehicle accelerated while shift lever in park or neutral position Engine was started and the EGS control has not detected park or neutral position signal
19	Power Supply - Solenoid Valves and Eds's	19	Break in wiring Short in wiring Defective valve winding
21	Load signal (KVA signal)	21	Break in wiring Short in wiring
24	Solenoid valve 2	2	Break in wiring Short in wiring Defective valve winding
29	Shift Lever Position L3/l4	33, 39	Break in wiring Short in wiring
(30)	Wheel Speed - Front Right	30	Anomalous signal Not normal signal Signal not in allowable range
32	Engine Intervention	32	Break in wiring Short in wiring
39	Continuous Voltage +	39	Anomalous signal Not normal signal Signal not in allowable range
41	KD switch	41	Short to ground
42	Solenoid Valve - Converter Lockup Clutch	42	Break in wiring Short in wiring Defective valve winding
43	Program Selector Switch	43	Anomalous signal Break in wiring Short in wiring
47	Accelerator Pedal Position	47	Break in wiring Short in wiring

4HP24 - EGS 2.28			
U2 CODE	**DEFINITION OF FAULT**	**EGS PIN OUT**	**POSSIBLE CAUSES**
(48)	Wheel Speed - Front Left	48	Anomalous signal Not normal signal Signal not in allowable range
50	Shift Lever Position I1	50	Break in wiring Short in wiring
100	EPROM checksum		Damaged EPROM Program in memory faulty Reinitialize power to EGS control unit Replace control unit
101	Incorrect Checksum in Program		Damaged EPROM Program in memory faulty Reinitialize power to EGS control unit Replace control unit
102	Relay - EGS Control Unit		Relay in EGS not switching in time
103	Wheel Speed Not Plausible		Anomalous signal Not normal signal Signal not in allowable range
104	Stall Speed Monitoring		Anomalous signal Not normal signal Signal not in allowable range
105	Wheel Speed - Lateral Slip		Lateral slip for longer than 2.5 minutes Wheels out of alignment Suspension not level You've been racing on a circular track

A4S 310R (THM-R1), A4S 270R (THM-R1) - EGS 4.XX

U4 CODE	DEFINITION OF FAULT	EGS PIN OUT	POSSIBLE CAUSES
01	Solenoid Parking/neutral lock		Break in wiring Short in wiring Defective valve winding
02	Program SWITCH E=pin 2, M=pin 31, S=pin 34		Break in wiring Short in wiring Defective switch
04	Engine Intervention	4	Break in wiring Short in wiring
09	KVA Signal (ti)	9	Break in wiring Short in wiring
11	Engine Speed Signal (n-mot)	11	Break in wiring Short in wiring
20	Transmission rotation speed signal (n-ab) - Stall speed signal	14, 20	No signal Anomalous engine speed signal
22	Transmission fluid temperature sensor	17, 22	Transmission temperature too high (>165c)
23	Shift Lever Position	26	Break in wiring Short in wiring Short in sensor
28	Battery Voltage + (Terminal 30)	28	Break in wiring Check battery contacts and wiring integrity
30	Kickdown Switch	30	Short to ground
35	Stop Light Switch	35	Break in wiring
37	Battery voltage +	37	Voltage out of range
38	Solenoid valve - Converter lockup clutch	38	Break in wiring Short in wiring Defective valve winding
39	Stop light switch	39	Break in wiring
40	Pressure regulator	40, 41	Break in wiring Short in wiring Defective valve winding
43	Solenoid valve 2	43	Break in wiring Short in wiring Defective valve winding
45	Solenoid valve - Band	45	Break in wiring Short in wiring Defective valve winding
48	Solenoid valve 1	48	Break in wiring Short in wiring Defective valve winding
54	Ground - Solenoid valves	54	Break in wiring Short in wiring Defective valve winding
55	Throttle valve signal (DKT)	55	Anomalous throttle valve signal Break in wiring Short in wiring
100	Speed monitoring		Speed ratio n-ab/n-mot not correct for gear selected
101	Downshift lock		Speed too high for downshift intended
102	Engine over-rev lock in 1st and 2nd gear		Engine sped 300 rpm above output speed
103	EPROM error		Damaged EPROM Program in memory faulty Reinitialize power to EGS control unit Replace control unit

A4S 310R (THM-R1), A4S 270R (THM-R1) - EGS 4.XX			
U4 CODE	**DEFINITION OF FAULT**	**EGS PIN OUT**	**POSSIBLE CAUSES**
104	DKT engine temperature signal	35	
105	DKT throttle valve signal	35	Break in wiring Short in wiring Anomalous signal
107	False code set		
110	EGS control unit not programmed		Have EGS control unit programmed
105	DKT throttle valve signal	35	Break in wiring short in wiring Anomalous throttle valve signal
106	MUX injection rate		DDE sending faulty injection rate signal
110	EGS control unit not programmed		Have EGS control unit programmed
(150)	Can timeout 1		Can signal not sent during engine start (ignition on)
(151)	Can timeout 2		Can signal not detected (engine running)
(152)	Can bus monitor		Values in can ram storage not updated
(153)	Can status fault		Control units with different can status' are installed on the same bus Replace with correct units
(154)	Can throttle valve signal		Anomalous throttle valve signal detected by DME
(155)	Can load signal		Anomalous load signal detected by DME
(156)	Can engine intervention		DME cannot alter engine torque to match EGS signal DME does not match other can control units
(157)	Can engine temperature		Anomalous engine temperature signal detected by DME
(158)	Can engine speed signal		Anomalous engine speed signal detected by DME
200	Kickdown not working		
201	Sport car transmission feature not selectable		
202	Manual shift program feature not selectable		
203	Program cannot be converted	6	
204	No engine deceleration detected	24	
205	Brake light Brake light test switch		
206	False code set	25	
300	Diagnostic circuit fault		
301	EGS voltage supply		No voltage to EGS control unit Check wiring harness

A5S 310Z (5HP-18) - EGS 7.XX

U7 CODE	DEFINITION OF FAULT	EGS PIN OUT	POSSIBLE CAUSES
02	Solenoid Parking/Neutral lock	2	Break in wiring Short in wiring Defective valve winding
03	Solenoid valve 5		Break in wiring Short in wiring Defective valve winding
04	Solenoid valve 6 - Convertor lockup clutch		Break in wiring Short in wiring Defective valve winding
05	Pressure regulator		Break in wiring Short in wiring Defective valve winding
08	Shift Lever Position L2	8	Vehicle accelerated while shift lever in park or neutral position Engine was started and the EGS control has not detected park or neutral position signal
09	Shift lever position L3/L4	37, 9	Break in wiring Short in wiring Short in sensor
12	Program selector switch	12, 13, 45	Short to ground
16	Turbo charger speed sensor	16, 44	No signal Anomalous engine speed signal
18	Kickdown switch	18	Short to ground Anomalous signal
19	ASC monitoring	19	Break in wiring Short in wiring EGS detected anomalous ASC signal ASC operation detected while shift lever in park or neutral
22	ATF sump temperature sensor	21, 22	Break in wiring Short in wiring
26	Battery voltage +	26	Break in wiring Check battery Check charging system
30	Solenoid valve 1	30	Break in wiring Short in wiring Defective valve winding
31	Solenoid valve 4	31	Break in wiring Short in wiring Defective valve winding
32	Solenoid valve 3	32	Break in wiring Short in wiring Defective valve winding
33	Solenoid valve 2	33	Break in wiring Short in wiring Defective valve winding
35	Throttle valve signal (DKT)	35	Break in wiring Short in wiring Anomalous throttle valve signal
36	Shift lever position l1	36	Break in wiring Short in wiring Short in sensor
40	Engine intervention	40	Break in wiring Short in wiring

A5S 310Z (5HP-18) - EGS 7.XX

U7 CODE	DEFINITION OF FAULT	EGS PIN OUT	POSSIBLE CAUSES
41	KVA signal	41	Break in wiring Short in wiring
42	Transmission output rotation speed signal (n-ab) - Stall speed signal	14, 42	No signal Anomalous engine speed signal
43	Engine speed signal (n-mot)	43	No signal Anomalous engine speed signal
53	Power supply - Solenoid valves	53	Relay in EGS not switching
54	Batter voltage +	54	Battery voltage too low (>9 volts) Check battery Check charging system
100	Speed monitoring		Trans/engine speed ratio not correct for gear selected Speed sensor signal faulty Slip in transmission too high
101	EPROM checksum error		Damaged EPROM Program in memory faulty Reinitialize power to EGS control unit Replace control unit
102	Program checksum error		Damaged EPROM Program in memory faulty Reinitialize power to EGS control unit Replace control unit
103	Relay - EGS control unit		Relay in EGS not switching in time
104	DKT- Temperature signal	35	Break in wiring short in wiring Anomalous engine temperature signal
105	DKT - Throttle valve signal	35	Break in wiring short in wiring Anomalous throttle valve signal
106	MUX injection rate		DDE sending faulty injection rate signal
110	EGS control unit not programmed		Have EGS control unit programmed
(150)	CAN timeout 1		CAN signal not sent during engine start (ignition on)
(151)	CAN timeout 2		CAN signal not detected (engine running)
(152)	CAN bus monitor		Values in CAN ram storage not updated
(153)	CAN status fault		Control units with different CAN status' are installed on the same bus Replace with correct units
(154)	CAN throttle valve signal		Anomalous throttle valve signal detected by DME
(155)	CAN load signal		Anomalous load signal detected by DME
(156)	CAN engine intervention		DME cannot alter engine torque to match EGS signal DME does not match other CAN control units
(157)	CAN engine temperature		Anomalous engine temperature signal detected by DME
(158)	CAN engine speed signal		Anomalous engine speed signal detected by DME
200	Kickdown not working		
201	Sport car transmission feature not selectable		
202	Manual shift program feature not selectable		
203	Program cannot be converted	6	
204	No engine deceleration detected	24	
205	Brake light Brake light test switch		
206	False code set		
300	Diagnostic circuit fault		
301	EGS voltage supply		No voltage to EGS control unit Check wiring harness

A5S 560Z (5HP-30) - EGS 9.XX			
U9 CODE	**DEFINITION OF FAULT**	**EGS PIN OUT**	**POSSIBLE CAUSES**
01	Pressure regulator - EDS 2	1	Anomalous signal Break in wiring Short in wiring
02	Solenoid Parking/neutral lock	2	Break in wiring Short in wiring Defective valve winding
04	Pressure regulator - EDS 4	4	Anomalous signal Break in wiring Short in wiring
05	Pressure regulator - EDS 1	5	Anomalous signal Break in wiring Short in wiring
08	Shift lever position L2	8	Vehicle accelerated while shift lever in park or neutral position Engine was started and the EGS control has not detected park or neutral position signal
09	Shift lever position L3/L4	37, 9	Break in wiring Short in wiring Short in sensor More than one program selector switch is applied to ground
12	Program selector switch	12, 13, 45	Short in wiring Short in sensor More than one program selector switch is applied to ground
16	Turbo charger speed sensor	16, 44	No signal Anomalous engine speed signal
18	Kickdown switch	18	Short to ground Anomalous signal
(19)	ASC monitoring	19	Break in wiring Short in wiring EGS detected anomalous ASC signal ASC operation detected while shift lever in park or neutral
22	ATF sump temperature sensor	21, 22	Break in wiring Short in wiring
26	Battery voltage +	26	Break in wiring Check battery Check charging system
29	Pressure regulator - EDS 3	29	Anomalous signal Break in wiring Short in wiring
30	Solenoid valve 1	30	Break in wiring Short in wiring Defective valve winding
31	Solenoid valve 4	31	Break in wiring Short in wiring Defective valve winding
32	Solenoid valve 3	32	Break in wiring Short in wiring Defective valve winding
33	Solenoid valve 2	33	Break in wiring Short in wiring Defective valve winding
35	Throttle valve signal (DKT)	35	Break in wiring Short in wiring Anomalous throttle valve signal

A5S 560Z (5HP-30) - EGS 9.XX

U9 CODE	DEFINITION OF FAULT	EGS PIN OUT	POSSIBLE CAUSES
36	Shift lever position L1	36	Break in wiring Short in wiring Short in sensor
40	Engine intervention	40	Break in wiring Short in wiring
41	KVA signal	41	Break in wiring Short in wiring
42	Transmission rotation speed signal (n-ab) Stall speed signal	13, 42	No signal Anomalous engine speed signal
43	Engine speed signal (n-mot)	43	No signal Anomalous engine speed signal
(51)	Pressure regulator - EDS 3	51	Anomalous signal Break in wiring Short in wiring
(52)	Power supply - Solenoid valves or EDS'	52	Break in wiring Short in wiring
54	Batter voltage +	54	Battery voltage too low (>9 volts) Check battery Check charging system
100	Speed monitoring		Trans/engine speed ratio not correct for gear selected Speed sensor signal faulty Slip in transmission too high
101	EPROM checksum error		Damaged EPROM Program in memory faulty Reinitialize power to EGS control unit Replace control unit
102	Program checksum error		Damaged EPROM Program in memory faulty Reinitialize power to EGS control unit Replace control unit
103	Relay - EGS control unit	52	Relay in EGS not switching in time
104	Engine over-rev lock		Engine speed >6800 rpm detected
105	Speed monitoring		Trans/engine speed ratio not correct for gear selected Speed sensor signal faulty Slip in transmission too high
106	Speed monitoring		Trans/engine speed ratio not correct for gear selected Speed sensor signal faulty Slip in transmission too high
(150)	CAN timeout 1		CAN signal not sent during engine start (ignition on)
(151)	CAN timeout 2		CAN signal not detected (engine running)
(152)	CAN bus monitor		Values in CAN ram storage not updated
(153)	CAN status fault		Control units with different CAN status' are installed on the same bus Replace with correct units
(154)	CAN throttle valve signal		Anomalous throttle valve signal detected by DME
(155)	CAN load signal		Anomalous load signal detected by DME
(156)	CAN engine intervention		DME cannot alter engine torque to match EGS signal DME does not match other CAN control units (e.g. ASC)
(157)	CAN engine temperature		Anomalous engine temperature signal detected by DME

BMW ACRONYMS

A/D	Analog/Digital
AB	Supplemental Restraint System (Airbag)
ABS	Anti-lock Brake System
AEGS	Electronic Automatic Transmission System
AG	Automatic Transmission
ASC	Automatic Stability Control
CAN	Control Area Network (Multiple ECU controller)
CANP	Tank Ventilation Valve
CO	Carbon Monoxide
DDE	Digital Diesel Electronics (Diesel ECU)
DK	Throttle Valve
DKB	Throttle-Brake Intervention
DKE	Throttle Increase
DKR	Throttle reduction
DKT	Throttle Valve Signal
DKV	Preset Throttle Value
DME	Digital Motor Electronics (Gas ECU)
DWA	Antitheft System
ECU	Electronic Control Unit
EDS	Pressure Regulator
EGS	Electronic Transmission Control (Trans, ECU)
EH	Electrohydraulic Transmission
EKM	Electronic Body Module
EKP	Fuel Pump Relay
EML	Electronic Throttle Control
EPROM	Erasable/Programmable Read Only Memory
EV	Injector Valve
HG	Manual Transmission
HLM	Hot-Wire Air Mass Meter
Hz	Hertz (Cycle)
ISC	Idle Speed Control
KD	Kick-down (Auto Downshift on Acceleration)
KVA	Fuel Consumption Signal
LL	Idle
LMM	Air Flow Meter
MSR	Engine Drag Torque Control
MV	Magnetic Valve (Solenoid Valve)
n-ab	Transmission Rotational Speed (RPM)
n-mot	Engine Rotational Speed
P/N	Park/Neutral
PWG	Pedal Position Sensor
RAM	Random Access Memory
RXD	Receive Data Line
SG	Control Unit
TD	Engine Speed Signal (Once per ignition)
TDC	Top Dead Center
TE	Fuel Evaporation Control
ti	Injection Timing
tL	Load Signal
TR	Engine Speed Signal (Rpm Counter)
TXD	Transmit Data Line
U-Batt	Battery Voltage
U-Vers	Supply Voltage
VL	Full Load
WK	Torque Convertor Clutch
ZAB	Ignition Fade-Out

BMW CHASSIS DESIGNATIONS

Production Cars - Past and Current Models That Have Been Put into Production.

CHASSIS	YEAR	MODEL	BODY STYLE
114	1967-75	1502/1602/1802/2002Tii	2d sedan
115	1962-64	1500	4d sedan
116		1600	4d sedan
118	1963-?	1800/1800Ti/1800TiSA	4d sedan
120	1966-?	2000/2000Ti/2000TiLUX/2000Tii	4d sedan
121	1965-69	2000C/2000CS Tii	2d coupe
E3		2500 - 3.3Li Bavaria'	4d sedan
E6		1600/1800/2000/2000/Tii touring	2d coupe/3d hatch
E9	1972-75	2.5CS - 3.0CSL	2d coupe
E10	1972-74	2002ti/2002tii	2d coupe
E12	1973-81	5-series (4 cylinder)	4d sedan
E12/5	1973-81	5-series (small 6 cylinder)	4d sedan
E12/6	1973-81	5-series (large 6 cylinder)	4d sedan - South African
E12/8	1973-81	5-series	4d sedan - South African
E20	1973-74	2002 turbo	2d coupe
E21	1976-82	3-series	2d coupe
E21/5		3 series (small 6 cylinder)	2d coupe
E23	1978-86	7-series	4d sedan
E24	1976-89	6-series (628-635CSi/M6)	2d coupe
E26	1979-80	M1 with M88 engine	2d mid-engine coupe
E28	1982-87	5-series	4d sedan
E30	1983-90	3-series	2d coupe/4d sedan/ convertible
E30/5	1987-90	3-series 'Touring'	5d wagon
E30/16	1987-90	3-series iX	2d coupe/4d sedan (4WD)
E31	1990-	8-series	2d coupe
E32	1987-94	7-series	4d sedan
E32/2	1987-94	7-series	4d sedan LWB
E34	1988-94	5-series	4d sedan
E34/2	1989-94	5-series	5d wagon
E36	1991-	3-series	4d sedan
E36/2	1992-	3-series see-above	2d coupe/convertible
E36/5	1994-	3-series 'Compact'	3d hatch
E36/6	1995-	3-series 'Touring'	5d wagon
E36/7	1996-	Z3	2d roadster - U.S. made
E37/8	1997?	Z3 coupe	3d hatchback - U.S. made
E38	1995-	7-series	4d sedan
E38/2	1995-	7-series	4d sedan LWB
E39	1996-	5-series	4d sedan
E46	1998-	3-series	4d sedan/2d coupe/convertible
Z1	1987-91	plastic-body roadster	2d convertible

Show Cars - Concept Cars That Have Been Displayed at Various Auto Shows.

E1/E2	1992/93	Electric Prototypes	3d hatch
Z13	1993	Hybrid City Car	3d hatch

Rumors/Speculation - Not Yet (maybe never) in Production, Development, Testing.

E45	1999?	2-series (E1 derivative)	sedan/hatch/wagon/offroader FWD/Aluminum spaceframe
E51	1999?	Reborn 6-series (based on E39)	2d coupe/convertible?
E52	1998?	Modern 507 roadster (low volume, high $)	2d convertible

E53	1999?	Sport-Utility !?	SUV/minivan/wagon hybrid

BMW ENGINE DESIGNATIONS

ENGINE	DISP.	CYLINDERS	CHASSIS
M10	1.8	SOHC-8v/L4	E21
M12/6	2.0	DOHC-16v/L4	Formula 2
M12/7	2.0	DOHC-16v/L4	F2/320i Group 5
M12/9	2.0	DOHC-16v/L4 Turbo	320i Group 5
M13	1.5	DOHC-16v/L4 Turbo	Formula 1
M20	2.5/2.7	SOHC-12v/L6 + eta	E28/E30/E34
M21	2.4	SOHC-12v/L6 Diesel	E28/E30/E34/E36
M30	3.0/3.2/3.3/3.5	SOHC-12v/L6	E23/E24/E28/E32
M40	1.6/1.8	SOHC-8v/L4	E30/E36
M42	1.8 ?-->1.9	DOHC-16v/L4 + Al block/VANOS	E30/E34/E36
M43	1.8	SOHC-8v/L4	E36
M50	2.0/2.5	DOHC-24v/L6	E34/E36
M50TU	2.0/2.5	DOHC-24v/L6 w/VANOS	E34/E36
M52	2.0/2.3/2.8	DOHC-24v/L6 w/VANOS (Al block)	E36/E39
M60 (old)	2.0/2.3	SOHC-12v/L6 Carbureted	E12/E21
M60	3.0/4.0	DOHC-32v/V8	E31/E32/E34/E38/E39
M62	3.0/4.0	DOHC-32v/V8	E31/E34/E38/E39
M70	5.0/5.4/5.6	SOHC-24v/V12	E31/E32/E38
M73	5.0	SOHC-48v/V12	E38
M88	3.5	DOHC-24v/L6	E26-M1
M88/1	3.5	DOHC-24v/L6	Group 4 (470hp)
M88/2	3.5	DOHC-24v/L6	Group 4 (850hp)
M88/3	3.5	DOHC-24v/L6	E24-early M5/M6
M102	3.2/3.5	SOHC-12v/L6 Turbo	E23-745i Turbo
S14	2.3/2.5	DOHC-16v/L4	E30-M3
S38	3.5/3.6/3.8	DOHC-24v/L6	E28-M5/E24-M6/E34-M5
S50	3.0	DOHC-24v/L6	E36-M3
S50US	3.0	DOHC-24v/L6	E36-M3 U.S. vers.
S70/2	6.1	DOHC-48v/V12	McLaren F1

BMW EGS MODELS 1987-95

TRANSMISSION TYPE	EGS SYSTEM
4HP 22/4HP 24 (TO 11/89)	1.XX
4HP 22/4HP 24 (11/89-newer)	1.XX
4HP 24 (non-U.S. 850CSi)	2.28
A4S 310R (THM-R1)	4.XX
A4S 270Z (THM-R1)	4.XX
A5S 310Z (5HP-18)	7.XX
A5S 560Z (5HP-30)	9.XX