

iSCAN

Automotive Diagnostic Scanner

BMW

INSTRUCTION MANUAL

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NOTICE

The specifications, information, and illustrations contained in this manual are based on the latest information available at the time of publication. The right is reserved to make changes at any time without notice.

This instruction manual tells you how to use the Scanner to perform diagnostic tests. It is NOT intended as a complete source for diagnostic information. It DOES NOT tell you how to correct the problems. Consult the manufacturer vehicle service manual or other publication for repair instructions.

To take full advantage of the Scanner, you should be knowledgeable and well trained in each of the vehicle computer control systems described in this manual.

Service data that appear to be non-functional on some vehicles may be due to vehicle manufacturing design changes. Always refer to the manufacturers specification for the month and year of production of the model in question.

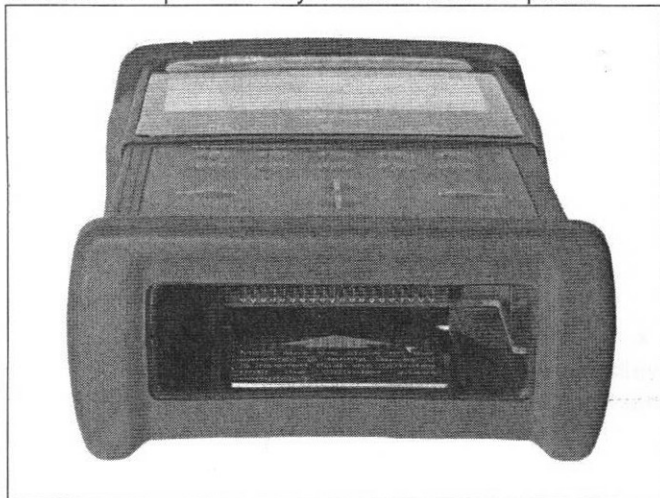
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SCANNER FEATURES



SCANNER CONNECTION

Insert the PS Software Module without the programming cable attached into the base of the the **iSCAN** Diagnostic Scanner and press in till you feel it click into place.

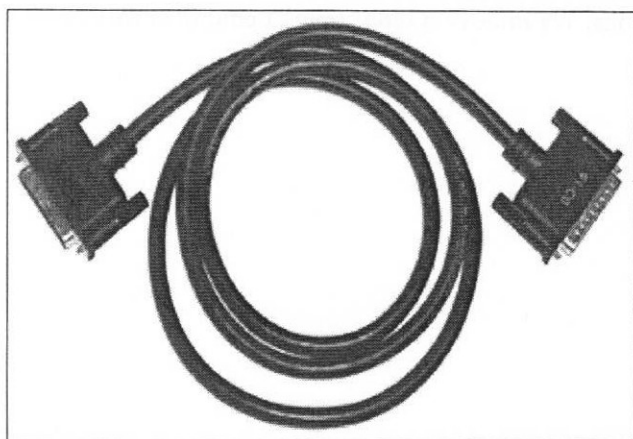


D91-B Bottom View

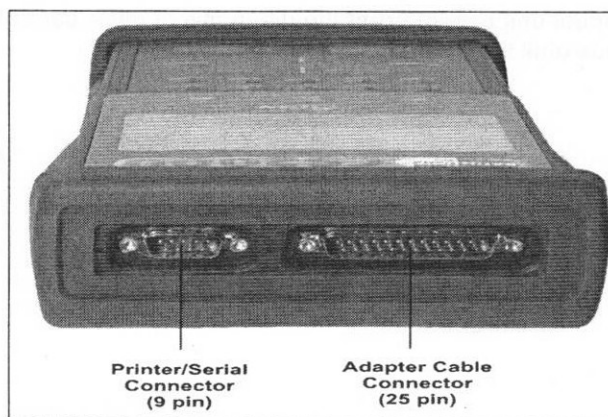


PS-Module with Programming cable

Connect the extension adapter #OB91-C0 to the 25 pin connector located on the top of the **iSCAN** Diagnostic Scanner. Tighten connector screws.



OB91-C0



D91-B Top View

Next locate the diagnostic port for the vehicle being tested. Choose the appropriate adapter cable for the vehicle being tested and connect to the extension #OB91-C0.

With the ignition key off, connect the adapter to the vehicles diagnostic socket and if necessary to the vehicle's battery power supply. Most diagnostic connectors supply access to power directly (Early model Volvo and Mercedes do not).

After connecting to the diagnostic socket and power is supplied, turn on the **iSCAN** Diagnostic Scanner at the ON/OFF switch on the right side of the unit. The unit will now boot up it's screen and beep to indicate it has successfully read the software module.

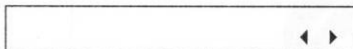
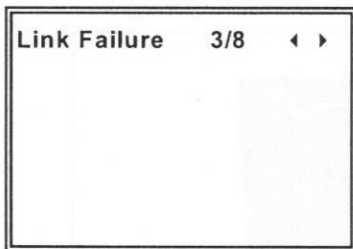
If the screen is not visible, adjust the CONTRAST CONTROL on the Left side of the unit.

Next turn the ignition key to the RUN position or Start the vehicle. Now follow the menu on the screen to access the system you wish to test.

!!! If the diagnostic link circuit is shorted to ground or a control unit is faulty, the green or yellow LED light will turn on steadily when the scanner is connected to the vehicle diagnostic connector.

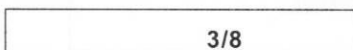
SCANNER SCREEN ICONS

Some displays include icons on top line of the screen that give you extra information.



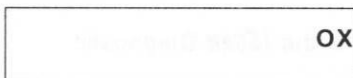
Page keys

When either of these icons ◀ ▶ appears in the top line of the screen, there is more information available. Press the ◀ (left) or ▶ (right) arrow key to view this additional information.



Page information

Display current page number and total number of pages.



Keypad Choices

Shows the possible keypad choices for menu item.

A faulty control unit can interrupt the diagnosis of other control units. Try removing other related control units from the CAN bus until the control unit under test responds.

BMW Operation of D91-1 Memory Module

1. Setting Up:



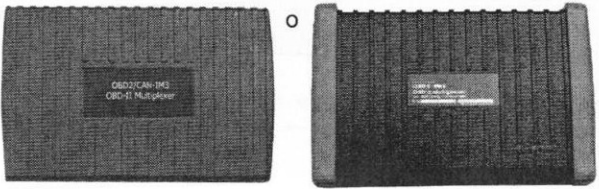
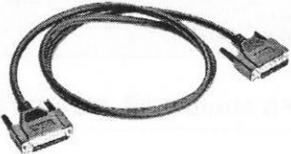
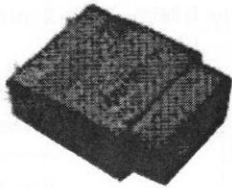
Module Insertion

Insert the **OB91-1** memory module into the base of the scanner. Make sure the arrow on the module is facing up as it is inserted. Push the module until the module snaps into place completely. If the module is inserted correctly, you will feel it click into place.



Cable Hook up

See D91 Connection Manual for Adapters

			
OBD-II/CAN-IM3 or IM4 OBD-II Multiplexer		BU-EC 25 Pin extension Cable	
			
AC-EC Adapter Extension Cable		OBDII-AC-16P OBDII 16 Pin Adapter	BM-AC-20P BMW 20 Pin diagnostic adapter.



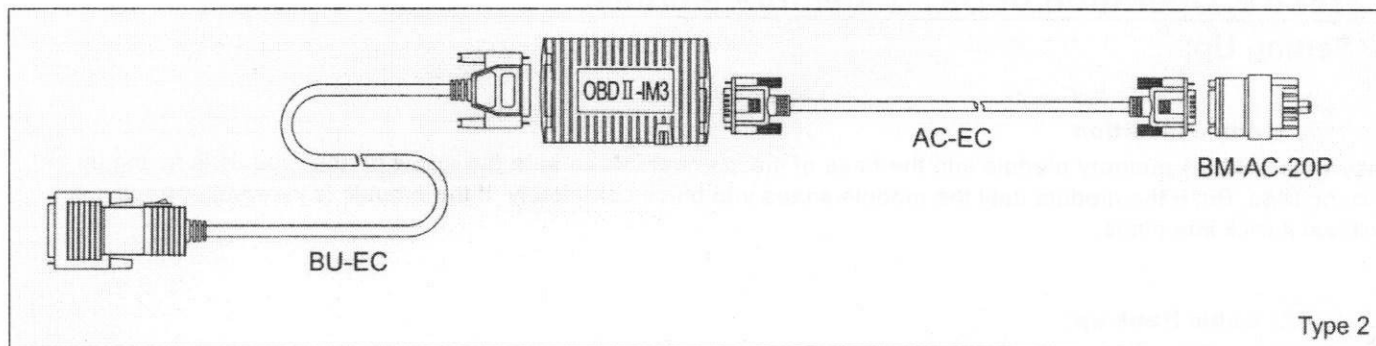
Vehicle Diagnostic Connector Location

1988-2000 - These models use a 20 pin diagnostic socket located in the engine compartment, near driver side or passenger side strut tower. It can be identified by the scalloped shape of the screw on cap.

2001- PRESENT - These models utilize the 16 pin OBD-II diagnostic socket (J1962) found to the left of the steering column under the dash. You must have software version 3.0 or higher to access model year 2001 or later vehicles.

If the 20 pin diagnostic socket is present in the vehicle always use it for all diagnostic purposes.

BMW 20 Pin Diagnostic Connector 1988-2000

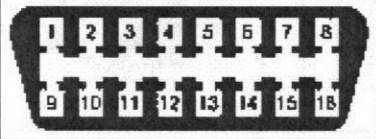


20-Pin Diagnostic Connector

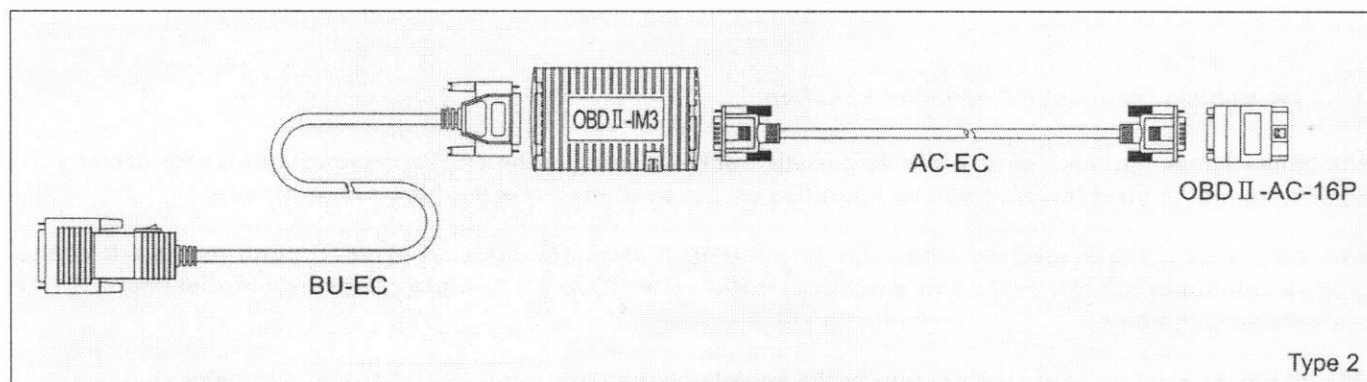
D91-BU+D91-8 PS Module → BU-EC → OBDII/CAN-IM3 → AC-EC → BM-AC-20P → 

⚡ Use of OBD-II Diagnostic Cables

It is preferred to use the OBDII/CAN-IM3 multiplexer. This allows the software to automatically switch between pins in the diagnostic socket. However as new systems are added other pins may be used by the automaker to access other controllers. Currently BMW uses 2 pins in the OBD-II connector, but this will increase as CAN communication is introduced.

	OBD-II Connector	TEST
	Pin 7	Engine and Transmission, some ABS
	Pin 8	ABS and All other systems

BMW OBD-II Diagnostic Connector



OBD-II Diagnostic Connector

D91-BU+D91-8 PS Module → BU-EC → OBDII/CAN-IM3 → AC-EC → OBDII-AC-16P → 

2. Starting Diagnosis

- a. Turn Ignition ON or Engine at Idle
- b. Select System for Test

MAKE ▶	
1	BMW Diag 91(V5.50 SP3)
2	MINI 91(V1.00 SP3)
3	OBDII 91 (V3.20 SP3)
4	PS-MODULE SN
5	BLUE TOOTH MODULE

Use the up and down arrows to choose the MAKE you wish to test. **In this case BMW diagnostics**

1st Page

BMW ▶	
1	1 SERIES
2	3 SERIES
3	5 SERIES
4	7 SERIES
5	8 SERIES
6	X SERIES
7	Z4

BMW	
8	SERVICE RESET
9	CODING PROGRAMMING

Let's choose 3 SERIES as an example.

3 SERIES	
1	E30
2	E36
3	E46
4	Z3
5	E90/E91
6	ECU MANUAL SELECTION

Let's choose E46.

E46	
1	SHORT TEST
2	CONTROL UNIT

let's choose SHORT TEST

SHORT TEST ◀	
1	ALL CONTROL UNITS
2	BY GROUP

ALL CONTROL UNITS > This searches for every possible ECU that could be equipped to the vehicle checks for codes and returns a list of each ECU contacted and whether it is (OK) or has fault codes (F) or is not present (N/C). Controllers with communication issues are usually found to be N/C (No communication).

ALL CONTROLLERS ▶	
1	AUTO ERASE ALL CODES
2	DME (Engine)
3	EGS (Transmission)
4	SRS (Airbag)
5	ABS (Antilock brake)
6	EML (Elec. throttle)

BY GROUP > Looks for controllers in select areas of operation

BY GROUP ◀	
1	DRIVE
2	CHASSIS
3	BODY
4	COMMUNICATIONS AND INFORMATION
5	AC

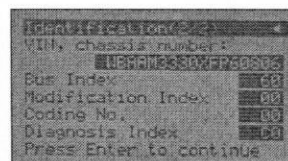
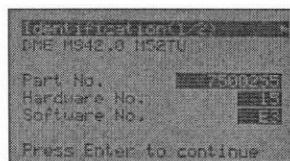
1	DME (Engine)
2	EGS (Transmission)
3	SRS (Airbag)
4	ABS (Antilock brake)
5	EML (Elec. throttle)
6	IHKA/IHKB (AC/Heater)
7	IKE/IKI/KOMBI

8	ZKE
9	EWS (immobilizer)
10	PDC (park distance control)
11	SZM
12	LCM (light control)
13	XENON LEFT
14	XENON RIGHT

88	Service Reset
99	DME-EWS Sync.

If more than one page of choices is available there will be a ◀ or ▶ (left or right) arrow in the upper right corner of the display. Press the ▶ (right) arrow key and the next page will be displayed. Press the ◀ (left) key to return to the previous page. Press ▲ (up) or ▼ (down) arrow keys until the system you wish to test is selected, then press ENTER or press the number of the system that you want to test, then press ENTER.

Once a controller selection is made, the scanner will request the selected controllers identification information and display it.

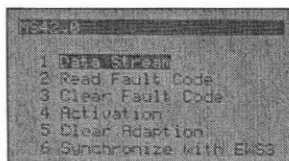


323CiC Siemens MS42 injection 2000 Controller Information

- Part Number
- Hardware Number
- Software Number
- VIN - Vehicle Identification Number
- Bus Index -CAN Bus Identifier Number
- Modification Index
- Coding Number - Number of times EEPROM has been reflashed (13 is the maximum allowable)
- Diagnosis Index

The identification information shown may not be available in every controller.

Next press ENTER (O) and the Diagnostics page will be displayed.



Example: Diagnostic Menu

Available Tests

Data Stream

Displays the sensor signals and output stage information from the electronic control unit (ECU). Please note that ABS data stream is automatically discontinued by the controller when the vehicle exceeds 30mph. This is normal operation.

Read Fault Code

The scanner reads fault codes directly from the electronic control unit's memory and displays a short description of each code. When there is no fault in the system, the message "No fault stored" will be displayed on the screen.

Note: Software 2.82 and earlier - V8 and M3 vehicles equipped with MS41.2 injection may return a message of "No fault stored" with the check engine light on. Disconnect tool and cycle the key off for 10 seconds and then on. Reconnect tool and attempt another diagnosis of faults. If "No fault stored" is reported immediately read codes again. Data stream information and code clearing are unaffected.

Clear Fault Code

After repairs have been carried out. Select the Clear Code function to erase all of the fault codes from the control unit memory.

Activation

Use this feature to activate solenoid driven components, such as injectors, secondary air pump, EVAP purge valve, transmission solenoids,...etc.

Clear Adaption

Use this feature to return the engine and transmission learned values (adaption) to the original factory setting for relearning. This is necessary when changing components such as O2 sensors or transmissions. This will keep the Engine Light or Transmission control message from reappearing.

Synchronization with EWS3 (DME/Engine) only

This feature resets the DME and EWS rolling codes to the first number in storage (base number). A new DME or EWS controller will need to be activated (married) to the existing EWS or DME by the DIS, MODIC, DISPlus or GT1, before synchronization can occur. New controllers should be ordered with the VIN number to assure they are compatible.

3. Identification/Rectification of Faults

This is a General procedure. Specific repair information can be obtained by subscribing to the BMW information website, Baum Tools Information BBS and Libraries, The IAIBMWSP and the Bentley Publishing website.

www.bmwtechinfo.com
www.baumtools.com
www.iaibmwsp.com
www.rb.com

A) Read and record all fault codes.

Note that many systems are co-dependent, such as ABS/ASC, EGS and DME, so fault codes from other controllers may aid in diagnosis.

Fault Code Types

There are basically 2 code types.

- **Component Failure Codes**
- **System Malfunction or Logic Codes.**

Component failure codes are just that. They specifically target a component as failing. These faults are detected by a break in the wiring, short to ground, a short to B+ or value returned out of range.

Some of these components are;

Oxygen Sensor
MAP
MAF
TPS
Vehicle Speed Sensor
Coolant Temperature Sensor
Intake Air Temperature Sensor
Camshaft Position Sensor
Crankshaft Position Sensor
Exhaust Temperature Sensor
Injectors
Ignition (coils)
Idle Air Valve
Pressure Regulator (optional)
EVAP Purge Valve
...etc.

These codes make it easy to spot the problem. The ECU has "birdogged" it for you.

System malfunction codes, sometimes called "causal" or logic" codes, indicate that when a system operated it did not produce the desired result.

Examples of these codes are;

Fuel Trim, O2 Control Limit (Lambda control) exceeded.

Causes:

Fuel tank ran empty
Incorrect Fuel Pressure
Injector valve defective or coked
Engine Temperature Sensor defective
Secondary air leak
EVAP control system defective
Air Mass Meter defective
O2 sensor aging (slow response) or inactive
Combustion disturbed by mechanical failure (Spark plugs, compression, intake/exhaust valves, ...etc.)

Ignition Feedback Fault

Causes:

Coils
Sparkplug Wires
Sparkplugs
ECU

Low or high battery voltage

ASC Signal, active too long

Causes:

- ABS/ASC Control Unit Fault
- ABS/ASC Component Fault
- CAN Bus Communications Fault
- Faulty EML System
- Low or high battery voltage

MSR Signal, active too long

Causes:

- Faulty EML
- Broken Piston
- Broken Rod
- Transmission Lockup
- Faulty EML System
- Low or high battery voltage

EML Signal, active too long

Causes:

- Faulty EML System
- Low or high battery voltage

Output Amplifier Stage Fault

Causes:

- Idle Speed Actuator
- Injector Valves
- Oxygen Sensor Heating Relay
- Fuel Evaporation Control Valve
- Malfunction Indicator Lamp (MIL)
- Low or high battery voltage
- EKP Relay

ECU Faults

Causes:

- Internal Control Module, internal communication fault
- Internal Control Module, Keep Alive Memory (CMOS)
- Internal Control Module, Memory check sum (ROM/RAM)
- Internal Control Module, RAM
- Internal Control Module, EEPROM. (M62/M73MY98 only)

These types of codes are more difficult to diagnose, but generally there will be other conditions that can give you a clue. Other fault codes will be present, physical engine condition (wear and tear) or the nature of the complaint itself.

Retrieve related information from the Data Stream for the suspected components/systems.

- B) Clear all fault codes.
- C) Perform a test drive to reproduce the fault and rerun the diagnosis with the scanner. Some codes will require more than one test drive in order to test the subsystem, such as EVAP or Secondary Air.
- D) Reread and verify all codes .
- E) Carry out the repair procedures as outlined in the factory service and repair literature.
- F) Repeat steps B, C and D to verify repair.

Quick Diagnostic Guide

Step by step to a fix.

- 1) Customer Interview.
- 2) If no start, check keys for defects.
- 3) Test Drive
- 4) Visual Inspection
- 5) Battery Inspection
- 6) Recall Fault Codes
- 7) Data Stream Analysis
- 8) Direct Component Tests
- 9) Failure Analysis (Why did it do that?) Don't forget this step or you may be seeing this car again for the same problem.

Fault Code and Data Stream Analysis

Recall System or Component malfunction code(s).

Component Malfunction Codes

Check component response in the Datastream.

Not Ok - Check wiring and component with DMM or Scopemeter to verify.

Not OK - Replace.

OK - Inspect component wiring to ECU for bad crimps and possible wear.

Not Ok - Replace/repair.

OK - Suspect power supply or relay.

Not Ok - Replace.

Ok - Suspect ECU.

System Malfunction Codes

Check for all codes.

Component Codes Present - See Component Malfunction Codes above.

If component is repaired run required test drive(s) and check for code recurrence.

No Codes - Treat yourself to a cup-a.

System Code and Component Code recurs - Check your previous work.

OK - Suspect Mechanical cause or ECU.

System Code only.

Check Datastream for input and output values for the Malfunctioning System.

Out of range values - Inspect related mechanical system for that I/O value.

Not OK - Repair.

OK - Suspect power supply or ECU.

One of the most annoying faults are intermittent faults. These are generally caused by:

- Dirty corroded ground contacts
- Loose crimps in connectors
- Broken or cracked relay mounts
- Cold solder joints in components
- Carbon build up
- Faulty alternators or fuel pumps introducing too much AC ripple into circuits
- Damaged ECU
-

Coding/Programming

After connecting and diagnosing should coding be necessary, be sure to clear all fault codes first.

Enter the menu and go to BMW Coding
choose the Vehicle and module to be coded.

BMW Coding Procedures IKE or EWS

General overview.

Step 1: Do not change the original ECU and choose IKE/KOMBI or EWS systems.

Step 2: You will read the Chassis #

Step 3: You will read the original GM / SA / VN codes. Write them down.

Step 4: Key off and exchange the ECU.

Step 5: Choose IKE/KOMBI or EWS systems again and you will read the GM / SA / VN codes again.

Step 6: Comparing this GM / SA/ VN codes with the original ones and if they're all the same, you can proceed to do the automatic coding.

If the codes are different, change them manually so they are the same as the original ones then you can start automatic coding.

Step 7: Coding complete.

Step 8: Ignition off for 10 seconds then ignition on KOEO again for 30 seconds.

Step 9: Check if there are any codes in the system if so delete codes.

For Codes in DSC coding

Step 1:

Run recoding in ZCS

Step 2:

Read fault code descriptions, there may be 2 fault code:

97(0x61) Steering angle sensor calibration necessary

109(0x6D) end of line test

Step 3:

If fault code (0x61) exists:

Perform steering angle sensor LEW calibration

Step 4:

If fault code (0x6D) exists:

a) Clear fault code, and Turn ignition off for 10 sec,

b) Turn ignition on and Push break pedal within 20 seconds till all warning indicators go off.

Light Control Modules
LCM - E38, E39, E53

Light Switching Center
LSZ - E46

If coding fails fill out the coding failure report form at the end of this document and fax or email to Baum Tools Tech Support. 1-941-927-1612 or tech@baumtools.com

Web Based BMW Information

BMW Technical Information Website (subscription based)

<http://www.bmwtechinfo.com>

Baum Tools Unlimited Inc. BBS.

<http://www.baumtools.com>

Click on Login to enter BBS.

IAIBMWSP -International Association of BMW Service Professionals (subscription based)

<http://www.iaibmwsp.com>

Bentley Publishers BMW BBS

<http://www.rb.com>

Click on BMW on the left column under Technical Discussions.

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

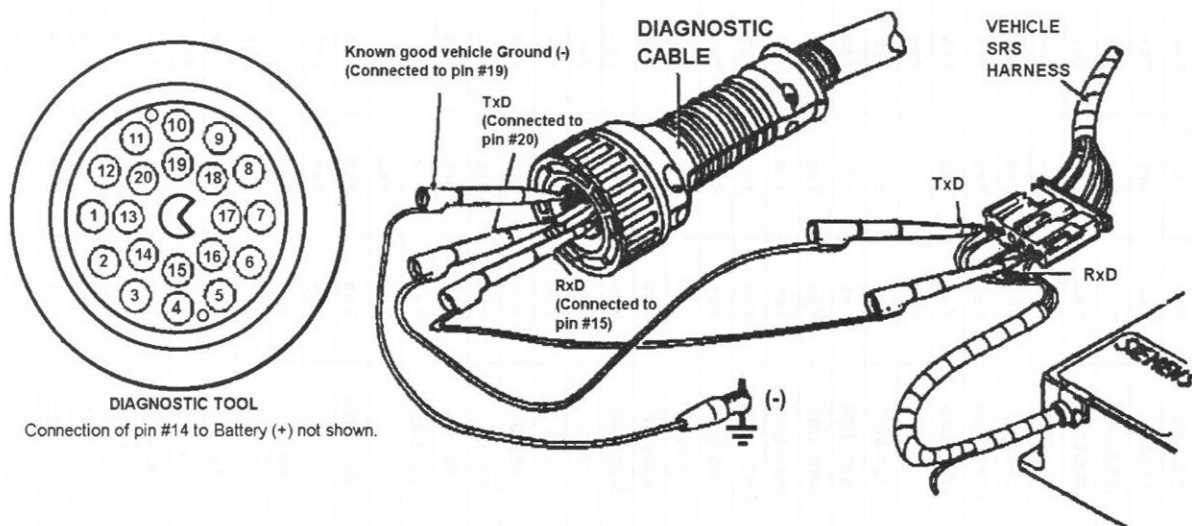
(For use with Baum Tools CS1000, CS2000, Carsoft Software or BMW MODIC.)

This information can be found as BMW service bulletin #72 02 91.

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 (+) Pin #15 (RxD) Pin #19 Ground Pin #20 (TxD)	Battery (+) Terminal Pin #6 (WT/YL) Good Vehicle Ground Pin #2 (WT/VI)
E30	Pin #14 Battery (+) Pin #15 (RxD) Pin #19 Ground Pin #20 (TxD)	Battery (+) Terminal Pin #6 (WT/YL) Good Vehicle Ground Pin #2 (WT/VI)
E30 1992 Convertible	Pin #14 Battery (+) Pin #15 (RxD) Pin #19 Ground Pin #20 (TxD)	Battery (+) Terminal Pin #6 (WT/BLK) Good Vehicle Ground Pin #7 (WT/VI)

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



Application Guide by Model BMW Software Version 5.00

n/a - Not applicable or model not equipped with this system

Model	Body	Years	DME	ABS	SRS	Trans.	IHKR/IHKA	COMBI	ZKE	PDC	EWS	SZM	LCM	XeNon R/L
316i	E30	1988-91	Yes	n/a	Yes	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
318i	E30	9/87-89	Yes	n/a	Yes	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
318is	E30	1990-91	Yes	n/a	Yes	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
318i/is	E36	1992-8/93	Yes	Yes	Yes	Yes	Yes	Yes	n/a	n/a	n/a	n/a	n/a	n/a
318i/is	E36	9/93-12/94	Yes	Yes	Yes	Yes	Yes	Yes	Yes	n/a	n/a	n/a	n/a	n/a
318i/is/Ti	E36	1/95-8/95	Yes	Yes	Yes	Yes	Yes	Yes	Yes	n/a	n/a	n/a	n/a	n/a
318i/is/Ti	E36	1996-98	Yes	Yes	Yes	Yes	Yes	Yes	Yes	n/a	Yes	n/a	n/a	n/a
318i/is	E46	1999-2001	Yes	Yes	Yes	Yes	Yes	Yes	Yes	n/a	Yes	Yes	LSZ	Yes
323Ci	E46	6/98-9/00	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yeses	Yes	Yes	LSZ	Yes
325	E30	1988	Yes	n/a	Yes	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
325e/es	E30	9/84-9/87	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
325i/is/iX	E30	1987-8/90	Yes	n/a	Yes	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
325i/is	E36	9/90-8/91	Yes	Yes	Yes	Yes	Yes	Yes	n/a	n/a	n/a	n/a	n/a	n/a
325i/is	E36	9/91-8/92	Yes	Yes	Yes	Yes	Yes	Yes	n/a	n/a	n/a	n/a	n/a	n/a
325i/is/ic	E36	9/92-12/94	Yes	Yes	Yes	Yes	Yes	Yes	Yes	n/a	n/a	n/a	n/a	n/a
325i/is/ic	E36	1/95-8/95	Yes	Yes	Yes	Yes	Yes	Yes	Yes	n/a	n/a	n/a	n/a	n/a
325i/Ci	E46	9/00-	Yes?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	LSZ	Yes
328i	E36	1996-98	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	n/a	n/a	n/a
328i	E46	6/98-6/00	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	LSZ	Yes
330i/Ci/Xi	E46	6/00-	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	LSZ	Yes
330i/Ci/Xi	E46	6/02	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	LSZ	Yes
M3	E30	1988-91	n/a	n/a	Yes	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
M3 - Evo2	E30	1989-91	n/a	n/a	Yes	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
M3 - Evo3	E30	1988-91	n/a	n/a	Yes	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
M3 - Euro	E36	1993-95	Yes	Yes	Yes	Yes	Yes	Yes	Yes	n/a	n/a	n/a	n/a	n/a
M3	E36	1995	Yes	Yes	Yes	Yes	Yes	Yes	Yes	n/a	n/a	n/a	n/a	n/a
M3	E36	1/95-12/95	Yes	Yes	Yes	Yes	Yes	Yes	Yes	n/a	n/a	n/a	n/a	n/a
M3	E36	1996	Yes	Yes	Yes	Yes	Yes	Yes	Yes	n/a	Yes	n/a	n/a	n/a
M3	E36	1997-99	Yes	Yes	Yes	Yes	Yes	Yes	Yes	n/a	Yes	n/a	n/a	n/a
M3	E46	1999-2000	Yes	Yes	Yes	Yes	Yes	Yes	Yes	n/a	Yes	Yes	n/a	n/a
M3	E46	01/01-	No?	Yes	Yes	No	No	No	No	n/a	Yes	Yes	n/a	n/a
Z3	E36	1996	Yes	?	Yes	Yes	Yes	Yes	Yes	n/a	Yes	n/a	LSZ	n/a
Z3	E36	1997-2002	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	n/a	LSZ	n/a
525i	E34	1989-90	Yes	n/a	Yes	Yes	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
525i	E34	9/90-8/91	Yes	Yes	Yes	Yes	n/a	n/a	?	n/a	n/a	n/a	n/a	n/a
525i/IT	E34	9/91-1/92	Yes	Yes	Yes	Yes	Yes	Yes	Yes	n/a	n/a	n/a	n/a	n/a
525i/IT	E34	2/92-93	Yes	Yes	Yes	Yes	Yes	Yes	Yes	n/a	n/a	n/a	n/a	n/a

525i/IT	E34	1993-12/94	Yes	Yes	Yes	Yes	Yes	Yes	Yes	n/a	n/a	n/a	n/a	n/a
525i/IT	E34	1/95-1996	Yes	Yes	Yes	Yes	Yes	Yes	Yes	n/a	Yes	n/a	n/a	n/a
525i/it/A	E39	2001-2002	?	Yes	Yes	Yes	No	No	No	Yes	Yes	Yes	Yes	n/a
528e	E28	9/84-9/87	n/a	n/a	Yes	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
528e	E28	1988	Yes	n/a	Yes	Yes	Yes	n/a	n/a	n/a	n/a	n/a	n/a	n/a
528i/it/A	E39	1997-2000	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	n/a
530i	E34	3/93-8/94	Yes	Yes	Yes	Yes	Yes	Yes	Yes	n/a	n/a	n/a	n/a	n/a
530i	E34	9/94-12/94	Yes	Yes	Yes	Yes	Yes	Yes	Yes	n/a	n/a	n/a	n/a	n/a
530i	E34	1/95-4/94	Yes	Yes	Yes	Yes	Yes	Yes	Yes	n/a	n/a	n/a	n/a	n/a
530i/it/A	E39	2001-	Yes	Yes	Yes	Yes			No	Yes	Yes	Yes	Yes	n/a
533i	E28	1984	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
535i/is	E28	1985-87	n/a	n/a	n/a	Yes	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
535i/is	E28	1988	n/a	n/a	Yes	Yes	Yes	n/a	n/a	n/a	n/a	n/a	n/a	n/a
535i	E34	1989-90	Yes	n/a	Yes	Yes	Yes	Yes	?	n/a	n/a	n/a	n/a	n/a
535i	E34	1991-92	Yes	Yes	Yes	Yes	Yes	Yes	?	n/a	n/a	n/a	n/a	n/a
540i	E34	9/92-12/94	Yes	Yes	Yes	Yes	Yes	Yes	Yes	n/a	n/a	n/a	n/a	n/a
540i	E34	1/95+	Yes	Yes	Yes	Yes	Yes	Yes	Yes	n/a	n/a	n/a	n/a	n/a
540i	E39	1996-8/98	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	n/a	n/a	n/a
540i/iA/iTA	E39	9/98-2001	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	n/a
M6	E24	1984-88	n/a	n/a	No	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
M5/M6	E28/E24	1987-88	n/a	n/a	No	n/a	Yes	n/a	n/a	n/a	n/a	n/a	n/a	n/a
M5	E34	1991-93	Yes	Yes	Yes	Yes	Yes	Yes	?	n/a	n/a	n/a	n/a	n/a
M5	E39	9/99-2003	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	n/a
633csi	E24	1984	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
635csi	E24	1985-87	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
635csi	E24	1988	Yes	n/a	Yes	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
635csi	E24	1989	Yes	n/a	Yes	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
733i	E23	1984	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
735i	E23	1985-87	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
735i/iL	E32	1/88	Yes	n/a	Yes	Yes	Yes	n/a	Yes	n/a	n/a	n/a	n/a	n/a
735i/iL	E32	1989-92	Yes	Yes	Yes	Yes	Yes	Yes	Yes	n/a	n/a	n/a	n/a	n/a
740i/iL	E32	9/92-4/94	Yes	Yes	Yes	Yes	Yes	Yes	Yes	n/a	n/a	n/a	n/a	n/a
740i/iL	E38	1/95-12/95	Yes	Yes	Yes	Yes	Yes	Yes	Yes	n/a	Yes	n/a	n/a	n/a
740i/iL	E38	1996-8/98	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	n/a	n/a	n/a
740iA/iLA	E38	9/98-2001	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	n/a
745i	E65	11/2001	No	No	No	No	No	No	No	No	No	No	No	No
745Li	E66	01/2002	No	No	No	No	No	No	No	No	No	No	No	No
750iL	E32	1988-90	Yes	n/a	Yes	Yes	Yes	Yes	Yes	n/a	n/a	n/a	n/a	n/a
750iL	E32	1991-8/94	Yes	Yes	Yes	Yes	Yes	Yes	Yes	n/a	n/a	n/a	n/a	n/a
750iL	E38	9/94-8/96	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	n/a	n/a	n/a	n/a
750iL	E38	9/96-8/98	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	n/a	n/a	n/a
750iL	E38	9/98-10/01	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	n/a

ACRONYMS

Acronym	Description		
A	Out (ie: exhaust) German:Aus	BLS	Brake Light Switch
A	Processed Vehicle Speed Signal	BMBT	On Board monitor control panel, (Used with navigation,replacing MID/radio/tape head)
A/D	Analog/Digital		
AB	Airbag	BMW	Bavarian Motor Works/Bayerische motoren werke
ABL	Brake System Warning Lamp (2 Color)	BRS	Brake Signal
ABS	Anti-lock Braking System	BS	Battery switch (Storage mode E65/66)
AC	Air Conditioning (From ETK)	BS	Block Diagram
ACC	Active cruise control	BSD	Bit serial data interface
ACK	Acknowledge	BST	Battery Safety Terminal (MRS Activated)
ACS	Active Comfort Seats	BVA	Brake Pad Wear Indicator (From ETK)
ADB(X)	Automatic Differential Braking	Byteflight	Fiber optical bus for ISIS
ADS	Engine Intake Air Control	BZM	Center Console Armrest Control Center - Front
ADV	Windshield Wiper Pressure Control	BZMF	Center Console Armrest Control Center - Rear
AEGS	Automatic Electronic Gearbox Control	CAG	Crash Alarm sensor
AFM	Air Flow Meter/Vane type	CAN	Controller Area Network (Multiple ECU Controller) (1Meg data transfer)
AG	Aktiengesellschaft/ German for Inc.		
AG	Automatic Gearbox (Transmission)	CAN high	CAN communication 2.5V ref/talks at 3.5V
AGD	Suction Silencer (From ETK)	Can low	Can communication 2.5V ref/talks at 1.5V
AGR	Emission Reduction	CAN-Bus	Controller Area Network (Bus)
AGS	Adaptive Transmission Control	CANH-Bus	Can Bus, High
AH	Trailer	CANL-Bus	Can Bus, Low
AHK	Active Rear-axle Kinematics	CANP	Fuel Tank Ventilation Valve
AHK	Trailer Hitch (From ETK)	CARB	California air resources board
AHM	Trailer Module (Not for USA Models)	CAS	Car Access System
AHPS	Active Head Protection System	CBC	Corner Braking Control (ABS function to preventhydraulic overpressure to inside rear wheel.)
AIC	Automatic Interval Control (Rain Sensor)		
AKF	Activated Carbon Canister (From ETK)	CBS	Condition Based Service
AKI	Anti-knock index/octane rating	CBT	Computer Based testing
AKS	Controlled pressure windshield wiper	CC	Check Control
AKS	Active head restraint E65/66 ISIS system	CC	Compact Cassette
AKS	Pressure Regulating Device (From ETK)	CCM	Check Control Module
ALC	Automatic Light Control	Cd	Coefficient of drag
ALR	Automatic lock retractor	CD	Compact Disk
ALR	Automatic Lamp Range Adjustment	CD	Control Display
AMM	Air Mass Meter	CDC	Compact Disk Changer
AMP	Radio System Amplifier	CDS	CD Player (From ETK)
ARCNET	Attached Resource Computing Network	CEL	Celsius (From ETK)
ARI	Car Radio Information System (From ETK)	CIM	Chassis Integration Module
ARS	Active Roll Stabilization E65/66 (now DD-Dynamic Drive)	CO	Carbon Monoxide (From ETK)
		COMBI	Electronic Instrument Cluster
ASAP	Advanced side air bag protection	CON	Controller (I-Drive) Center Console
ASC	Automatic Slip control	CRC	Cycle redundancy check
ASC+T	ASC+ Traction Control	CSI	Customer satisfaction Index
ASC-EZA	ASC w/Engine Timing and Injection Intervention	Csi	Coupe Sport Injection
ASK	Audio System Controller (Kontroller)	CU	Copper (From ETK)
ASP	Outside Mirrors	CVM	Convertible Top Module
ASR	Self Starter Block Relay (From ETK)	CVT	Constantly Variable Transmission
AST	Automatic Slip Control (Marketing Term)	CW	Drag Coefficient (From ETK)
AT	Antenna (From ETK)	D/N	Data/Messages
AT	Remanufactured Part (From ETK)	D+	Alt Field also Known as KL 61
ATF	Automatic Transmission Fluid (From ETK)	D1	Xenon Light/ Gas Discharge (From ETK)
ATL	Exhaust Gas Turbo Charger (From ETK)	Dab	Digital audio broadcast
AUC	Automatic Air Recirculation	dB	Decibel
AUT	Automatic Transmission (From ETK)	DBC	Dynamic Brake Control (DSC function)
AVT	Antenna Amplifier Tuner	DBS	Dynamic Braking System
AWD	All Wheel drive	D-Bus	Diagnosis Bus (Same as Txd) (DIS/ModIC/GT1 communication line)
AZD	Tightening Torque Specifications (In TIS)		
B	Bus level	DCS	Dealer Communication System
B	Benzene (Gasoline)	DD	Dynamic Motor Drive
B+	Battery positive connection/power supply	DDE	Digital Diesel Electronics
B1	Fast Bus/Bus participant 1	DE	Diagnostic Unit
B2	Fast Bus/Bus participant 2	DEL	Delimiter
B3	Fast Bus/Bus participant 3	DFHA	Diagnosis power windows-open direction
BAT	Battery (From ETK)	DFHZ	Diagnosis power windows-close direction
BC	Board computer	DIN	German Industrial Standard. Equivelant to SAE
BC1	Body controller 1 MINI	DIS	Diagnosis and Information System
BF	Front passenger	DISA	Differential Air Intake Control
BFH	Control unit rear seat, passenger side	DIVA	Continuously Variable Length Intake Runners
BFS	Control unit , passenger seat	DK	Throttle Housing/valve
BL	Brake Light (From ETK)		

ACRONYMS

DK(s)	Throttle Valve German:Drossel Klapper	ETK	Electronic Parts Catalog (Also Epc)
DKB	Throttle W/ Brake Intervention	ETM	Electrical Troubleshooting Manual
DKE	Throttle Valve Increase (originating from ASC)	EV	Fuel Injector/ German:Einspritzventil
DKI	Throttle Position	EWS	Electronic Drive-away Protection
DKR	Throttle Valve Reduction	EWS I	Electronic Driveaway protection Version 1 (E36/E34/E31 -1/94 to 12/94)
DKS	Throttle Valve Switch	EWS II	Electronic Driveaway protection Version 2 (E31, E34, E36, E38, E39 1/95)
DKT	Throttle Position Signal	EWS III (3.2)	Electronic Driveaway protection Version 3 (3.2) (E38 1/97, E39 3/97)
DKV	Preset Throttle Position Value	EWS III (3.3)	Electronic Driveaway protection Version III (3.3) (E38 5/97, E39 9/97, E46, E52, E53 from intro)
DLC	Diagnostic Link Connector (OBD-II)	EWS III (3.3D)	Electronic Driveaway protection Version III (3.3) (E36/7 from 1999)
DME	Digital Motor Electronics	EZA	See ASC-EZA
DM-TL	Diagnostic Module Tank Leakage (EVAP)	F1-2.....	Fuse 1-Fuse 2.....etc.
DOHC	Dual Overhead Camshafts	FA	Driver
DR	Pressure Regulation	FB	Functional Description
DRS	Yaw sensor	FBC	Fading Brake Control
DS	Gasket Set (From ETK)	FBD	Remote Control Services
DSC	Dynamic Stability Control	FBI	Flexible bus interface
DSH	Diagnosis Door lock Heating	FBZV	Radio frequency Locking system
DSHD	Double Panel Sunroof E34 Touring	FBZV	Radio Frequency Locking System
DSP	Digital Sound Processing	FGR	Vehicle Speed Control (Cruise Control)
DTC	Diagnostic Trouble Code (SAE)	FH	Power Windows (German:Fernsterheber)
DTC	Dynamic Traction Control	FHK	Rear Heater/ Air Conditioner
DVD	Digital video disc	FLC	Automatic Light Control
DWA	Driveaway Protection System/German Diebstahlwarnanlage	FM	Frequency Modulation- FM radio reception
DWA-NS	Driveaway Protection emergency power siren	FRU	Flat Rate Unit/ 1 FRU equals 6 Minutes
DWS	Tire Pressure Warning System	FS	Crash Sensor
DZF	Output Speed Sensor	FTP	Federal test procedure
DZM	Revolution Counter (From ETK) (Tachometer)	FZV	Remote Keyless Entry System
DZV	Diagnosis Central Locking system	G/GEN	Generator/Alternator
e	Eta/Efficiency engine/e.g 325e	GAL	Speed Dependent Volume control
E	In (Ein)	GE	Yellow German:Gelb
EBA	Installation Instructions (From ETK)	GIU	Gearbox interface unit MINI
EBV	Electronic Brake Force Proportioning	GM	General Module (ZKE)
EC	Electrochromatic mirror	GMR	Yaw Moment Control
ECE	European Market Version (From ETK)	GN	Green German:Gruen
ECM	Electronic Control Module	GND	Ground German:Masse
ECO	Now Controller (CON)	GPR	Luggage compartment
ECO	Controller for I-drive System	GPS	Global Positioning System
ECU	Electronic Control Unit	GR	Gray German:Gru
ECVT	Electro Constantly Variable transmission	GRII	Cruise Control (Intro E38/E39)
EDC	Electronic Damper Control (From ETK)	GRS	Rotation (Yaw) Rate Sensor
EDC-K	Electronic Dampening Control - Continuous	GS	Belt Tensioner
EDK	Electronic Throttle Valve (M62TU/ME7.2)	GSR	Cruise Control
EDR	Electronic Throttle Control (M-motor MSS52/S54)	GW	Gateway/ gateway table
EDS	Pressure Regulator	GWK	Torque Converter Lock-up Control
EEPROM	Electronically Erasable Programmable Read Only Memory	GW-R	Gateway rule
EFH	Electric Window Lifter (From ETK)	H	Rear (Hinten)
EGS	Electronic Transmission Control	H/K	Heiz-und Klimaanlage/Heating and A/C
EH	Electronic-Hydraulic	H2	Xenon lighting system
EHC	Electronic Height Control	H2	Xenon Headlights
EIN	German for "in"	HA	Rear Axle (From ETK)
E-KAT	Electrically Heated Catalytic Converter	HC	Hydrocarbon
EKM	Electronic Body Module	HD	Heavy Duty (From ETK)
EKP	Electric Fuel Pump (German:Kraftstoffpumpe)	HDC	Hill Decent Control
EKS	Anti-trap contact strip (windows)	Heisse	Hot
ELV	Electronic Steering Lock E52	HFM	Hot Film Air Mass Meter
EM	Electro-mechanical	HG	Main Group Numbers
EMF	Electromechanical parking brake E65/66	HG	Manual Gearbox (Transmission)
EMF	Electro-mechanical Parking Brake	HHS	Rear window defogger
EML	Electronic Throttle Control (drive by wire)	HI	Helpful information
EML	Electronic Motor Load Regulation	HK	Hydraulic Bootlid/Tailgate
EMV	Electromagnetic compatibility	HKL	Hydraulic Trunk Lid Lift
EMV	Electro-magnetic Sensitivity (From ETK)	HKM	Bootlid/Tailgate Lift Module
EO	Component Location	HLM	Hot-Wire Air Mass Meter
E-OBDD	European On Board Diagnostics (EU Mandated)	hPa	Hecto Pascal (1 hPa = 1 mBar, 1000 hPa = 1 Bar atmospheric pressure at sealevel)
EPC	Electronic Parts Catalog (Also ETK)	HPS	Head Protection System
EPROM	Erasable/ Programmable Chip Memory (From ETK)		
ESS	Electronic Anti-theft Device		

ACRONYMS

HR	Heater Control (From ETK)	KOREL	Compressor Relay Signal
HVA	Hydraulic Valve Adjuster (From ETK)	KR	Contact Ring
Hz	Hertz (Cycle)	KSK	Knock Sensor Control
IB	Interior Lighting Control Signal	KSV	Cold Start Valve (German: Kaltstartventil)
I-Bus	Instrument Bus Communication Protocol	Kurbelwelle	German: Crankshaft
IC	Instrument cluster	KVA	Instant Economy Gauge
ID	Identifier	KVA	Fuel Consumption Signal/Value
IDC	Info on Diagnosis and Coding	KW	Crankshaft Angle German: Kurbel Winkle
IDE	Identifier Extension	KW	Crankshaft
IDE	Inter Frame Space	KW	Kilowatt (From ETK)
IHKA	Auto Integrated Heating and Air Conditioning	KWP 2000	Communication protocol (ISO 14230)
IHKAF	IHKA w/Microfilter	LC display	Liquid crystal display
IHKR	Integrated Heating and Air Conditioning Regulation Aju	LCM	Light Check Module (LCM III-E38/39)
IHKRF	IHKR W/ Microfilter	LDP	Leak Diagnosis Pump (EVAP)
IHKS	Integrated Heating and Air Conditioning - Standard	LED	Light Emitting Diode
IHPD	Internal High Pressure Deformation	LEV	Low Emission Vehicle (OBD II Emission Standard ST060)
IHR	Integrated Heater Control (From ETK)	LEW	Steering Angle Sensor
IKE	Instrument Cluster Electronics	LEW	Lateral Acceleration Sensor (ASC, DSC)
ILH	Interior Lighting, Rear	LHD	Left-hand Drive (From ETK)
ILV	Interior Lighting, Front	LKM	Lamp Control Module (E32, E34, E31)
IMS	Instant Mobility System (From ETK)	LL	Closed Throttle Position (Idle) (German: leerlauf)
INRS	Activate Sire Signal	LM	Lamp module
IPO	Inputs-process-outputs	LMM	Air Flow Meter/Sensor (German: Luftmengenmesser)
IR	Infrared	LMR	Light Alloy Wheel
IRS	Infrared Locking System	LoCAN	Low CAN bus DME-VVT
ISC	Idle Speed Control	LOGIC7	Top HIFI Amplifier
ISIS	Intelligent Safety Integration System	LRA	Vertical Headlight Aiming
ISN	Individual Serial Number (EWS II, III / DME)	LSM	Steering Column Memory
ISO	International Standards Organization	LSS	Steering Column Switch (Syn w/BC stalk switch)
ISOFIX	Standardized Mounts for Child Restraints	LSZ	Lamp Switching Center
ITS	Head Airbag Assembly/ Inflatable Tubular Structure	LVA	Air Supply System (For EHC System)
IVM	Integrated Power Supply Module	LWL	Optical waveguides
JBIT	Japan Bus interface telephone II	LWR	Vertical Headlight Aim Control
JNAV	Japan Navigation	LWS 5	Steering Angle Sensor
K	Kombi (Instrument Cluster)	M	Masse: German for Ground
K/CC	Instrument Cluster/Check Control	M	Engine
Kalt	German: Cold	M10	SOHC-8v/L4 (1.8, 2.0 liter)
KAT	Catalytic Converter	M102	SOHC-12v/L6 Turbo (3.2, 3.5 liter)
KATON	Converter Heating (Signal)	M12/6	DOHC-16v/L4 (2.0 liter)
K-Bus	Body Bus (Karosserie)	M12/7	DOHC-16v/L4 (2.0 liter)
K-Can P	Body CAN Peripherals	M12/9	DOHC-16v/L4 Turbo (2.0 liter)
K-CAN S	Body CAN System	M13	DOHC-16v/L4 Turbo (1.5 liter)
KD	Kick-Down (Auto Downshift on Acceleration)	M20	SOHC-12v/L6 + eta (2.5/2.7 liter)
KHI	Headphone Interface	M21	SOHC-12v/L6 Diesel (2.4 liter)
KI	Terminals	M30	SOHC-12v/L6 (2.8, 3.0, 3.2, 3.3, 3.4, 3.5 liter)
KL	Terminal Designation	M40	SOHC-8v/L4 (1.6, 1.8 liter)
KL15	Run Bus	M42	DOHC-16v/L4 DISA from 1992 (1.8 liter)
KL-15	Ignition Switch Run Position - Hot "On"	M43	SOHC-8v/L4 (1.6, 1.8 liter)
KL30	Battery Bus	M44	L-4 (1.8 liter)
KL-30	Battery + "Hot All the Time"	M44	DOHC-16v/L4 DISA (1.9 liter)(USA HC-II 1996, LEV 1997-2000)
KL31	Ground Bus	M50	DOHC-24v/L6 (2.0, 2.5 liter)
KL-31	Battery/Chassis ground	M50TU	DOHC-24v/L6 w/VANOS (2.0, 2.5 liter)
KL-31b	Return Negative via relay/switch	M52	DOHC-24v/L6 w/VANOS (Al block) (2.0, 2.5, 2.8 liter)
KL50	Start Bus	M52TU	DOHC-24v/L6 w/VANOS (Al block) (2.5, 2.8 liter)
KL-50	Ignition Switch Start Position	M54	DOHC-24v/L6 w/VANOS (2.5, 3.0 liter)
KL-54	Trailer Signals	M60	DOHC-32v/V8 (3.0, 4.0 liter)
KL-56	Headlights	M60 (old)	SOHC-12v/L6 Carbureted (2.0, 2.3 liter)
KL-56a	Main Beams and Indicator lamp	M62	DOHC-32v/V8 (3.0, 4.4 liter)
KL-56b	Dipped Beam	M62TU	DOHC-32v/V8 w/VANOS (4.4 liter)
KL-56d	Headlight Flasher contact	M70	SOHC-24v/V12 (5.0, 5.4, 5.6 liter)
KL-58	Park Lights	M73	SOHC-48v/V12 (5.4 liter)
KL-58g	Dash Lamp Dimming	M73TU	SOHC-48v/V12 (5.4 liter)
KL-61	Alternator Exciter or D+	M88	DOHC-24v/L6 (3.5 liter)
KLR	Ignition Switch Accessory Position	M88/1	DOHC-24v/L6 (3.5 liter)
K-LWL	Plastic optical waveguides(Fiber optics)	M88/2	DOHC-24v/L6 (3.5 liter)
Knockenwelle:	Camshaft	M88/3	DOHC-24v/L6 (3.5 liter)
KO	Compressor "On" Signal	MAL	Center Armrest
Kombi	Instrument Cluster		

ACRONYMS

MBC	Maximum Brake Control (DSC III)	OZS	Oil status sensor
M-Bus	IHKA/IHKB Stepper Motor Bus	P/N	Park/Neutral
MDK	Throttle valves	PB	Pin Assignments
MDK	Motorized Throttle Valve/system (EML Siemens E-46/MS42.0)	PBS	Parts Bulletin System (In TIS)
ME	Engine Intervention Signal	P-Bus	Periphery Module Signal Bus (E38 ZKE)
MF BF	Engine rear passenger	PDC	Park Distance Control
MF FA	Engine rear driver	PDC	Parts Distribution Center
MFC	Multi-function Controller	PGS	Passive Go System (Passive entry lock/unlock)
MFK 1	Multi Function Cable one	PM	Peripheral Module
MFK 2	Multi Function Cable two	PM	Power Module E65/66
MFL	Multi-Function Steering Wheel	PM-BT	Passengers door Module
MFU	Multi-Function Clock	PM-FT	Drivers door Module
MID	Multi-Information Display	PM-SB	Drivers door Switch Block
MIL	Malfunction Indicator Lamp (SAE), "Check Engine" Lamp	PM-SHD	Sun roof Module
MIR	Multi-Information Radio	PM-SM	Seat and mirror memory Module
MMC	Multi-Media Changer	PP	Impact Pad
MMI	Man Machine interface (Control display CD)	PTC	Positive Temperature Coefficient
Mmi BF	Engine center passenger	PT-CAN	Powertrain CAN Bus
Mmi FA	Engine center driver	PU	Production Interruption
MO	Engine top	PWG	Throttle Pedal Position Sensor/Potentiometer (EML only)
MoDiC	Mobile Diagnostic Computer	PWM	Pulse Width Modulated
MOST Bus	Media Oriented System Transport Optical Bus	PZEV	Partial Zero Emission Vehicle
MPEG	Motion picture export group 1	QC I	Pre-delivery Inspection
MRS	Multiple Restraint System (Front and Side Airbags)	QC II	1200 Mile Inspection
MRS II	Multiple Restraint System (Front, Side, Head and Optional Rear Airbags + Electronic Seal Belt Retainers)	QZV	Infrared Signal to GM for the Locks
MRS III	Multiple Restraint System (Front, Side, Head and Rear Airbags + Electronic Seal Belt Retainers, with Multi-Stage Firing Logic)	R	Terminal R (key position 1) Acc/radio position
MS	Motor Stugerat e.g MS 41.1 Siemens Control Module	RA	Repair Instructions (In TIS)
MSR	Engine Drag Torque Regulation (Decel slip control)	RAL	Standard Color (From ETK)
MTK	Partial Engine Cooling Concept/ M52TU	RAL	Aluminum Wheels (From ETK)
MU	Engine circulated air	RAM	Random Access Memory
Mun BF	Engine bottom passenger	RDC	Tire Pressure Control - Monitoring Radio Frequency
Mun FA	Engine bottom driver	RDS	Radio Data-Broadcast System
MV	Magnetic Valve (Solenoid Valve)	RDW	Tire pressure warning
N62	DOHC-32v/V8/VANOS (4.4 liter) New generation valvetronic	RDW	Tire Pressure Warning (DSC wheel speed monitor)
N73	DOHC-48v/V12 (5.4 liter) New generation valvetronic DI	Relais	German: Relay
n-ab	Rotational Speed, Transmission (RPM)	RGB	Red/Green/Blue, Video output Signal to BM
NAV	Navigation	RHD	Right-hand Drive (From ETK)
NAVI	Navigation Module	RK	Combination relay German:Relaiskombination
NG	Inclination Monitor/Tilt Sensor	RLS	Rain light sensor
NG	New Generation (As in N73 Engine)	RLS	Rain-light Sensor
NLEV	National Low Emission Vehicle Program	RM	Relay Module
NMHC	Non Methane Hydrocarbon	RM/AB	Relay Module, A 20 pole WS,B 20 pole SW
n-mot	Rotational Speed, Engine (RPM)	ROZ	Research Octane Rating/ Fuel Grade (From ETK)
NOX	Nitrogen Oxides/ Exhaust Gas Recirculation (From ETK)	RPA	Tire Puncture Warning (From ETK)
NS	Emergency current siren	RPS	Rollover Protection System
NSD	Rear Muffler (From ETK)	RPW	Tire Puncture Warning
NSL	Rear Fog Light-German Abbreviation	RS	Pink wire color/ETM
NSW	Front Fog Light-German Abbreviation	RS	Repair Kit (From ETK)
NTC	Negative Temperature Coefficient	RSW	Back-up Lamp (From ETK)
NW	Camshaft (From ETK)	RT	Red wire color/ETM
OBC	On-board computer	RxD	Ringin Diagnosis (Initiate Communication) (Receive Diagnostic Line)
OBD	On-board Diagnosis (SAE)	RZV	Direct Stationary Ignition/Coil Over Plug
OBD II	On-board Diagnostics II (1996 USA Federal mandate)	S Bat	Electronic Battery main swith
OLS	Oil level sensor	S14	DOHC-16v/L4 MotorSport (2.3, 2.5 liter)
OPPS	Optical ring connector above glove box for MOST	S38	DOHC-24v/L6 MotorSport (3.5, 3.6, 3.8 liter)
OR	Orange (ETM wire color)	S50	DOHC-24v/L6 MotorSport (3.0 liter) Euro
ORVR	On-Board fueling Vapor Recovery	S50US	DOHC-24v/L6 MotorSport (3.0 liter) USA
		S52	DOHC-24v/L6 w/VANOS (Al block) (3.0 liter)
		S54	DOHC-24v/L6 w/VANOS MotorSport (Al block) (3.0 liter)
		S62	DOHC-32v/V8 w/VANOS (5.0 liter)
		S70	DOHC-48v/V12 (5.6 liter)
		S70/2	DOHC-48v/V12 (6.1 liter)
		SA	Optional Equipment
		SAC	Self Adjusting Clutch
		SASL	Satellite, A-pillar Sensor Left - ISIS
		SASR	Satellite, A-pillar Sensor Right - ISIS

ACRONYMS

SAV	Sport Activity Vehicle	STVR	Satellite, Right Front Door
SB	Switch Block (Fuse Assignments)	SULEV	Super Ultra Low Emissions- (M56 2003)
SB FA	Drivers side switch block	SVS	Speech Processing System
SBE	Passenger Seat Occupancy Detection/ZAE,MRS Sys.	SWA	Windscreen washer system
SBFH	Seat Module, Passenger-side Rear	SWR	Headlamp Cleaning System (From ETK)
SBK	Safety Battery Cable	SWS	Windscreen wiper switch
SBSL	Satellite, B-pillar Sensor Left - ISIS	SWZ	Special Tool Listings (In TIS)
SBSR	Satellite, B-pillar Sensor Right - ISIS	SZL	Steering Column Switch Center
SBT	Si Techniques/ Tech Reference Information (In TIS)	SZM	Central Switch Center Module
SC BF	Stratification passenger	TAGE	Door Handle Electronics - Outside
SC FA	Stratification driver	TCM	Transmission Control Module
SCA	Soft Close Actuator/Automatic (E38 and E34 end gate)	TD	Engine Speed Signal (Ignition Pulse) (Hall or PM generator)
SD	Sliding Roof (From ETK)	TD	Technical Data (In TIS)
SD	Silencer/ Muffler (From ETK)	TDC	Top Dead Center
SE	Special Equipment (From ETK)	TE	Fuel Evaporation Control
SES	Voice Recognition System	TEL	Telephone Interface
SFAH	Seat Module, Driver's Side Rear	TEL	Telephone Control Unit
SFZ	Satellite, Vehicle Sensor Center - ISIS	TeICOMM	Telecommander CAN
SG	Control Unit	TEV	Evaporative Purge Control
SGS	Seat Integrated Belt System	THM-xx	Strausborg built Hydra-matic transmission
SH/SHZ	Independent heating	THZ	Tandem Master Cylinder (From ETK)
SHD	Sliding/ Lifting SunRoof (From ETK)	ti	Injector "On" Time (Duration)
SHD	Sunroof Module (Also SHDM)	TIS	Technical Information System
SI	Service Interval Indicator	TKL	Fuel filler flap
SI	Service Information (In TIS)	TL	Part Throttle / Load Signal
SI GR	Luggage compartment fuses	TLEV	Transitional Low emission vehicle/see (OBD II STO60 Doc)
SI HSF	Glove box fuses	TM	Door Module
SI MR	Engine compartment fuses	TMBF	Door module - Passenger door
SIA	Service Interval System (Ver. I, II, III, IV, Etc.)	TMBFH	Door module - Passenger door - Rear
SIB	Service Information Bulletin	TMBFT	Door Module - Passenger Side
SII	Service Interval Indicator	TMBFTH	Door module - Passenger door - Rear
SIL	Silicon (From ETK)	TMC	Traffic Message control
SIM	Safety Information Module - ISIS	TMFA	Door Module - Drivers Side - Front
SINE	Siren/Tilt Sensor	TMFAH	Door Module - Drivers Side - Rear
SKD	Steel Sliding Roof (From ETK)	TMFAT	Door Module - Drivers Front
SKE	Standard Shell Construction (134 pin Module/5 Modular connectors)	TMFATH	Door Module - Drivers Side - Rear
SKHD	Sliding Roof Vent	TOEHK	Exterior button bootlid/endgate
SKHD	Steel Sliding/ Lifting Roof (From ETK)	TP	Tandem Pump (From ETK)
SLEV	Super low emission vehicle	TPM	Tire pressure Monitor
SLV	Seat backrest adjustment	TPS	Throttle Position Switch/sensor
SM	Seat Module	TQ	Injection Quantity Diesel
SM/SPM	Seat and mirror memory	TR	Transistor (From ETK)
SM/SPM	Seat/mirror Memory	TR	Engine Speed Signal (RPM Counter) Also see n-mot. Cranshaft Reference
SMBF	Seat module seat adjusment passenger	TRG	Fuel Level Sensor (From ETK)
SMBF	Seat Module, Passenger Side	TRI	Technical Reference Information (Also SBT)
SMBFH	Seat module seat adjustment passenger rear	TRS	Battery Isolation Switch
SMFA	Seat module seat adjustment driver	TSD	Torsional Vibration Dampener (From ETK)
SMFA	Seat Module, Driver's Side	TSH	Door Lock Heating
SMFAH	Seat module seat adjustment driver rear	TSZ-h	Transistorized Coil Ignition/Hall Effect Transmitter
SMG	Sequential Manual Gearbox	TSZ-I	Transistorized Coil Ignition System (From ETK) / Inductive Pick-up
SMS	Short message service	tu	Technical Update (As in M50tu)
SOF	Start of frame	TWC	Three Way Catalytic Converter
SoRo	roller sun blind	TXD	Transmit and diagnosis line pin 20
SP	Schematic	TXD	Transmitting Diagnosis Line (pin 20 to 2000)
SP	Schematic	TXD II	OBD II Communication (20 pin - pin 17, OBD II pin 7)
SRA	Headlamp and foglamp cleaning	TZS	Thermotime Switch (German:Thermozeitschalle)
SRA	Headlight/Foglight Cleaning	U+	Battery voltage positive
SRS	Supplementary Restraint System (Airbag System)	U-batt	Battery Voltage
SRS	Supplementary Restraint System	uC	Micro controller
SSAF	Drivers satellite ISIS	UERSS	Rollover Bar (From ETK)
SSBF	Passenger satellite ISIS	UFBD	Universal radio remote control
SSD	Steel Sliding Roof (From ETK)	ULEV	Ultra Low Emission Vehicle (see OBD II STO60)
SSH	Satellite, Rear Seat Sensor - ISIS	URS	Rollover Protection System
ST	Connector Views	USIS	Ultrasonic Passenger Compartment Sensor
Steptronic	Transmission Shift Control	U-vers	Supply Voltage
STVL	Satellite, Left Front Door		

ACRONYMS

V	Vehicle Speed Signal (Raw signal to cluster)
V	Voltage
V	Front (Vorn)
VA	Load Cutout
VA	Front Axle (From ETK)
VA_D	Load Cutoff Roof Zone
VA_K	Load Cutoff Body Zone
VANOS	Variable Camshaft Timing
VAT	Front Axle Support (From ETK)
VE	Mechanical Distributor Pattern Inj.Pump
VEP	Distributor-type Injection Pump (From ETK)
VI	Violet Wire color/ETM
VID	Video Module
VIS	Intro Service training Video
VL	Front loadspeaker, left
VL	Full Load (Wide Open Throttle)
VM	Video Module
VSD	Front Muffler (From ETK)
V-SG	Valvetronic control unit
VVT	Valvetronic
WBG	Hazard Warning Switch (From ETK)
WIM	Wiper Control Module
WK	Torque Converter Lock-up Clutch
WL	Warning Lamp
WOT	Wide Open Throttle Syn. w/VL
WSS	Windshield (From ETK)
WT	Valvetronic Control Unit
WTB	Heat Exchanger, Passengers side
WTF	Heat Exchanger, Drivers side
WVB	Water Valve, Passengers side
WVF	Water Valve, Drivers side
WVL	Converter left front
XEN	Xenon Lights
Y-Factor	Processing in IHKA for Automatic control
Z	Central (Zentrum)
ZA	Signal request for Fuel And Injector Cutoff
ZAB	Ignition Fade-out Signal (Reduction)
ZAE	Central Airbag Electronics
ZAR	Ignition Timing fadeout (feedback signal comes from the KL1 Connection@ignition coil)
ZAS	Ignition Starter Switch (From ETK)
ZF	Zahnradfabrik Friedrichshafen/Trans. mfg
ZGM	Central Gateway Module
ZIG	Cigarette Lighter
ZK	Ignition Capacitor
ZK	Cylinder Head (From ETK)
ZKE	Central Body Electronics
ZKH	Cylinder Head Cover (From ETK)
ZKM	Central Body Module/Central Locking Module
ZLS	Auxiliary Air Valve
ZMS	Hydraulic Dampened Dual Mass Flywheel (From ETK)
ZS	Double Lock
ZS	Central Lock (From ETK)
ZSD	Center Muffler (From ETK)
ZV	Central Locking System (From ETK)
ZVM	Central Locking Module
ZW	Central Warning Light
ZWD	Idle Air Control Valve (IAC)
ZWV	Ignition Timing
ZWV	Ignition Timing Adjustment (Request Signal)

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	1968-77	2500, 2800 - 3.0s/sil/i, Bavaria'	4d Sedan
E6	1967-77	1600/1800/2000/2000/tii Touring	2d Coupe/3d Hatch
E9	1965-75	2.5cs - 3.0csi	2d Coupe
E10	1972-74	2002tii/2002tii	2d Coupe
E12	1975-81	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	1978-87	7-series	4d Sedan
E24	1977-89	6-series (628-635csi/m6)	2d Coupe
E26	1978-81	M1 with M88 Engine	2d Mid-engine Coupe
E28	1982-88	5-series	4d Sedan
E30	1983-91	3-series	2d Coupe/4d Sedan/ Convertible
E30/5	1987-90	3-series 'Touring'	5d Wagon
E30/16	1987-90	3-series lx	2d Coupe/4d Sedan (4wd)
E31	1990-97	8-series	2d Coupe
E32	1988-94	7-series	4d Sedan
E32/2	1988-94	7-series	4d Sedan Lwb
E34	1989-96	5-series	4d Sedan
E34/2	1989-96	5-series	5d Wagon
E36	1991-98	3-series	4d Sedan
E36/2	1992-99	3-series See-above	2d Coupe/convertible
E36/5	1994-98	3-series 'Compact'	3d Hatch
E36/6	1995-98	3-series 'Touring'	5d Wagon
E36/7	1996-2002	Z3	2d Roadster - U.s. Made
E67/8	1998-2002	Z3 Coupe	3d Hatchback - U.s. Made
E38	1995-2001	7-series	4d Sedan
E38/2	1995-2001	7-series	4d Sedan Lwb
E39	1997-2002	5-series	4d Sedan
E46	1999-	3-series	4d Sedan
E46/2	1999-	3-series	2dr Coupe
E46/3	1999-	3 Series	Sport Wagon
E46/5	1999-	3 Series	3 Dr Touring
E46/16	1999-	3 Series	All Wheel Drive
E52	2000-	Z8 Roadster	507 Style Roadster
E53	2000-	X5 SUV	Sport-utility/minivan/wagon
E60	2004-	5 Series	4dr
E65	2002-	7 Series	4dr
E66	2002-	7 Series	4dr Limo
E85	2003-	Z4	2dr Convertable Roadster
Z1	1987-91	Plastic-body Roadster	2d Convertible

ENGINE DESIGNATIONS

ENGINE	DISP.	CYLINDERS	ENGINE CONTROL	CHASSIS
M10	1.8	SOHC-8v/L4	Carb	E21, E30
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	Motronic 1.0	E28/E30/E34
M21	2.4	SOHC-12v/L6 Diesel	Diesel	E28/E30/E34/E36
M30	2.8/3.0/3.2/3.3/3.5	SOHC-12v/L6	Motronic 1.1	E23/E24/E28/E32
M40	1.6/1.8	SOHC-8v/L4		E30/E36
M42	1.8	DOHC-16v/L4	Motronic	E30/E34/E36
M43	1.8	SOHC-8v/L4		E36
M44	1.9 liter	4 cylinder 4 valves		E36/E46
M50	2.0/2.5	DOHC-24v/L6		E34/E36
M51			Diesel	
M50TU	2.0/2.5	DOHC-24v/L6 w/VANOS		E34/E36
M52	2.0/2.5/2.8	DOHC-24v/L6 w/VANOS (Al block)		E36/E39/E46
M52TU	2.5/2.8	DOHC-24v/L6 w/VANOS (Al block)		E36/E39/E46
M54	2.5/3.0	DOHC-24v/L6 w/VANOS		E39/E46
M56	2.8/3.0	DOHC-24v/L6 w/VANOS		E39/E46
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	3.0/4.4	DOHC-32v/V8		E31/E34/E38/E39
M62TU	4.4	DOHC-32v/V8 w/VANOS		E38/E39
M70	5.0/5.4/5.6	SOHC-24v/V12		E31/E32/E38
M73	5.4	SOHC-48v/V12		E38
M73TU	5.4	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 M6
M102	3.2/3.5	SOHC-12v/L6 Turbo		E23-745i Turbo
N62	4.4	DOHC-32v/V8/VANOS		E65/E66
N73	5.5	DOHC-48v/V12		E65/E66
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.
S52	3.0	DOHC-24v/L6 w/VANOS (Al block)		E36/E39/E46
S54	3.0	DOHC-24v/L6 w/VANOS (Al block)		E36/E39/E46
S62	5.0	DOHC-32v/V8 w/VANOS		M5/Z8
S70	5.6	DOHC-48v/V12		
S70/2	6.1	DOHC-48v/V12		McLaren F1

INTERNATIONAL ENGINE REFERENCE

to July 1, 1998

Model	Motor	KW	From	To	System
316 i	M 40 B 16..	73	09.88	12.90	M1.3
316 i	M 40 B 16..	73	12.90	02.94	M1.7
316 i	M 43 B 16..	75	09.93	00.00	M1.7.2
316 i Compact	M 43 B 16..	75	03.94	00.00	M1.7.2
316 i Coupe	M 43 B 16..	75	09.93	00.00	M1.7.2
316 i touring	M 40 B 16..	73	09.91	12.93	M1.3
316i					M 1.7.2
318 i	M 43 B 18..	85	09.93	00.00	ABS-Teves MK4-G
318 i	M 40 B 18..	83	09.87	04.93	M1.3
318 i	M 40 B 18..	83	12.90	02.94	M1.7
318 i	M 43 B 18..	85	09.93	00.00	M1.7.2
318 i Cabrio	M 43 B 18..	85	01.94	00.00	M1.7.2
318 i touring	M 40 B 18..	83	04.89	12.93	M1.3
318 i touring	M 43 B 18..	85	07.95	00.00	M1.7.2
318 is					M1.7.2
318 iS	M 42 B 18..	103	03.92	00.00	M1.7
318 iS	M 42 B 18.. 16V	100	09.89	08.91	M1.7
318 iS	M 42 B 18..	100	09.93	00.00	M1.7.2
318 iS Coupe	M 42 B 18..	103	03.92	00.00	M1.7
318 iS Coupe	M 42 B 18..	103	03.92	00.00	M1.7.2
318 tds	M 41 D 18..	66	09.94	00.00	EDC 1.3.1
318 tds Compact	M 41 D 18..	66	01.95	00.00	EDC 1.3.1
318 tds touring	M 41 D 18..	66	03.95	00.00	EDC 1.3.1
318 ti Compact	M 42 B 18..	103	10.94	11.95	M1.7.2
318i					M 1.7.2
320 i	M 52 B 20..	110	09.94	08.98	MS 41
320 i	M 20 B 20.. Kat.	90	12.86	03.93	M1.1
320 i	M 20 B 20.. Kat.	90	12.86	03.93	M1.3
320 i	M 50 B 20..	110	09.90	00.00	M3.1
320 i Cabrio	M 52 B 20..	110	09.94	00.00	MS 41
320 i Coupe	M 52 B 20..	110	09.94	00.00	MS 41
320 i Coupe	M 50 B 20..	110	03.92	00.00	M3.1
320 i touring	M 52 B 20..	110	03.95	00.00	MS 41
320 i touring	M 20 B 20..	90	01.88	08.91	M1.1
320 i touring	M 20 B 20..	90	01.88	08.91	M1.3
320i					M3.1
323 i	M 52 B 25..	125	06.95	08.98	MS 41
323 i Cabrio	M 52 B 25..	125	10.95	08.98	MS 41.1
323 i Coupe	M 52 B 25..	125	06.95	08.98	MS 41
323 i touring	M 52 B 25..	125	12.95	08.98	MS 41.1
324 d					Diesel EDC1.1.2
324 td	M 21 D 24..	85	09.87	08.91	EDC 1.1.2
324 td touring	M 21 D 24..	85	01.88	06.93	EDC 1.1.2
325 i	M 50 B 25..	141	09.90	00.00	ABS-Teves MK4-G
325 i	M 20 B 25.. Kat.	125	12.86	03.93	M1.1
325 i	M 20 B 25.. Kat.	125	12.86	03.93	M1.3
325 i	M 50 B 25..	141	09.90	00.00	M3.3.1
325 i Cabrio	M 50 B 25..	141	03.93	00.00	M3.3.1
325 i Coupe	M 50 B 25..	141	03.92	00.00	M3.3.1
325 i touring	M 20 B 25..	125	07.87	10.93	M1.1
325 i touring	M 20 B 25..	125	07.87	10.93	M1.3
325 iX	M 20 B 25.. Kat.	125	12.86	08.91	M1.1
325 iX	M 20 B 25.. Kat.	125	12.86	08.91	M1.3
325 iX touring	M 20 B 25..	125	06.88	10.93	M1.3
325 td	M 51 D 25..	85	09.91	00.00	EDC 1.2.3
325 tds	M 51 D 25..	105	05.93	00.00	EDC 1.3.1

Model	Motor	KW	From	To	System
325 tds touring	M 51 D 25..	105	09.95	00.00	EDC 1.3.1
325i					M3.1
328 i	M 52 B 28..	142	03.95	08.98	MS 41
328 i Cabrio	M 52 B 28..	142	03.95	08.98	MS 41
328 i Coupe	M 52 B 28..	142	03.95	08.98	MS 41
328 i touring	M 52 B 28..	142	03.95	08.98	MS 41
518 i					M 1.7.2
518 i	M 40 B 18..	83	09.89	06.94	M1.3
518 i	M 40 B 18..	83	09.89	06.94	M1.7
518 i	M 43 B 18..	85	12.93	12.95	M1.7.2
518 i touring	M 40 B 18..	83	03.93	00.00	M1.7
518 i touring	M 43 B 18..	85	12.93	00.00	M1.7.2
520 i	M 52 B 20..	110	01.96	08.98	MS 41
520 i	M 20 B 20..	95	01.88	08.91	M1.1
520 i	M 20 B 20.. Kat.	90	12.86	12.87	M1.1
520 i	M 20 B 20..	95	01.88	08.91	M1.3
523 i	M 52 B 25..	125	09.95	00.00	MS 41
524 td	M 21 D 24..	85	01.87	12.87	EDC 1.1.2
524 td	M 21 D 24..	85	03.88	08.91	EDC 1.1.2
525 e	M 20 B 27.. Kat.	90	12.84	12.87	M1.1
525 i	M 20 B 25..	125	01.88	08.91	M1.3
525 i	M 50 B 25..	141	09.89	12.95	M3.1
525 i	M 50 B 25..	141	09.89	12.95	M3.3.1
525 i touring	M 50 B 25..	141	11.91	00.00	M3.3.1
525 iX	M 50 B 25..	141	09.91	12.95	M3.3.1
525 iX touring	M 50 B 25..	141	02.92	00.00	M3.3.1
525 td	M 51 D 25..	85	03.93	12.95	EDC 1.2.3
525 td	M 51 D 25..	85	03.93	12.95	EDC 1.3.1
525 td touring	M 51 D 25..	85	09.91	00.00	EDC 1.2.3
525 td touring	M 51 D 25..	85	09.91	00.00	EDC 1.3.1
525 tds	M 51 D 25..	105	09.91	12.95	EDC 1.2.3
525 tds	M 51 D 25..	105	09.91	12.95	EDC 1.3.1
525 tds touring	M 51 D 25..	105	12.91	00.00	EDC 1.2.3
525 tds touring	M 51 D 25..	105	12.91	00.00	EDC 1.3.1
528 i	M 52 B 28..	142	09.95	08.98	MS 41
530 i	M 60 B 30..	160	09.92	12.95	ADS 2D
530 i	M 30 B 30..	138	01.88	08.91	EMS 2.1
530 i	M 60 B 30..	160	09.92	12.95	M 3.3
530 i	M 30 B 30..	138	01.88	08.91	M1.1
530 i	M 30 B 30..	138	01.88	08.91	M1.3
530 i touring	M 60 B 30..	160	09.92	00.00	ADS 2D
530 i touring	M 60 B 30..	160	09.92	00.00	M 3.3
535 i	M 30 B 35..	155	01.88	04.93	EMS 2.1
535 i	M 30 B 35..	155	01.88	04.93	M1.1
535 i	M 30 B 35..	155	01.88	04.93	M1.3
540 i	M 60 B 40..	210	09.92	12.95	ADS 2D
540 i	M 60 B 40..	210	09.92	12.95	M 3.3
540 i touring	M 60 B 40..	210	10.93	00.00	ADS 2D
540 i touring	M 60 B 40..	210	10.93	00.00	M 3.3
635 CSi	M 30 B 35..	150	05.82	08.88	M1.3
635 CSi	M 30 B 35.. Kat.	136	01.85	05.89	M1.3
730 i	M 30 B 30..	136	09.86	03.94	EMS 2.1
730 i	M 30 B 30..	136	09.86	03.94	M1.1
730 i	M 30 B 30..	136	09.86	03.94	M1.3
730 i	M 60 B 30..	160	06.94	00.00	M1.7.2
730i					EMS 2.1
735 i	M 30 B 35..	155	09.86	03.94	EMS 2.1
735 i	M 30 B 35..	155	09.86	03.94	M1.1
735 i	M 30 B 35..	155	09.86	03.94	M1.3

Model	Motor	KW	From	To	System
735i					EMS 2.1
740 i	M 60 B 40..	210	06.94	00.00	M1.7.2
750 i	M 70 B 50..	220	09.87	10.94	EMS 2.1
750 i					EMS 2.2
750 i	M 70 B 50..	220	09.87	10.94	M1.2
750 i	M 70 B 50..	220	09.87	10.94	M1.7
750 i	M 73 B 54..	240	09.94	00.00	OBD II / CARB (ISO)
750 iL					EMS 2.2
750 iL					M1.2
750i					M1.2
850 CSi	M 70 B 56..	279	08.92	00.00	M1.7
850 i					EMS 2.2
850 i/Ci	M 70 B 50..	220	04.90	12.94	EMS 2.1
850 i/Ci	M 70 B 50..	220	04.90	12.94	M1.7
M 5	S 38 B 38..	240	03.92	00.00	M 3.3
M 5	S 38 B 36..	232	10.88	06.92	M1.2
M 5 touring	S 38 B 38..	240	04.92	00.00	ADS 2D
M 5 touring	S 38 B 38..	240	04.92	00.00	M 3.3
Z 1	M 20 B 25..	125	11.88	06.91	M1.3

AUTOMATIC TRANSMISSION MODELS

1987-2002

MODEL	TRANSMISSION TYPE	EGS SYSTEM	Engine
E32 (735, 750), E34 (535iA '89)	4HP 22/24 (to 11/89)	1.XX	M20, M70
E32 735, 750), E34 (535)	4HP 22/24 (11/89-92)	1.XX	M20, M30, M70
E31 (non-US 850CSi)	4HP 24	2.28	M70
E36, E34 (525i)	A4S 310R (4L30E)	4.XX	M50
E36, E34 (525i)	A4S 270Z (THM-R1)	4.XX	M50
E36 (M3), E39 (530)	A5S 310Z (5HP-18)	7.XX	M60
E31 (840), E38 (740), E39 (540)	A5S 440Z (5HP-24)	7.XX, 8.XX	M62
E39 (528i), E46 (318, 323, 328)	A5S 360Z (5L60)	GS20	M52
E36	A4S 270R (GMPT R1)	AGS-8.34	M43, M44
E34	A5S 310Z (5HP-18)	AGS-7.32	M60B30
E39	A5S 310Z (5HP-18)	AGS-8.32	M52
E38, E39	A5S 310Z (5HP-18)	AGS-8.32	M51
E38, E39	A5S 440Z (5HP-24)	AGS-8.51	M62
E38, E39	A5S 440Z (5HP-24)	AGS-8.55	M62
E38, E39	A5S 560Z (5HP-30)	AGS-9.22	M60B40
E31 (850), E38 (750)	A5S 560Z (5HP-30)	9.XX	M70, M73
E38	A5S 560Z (5HP-30)	AGS-9.22	M62B44
E38	A5S 560Z (5HP-30)	AGS 9.22	M73
E46 (323, 328)	A5S 360Z (5L60)	GS20	M52TU
E46 (323, 328)	A5S 360Z (5L60)	GS20	M54TU

Trans. Model	Vehicle	Engine	System	Model Year
4HP 24 E39	750iL (E32)	M70	1.XX	1988-94
	850i, Ci			1990-94
A4S 310R	525i (E34)	M50,	4.XX	1990-92
		M50 TU		1993-95
	325i,is,ic	M50		1992
		M50 TU		1993-95
	318i,is,ic (ti 1995)	M42		1992-95
A4S 270R	328i,(is,ic, -97)	M52	8.XX	1996-98
	Z3 2.3/2.8	M52/TU		1997-2000
	323is,ic	M52		1998-99
	318i,(is,ic, -97), ti,	M44	8.34	1996-99
	Z3 1.9			
	5281 (E39)			1997-99
A5S 360R A5S 390R	323i/328i (E46)	M52TU	8.XX	1999-2000
	325it (E46)	M54		9/00-3/01
	325xi/it/330xi (E46)	M54		2001
	Z3 2.5/3.0	M54		2001
	528i (E39)	M52TU		9/99-9/00
	525i/530i (E39)	M54		9/00-3/00
	X5 3.0i (E53)	M54		2001

A5S 310Z	530i, it, (E34)	M60	7.XX	1994-95
	M3	S50 US		1995
	M3	S52		1996-99
A5S 325Z	323i (E46)	M52TU	8.36	3/00-9/00
	325i/330i (E46)	M54		6/00
	525i/530i (E39)	M54		3/01
A5S 440Z	840Ci (E31),	M62	8.XX	9/96-End prod.
	540i (E39),	M62/TU		1997
	740i/iL (E38)	M62/TU		1/97-2001
	X5 4.4i	M62TU		2000
A5S 560Z	740i/iL (E32)	M60	9.XX	1993-94
	540i (E34)			1994-1995
	840Ci	M60		1994-1995
	740i/iL (E38)			1995-1996
	750i (E38)	M73/TU		1995-2001
	840Ci (E31)	M62		1996-8/96
	850Ci (E31)	M73		1995-End prod.

ABS/ASC/DSC Brake and Traction Systems

SYSTEM	MODEL	YEAR START	DIAGNOSIS	CONTROL
ASC	E32/E34 - M30	1988	Flash Code	EML Throttle Valve
	E32 - M70	1988		Ignition Timing
	E31 - M70A	1990		Injection
ASC+T	E32 - M70	1990 to 4/91	Flash Code	EML Throttle Valve
	E31 - M70A			Ignition Timing
				Injection
				Rear Brakes
ASC+T	E32 - M70	1991	Diagnostic Link	EML Throttle Valve
	E31 - M70A	1991		Ignition Timing
	E31 - M70	1991		Injection
				Rear Brakes
ASC+T ADS II	E32 - M60	1993	Diagnostic Link	ADS Throttle Valve
	E31 - M60	1993		Ignition Timing
	E34 - M60	1993		Injection
				Idle Valve (MSR)
				Rear Brakes
ASC/5	E34 - 525i	1994	Diagnostic Link	ADS Throttle Valve
	E31 - M60/M62	1994		Ignition Timing
	E38 - M60/M62	1995		Injection
	E39 - M62/M52	1996		Idle Valve (MSR)
				Rear Brakes
TEVES MARK IV (OPEN)	E36 - 325i	9/93-8/94	Diagnostic Link	ADS Throttle Valve
				Ignition Timing
				Injection
				Rear Brakes
TEVES MARK IV (CLOSED)	E36 - 325i	9/94-8/95	Diagnostic Link	ADS Throttle Valve
	E36 - 328i	9/95-8/98?		Ignition Timing
	E36 - 318i	9/95-8/98?		Injection
				Rear Brakes
TEVES MARK IV G	E36 - 328iC	9/98-8/99	Diagnostic Link	ADS Throttle Valve
	E36 - 318ti	9/98-8/99		Ignition Timing
				Injection
				Rear Brakes
DSC II	E38 - 750i1	1995	Diagnostic Link	EML Throttle Valve
	E31 - 850i	1995		Ignition Timing
				Injection
				Rear Brakes

ASC - EZA	Z3 - M44	3/1/1996	Diagnostic Link	Ignition Timing
	E36 318i	3/1/1996		Injector Canceling Idle Valve (MSR) Rear Brakes
DSC III 5.3	E38 - 750i/iL	1998	Diagnostic Link	EML Throttle Valve
	E39 - 540	(07/97)		Ads Throttle Valve Ignition Timing Injection Rear Brakes
DCS 5.7	E38 - 750i	1999-		
	E39 - 540	1999		
	E46/16	9/00-		
TEVES MARK 20 EI	E46 - 328i	1999	Diagnostic Link	ADS Throttle Valve
	E46 - 323i	1999		Ignition Timing Injection Rear Brakes
TEVES DSC III MK60	E46	9/00	OBD-II	
	E36/7	9/00		

Communication Troubleshooting

1. If the scanner can't communicate with the control unit, please check the following:

- Does the car have this system installed.
- Ignition ON?
- Is the diagnostic connection okay? Check for a damage to the connector, pin drop outs, broken wires or corrosion.
- Check power supply at control unit in accordance with the factory circuit diagram.
- Is the control unit installed properly?
- If the control unit is new, check to see that the control unit was coded properly.
- If the car has been jumped or had a power failure, disconnect the control unit and reconnect after 5 minute to reinitialize the controller.

If the diagnostic circuit is shorted to ground or a faulty control unit is in vehicle, the green or yellow LED light on the scanner will remain on steadily when the scanner is connected to the vehicle diagnostic connector.

2. A faulty control unit can interrupt the diagnosis of other control units. Try removing other related control units from the CAN bus until the control unit under test responds.

CS2000 Internal Error Codes

00100 Communication between Base Unit and Module is interrupted. This can be caused by incorrectly seated module or corrosion or dirt on contacts or damaged software.

10006 Communication received from ECU is not understandable. This error most often occurs occur when the diagnostic line is held at a voltage different than that which is normal for the vehicle under test or when the information is distorted. This can caused by a faulty ECU, an ECU which is "diagnostically locked" or when the contacts to the diagnostic connector are dirty or corroded causing an incomplete connection.

Recommendation: Clean contacts, disconnect ECU from power and reconnect. For DMEs from 1988-94 perform a "pedal code test" to determine if the diagnostic circuit is functioning.

Link Failure - Communications received from ECU suddenly ceased or did not meet CRC checksum. See 1 above.

Link Failure

Link Failure and No Connection messages

- Check that the Ignition key is on (KOEO) or the Engine is running (KOER).
- Check power supply to the Scanner (10.5 to 14.5 Volts).
- Check for correct connection to the vehicle diagnostic connector.
- Check for short circuit in the vehicle diagnostic connector.
- Check that this function is available for this vehicle system.
- Check that the vehicle is equipped with the system under test.

Checking iScan/CS2000 Software Version and Coding Number

To find the software version number and programming date:

- 1) Insert a software module.
- 2) Power up the scanner.
- 3) Hold down any key on the keypad within 2 seconds and keep it depressed.

This will halt the boot process on the software information screen.

Technical Support

Technical support is for Hardware related issues only. Please do not call Technical Support for issues related to the vehicles diagnosis.

Before calling technical support please have the following information ready:

Shop Name:

Your Name:

Telephone:

Base Unit Serial Number: CS2000 remove rubber cover to view label on bottom of unit.

iScan turn on unit with no module inserted and press the ENTER button

CS2000 Software Version Number: (See previous page)

Make/Model of Vehicle Tested:

Model Production Date:

System Under Test: (Engine, Transmission, ABS...)

Battery Voltage:

Nature of Problem: Please describe as completely as possible. (No communication, no service reset, no data stream,...)

Did other systems test properly? (Engine, ABS, SRS, ...etc.)

Original reason for scanning vehicle (Owners complaint)

Any other notes to help aid in solving the problem.

Fax this page to : 941-927-1612

or call

Baum Tools Hardware Technical Support Hotline: 800-848-6657

or write

Email: tech@baumtools.com

Pay-as-you-go Diagnostic Hotline: 800-521-6538

For BMW tools and equipment call:

Baum Tools Unlimited Inc.

800-848-6657 USA/Canada

941-927-1414 International

941-927-1612 Fax

sales@baumtools.com

www.baumtools.com

**If the Scanner is unable to code a controller. Please fill out this form and
FAX back to 941-927-1612**

Cause - Usually this is due to a new controller variant Identification code that is not recognized by the ZCS encoder. In this case a message of "unidentified controller" or "controller not fitted" is returned.
In order to update the software to work with this new component the following information is needed.

Chassis Number
GM
SA
VN

This information is found in the EWS. Use the recode function in the ZCS/EWS and the information for chassis Number, GM, SA and VN will be displayed.

Next obtain the id information for the instrument cluster (KOMBI) and any other recognized controllers I information is in the BMW Diagnostic. This is needed to generate a new ZCS coding string.

KOMBI, Identification information
ABS/ASC/DSC, Identification information
DME, Identification information
EGS, Identification information

* PS Module Serial Number	
Current Software Version	

EWS

Chassis #		Part #		Coding Index	
GM		HW #			
SA		SW#			
VN		Diag Index			

Instrument Cluster

Part #		Bus Index	
Hardware #		Date	
Software #		Supplier	
Diagnostic Index:		CAN	
Coding Index:		Mod	

ABS/ASC/DSC

Part #	
Hardware #	
Software #	
Diagnostic Index:	
Coding Index:	
Supplier	
Date	

LCM

Part #		Supplier	
Hardware #		Date	
Software #			
Diagnostic Index:			
Coding Index:			
BUS			

IF Needed

DME

Part #	
Hardware #	
Software #	
Diagnostic Index:	
Coding Index:	
Supplier	
Date	

EGS

Part #	
Hardware #	
Software #	
Diagnostic Index:	
Coding Index:	
Supplier	
Date	

IHKA

Part #	
Hardware #	
Software #	
Diagnostic Index:	
Coding Index:	
Supplier	
Date	

ZKE

Part #	
Hardware #	
Software #	
Diagnostic Index:	
Coding Index:	
Supplier	
Date	

PDC

Part #	
Hardware #	
Software #	
Diagnostic Index:	
Coding Index:	
Supplier	
Date	

