ADVANCED DIAGNOSTICS

Unlocking Technology

BMW

(Version 1.4)

World Leaders In Automotive Key Programming Equipment

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™

CONTENTS

Applications are continually updated as vehicles are constantly added.

To ensure you have the very latest information,

the applications list is available via Info Quest - an online portal

containing vehicle technical data for key & remote programming

for all manufacturers.

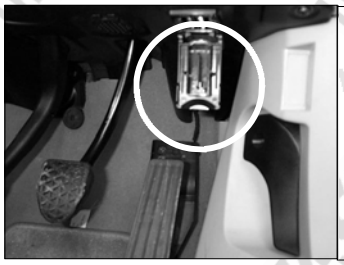
To view the latest vehicle applications please visit

Info Quest at

http://iq.advanced-diagnostics.co.uk/

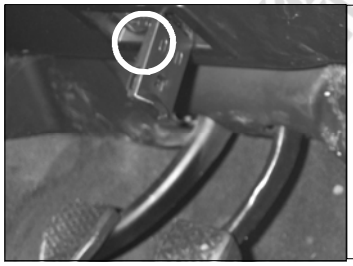
BMW & MINI Software	
ADS143	MINI EWS
ADS183	MINI & BMW CAS

BMW & MINI EWS

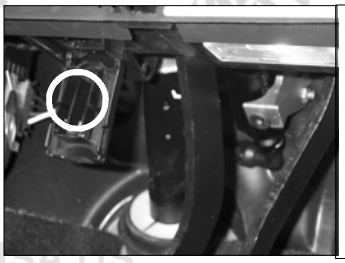


3 SERIES—E46

3 SERIES—E46



Z3

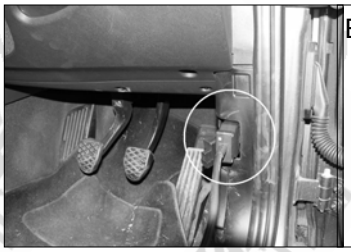


MINI

750

BMW & MINI CAS

E92 – 3 SERIES



E87—1 SERIES

E60 - 5 SERIES

Mini R56

BMW EWS3

The BMW Mini's are fitted with an EWS3.3 antitheft alarm system. For this, a transponder chip is incorporated in the key with a unique code for that transponder. An antenna or coil is mounted around the ignition switch, which provides power to the transponder chip i.e. the key has no battery. The coil also transfers data to and from the transponder chip.

When the ignition key is inserted into the ignition lock, the transponder chip is energised which in turn sends data to the EWS3 control unit. If this data is correct, the EWS enables the starter by way of a relay that is installed internally in the control unit it sends a coded signal to the engine ECU and an unlock signal to the ZKE(Body) control unit.

SYSTEM COMPONENTS

The system consists of the ignition key with integrated transponder chip, antenna mounted around the ignition switch, EWS Immobiliser Control Unit and Engine ECU.

Key With Integrated Transponder Chip

A transponder chip which can transmit and receive data is mounted into each key. The transponder is powered by the field that is built up around the antenna when the key is inserted into the ignition. Data is transferred to and from the transponder in the same way.

Every key/transponder is a unique part and can be differentiated by the control unit.

Any communication errors between keys and control units will be stored in the fault memory. If replacing keys, they must be ordered to the vehicle chassis from the dealer. When received, the keys will start the car as they are already pre-coded. However the remotes will require programming by following the procedure identified within this manual.

Antenna or Coil

This unit is mounted around the ignition switch

EWS 3.3 Control Unit

The control unit transfers data to and from the key. Once the received data from the key is has been validated as correct the control unit will enable the starter by way of a relay that is installed internally and also send a coded signal to the engine ECU. The control unit allows up to 10 keys to be programmed into the control unit (note this includes any keys that have also been deleted). Once the 10 key limit has been reached, the addition of any further keys is prohibited and the ECU has to be replaced.

Engine ECU (DME/DDE)

The EWS3 control unit sends a coded signal to the Engine ECU (DME/DDE) via the data link. The engine will not be allowed to start before this signal has been transferred.

If this coded signal is correct, the ECU will then enable the ignition and fuel supply.

Both the EWS3 and the Engine Control Unit contain identical variable codes that change following every start sequence. The engine will only start if the code sent by the EWS agrees with the corresponding code within the Engine control ECU.

These variable codes are programmed during the initial programming of the EWS3 and Engine Control module.

When either unit is replaced on the vehicle they have to be matched, which can only be done with the dealer equipment.

Notes:

Automatic Vehicles
On vehicles fitted with automatic transmission the start sequence will only be enabled by the EWS3 if the gear selector is in either the P or N position.

Run On Time
This feature enables the car to be started with any mechanically fitting key within 10 seconds, from the time the ignition key is in the '0' position

New Programmed Key
The first time a newly programmed key is used to start the vehicle, there will be a 1 –2 second delay. After this initial period the vehicle will start without delay as normal.

BMW CAS (EWS Incorporated)

General Notes:

Car Access System (CAS)

The CAS module is a control unit that handles the Immobiliser and alarm functions, allowing for the start of BMW vehicles. A transponder is integrated on the circuit board of each vehicle key. A reading coil is fitted around the key slot. The transponder is powered by the reader coil from the CAS control module and the key then sends its data to the CAS control module. If the data matches, the CAS control module enables the starter motor using a relay located in the control module itself and also sends a coded digital signal via a data link to enable the engine control unit.

Identical random codes are stored in the CAS control module and in the engine control module, these codes will change each time the vehicle is started.

Key identification and start procedure

The following procedure takes place after inserting the key into the slot:

- The transponder is powered via the reader coil and sends its data to the CAS control module.
- The CAS control module checks the data, verifies it, and (if correct) enables the starter motor and the engine control unit.
- After the engine has started, the CAS control module generates new data and transfers it to the transponder.
- A new code is also created and stored in the engine control module.

General notes:

The Body code (E60/E90/R56/R60 etc) can be found either on the bonnet gas struts or on the parcel shelf sticker

BMW—EWS3

REMOTE PROGRAMMING

VEHICLE SELECTION

+ ALFA
+ BMW
+ CHRYSLER
+ CITROEN
+ DAEWOO
+ INFINITI

VEHICLE SELECTION

+ MINI
EWS 3

THE FOLLOWING PROCEDURES ARE FOR PROGRAMMING REMOTES. KEYS ARE ORDERED TO CHASSIS AND WILL START THE VEHICLE WITHOUT PROGRAMMING.

NOTE : THIS IS FOR 2 BUTTON REMOTE CONTROLS ONLY.

VEHICLE SELECTION

+ COOPER
+ COOPER S
+ COUPE
+ CONVERTIBLE
+ ONE

VEHICLE SELECTION

TYPE 1
TYPE 2

SWITCH IGNITION ON

PRESS ENTER KEY

ECU IDENTIFICATION

PART NO : 06949289
HARDWARE NO : 17
SOFTWARE NO : 12

PRESS ENTER KEY

DIAGNOSTIC MENU

ECU IDENTIFICATION
FAULT CODES
> SPECIAL FUNCTIONS

PRESS ENTER KEY

DIAGNOSTIC MENU

PROGRAM REMOTE
READ REM DATA
ERASE REMOTES

PRESS ENTER KEY

REMOTES STORED

REMOTE 1:
*_3CB0D83D2B51FF_*
*FFFFFFFFC34F27_*
MEMORY 1: IN USE

PRESS ENTER KEY

THIS WILL THEN SHOW THE NEXT MEMORY LOCATION. WHEN THE BAR CODE DATA IS SHOWN AS ALL **F'S,** THIS INDICATES NO BAR CODE IS RECORDED AND IS CONFIRMED BY THE LINE MEMORY 2: FREE. PRESS ENTER KEY TO THEN DISPLAY MEMORY LOCATIONS 2, 3 & 4.

REMOTES STORED

REMOTE 1:
*_3CB0D83D2B51FF_*
*FFFFFFFFC34F27_*
MEMORY 12 IN USE

PRESS ENTER KEY

DIAGNOSTIC MENU

PROGRAM REMOTE
REMOTES STORED
> ERASE REMOTES

PRESS ENTER KEY

ERASE REMOTES

WARNING
YOU ARE ABOUT TO ERASE A REMOTE
CONTINUE?

✘ ✓

THE FOLLOWING SCREEN WILL ADVISE YOU TO CHECK THE REMOTE DATA BEFORE YOU PROCEED IF YOU HAVEN'T ALREADY DONE SO.

ERASE REMOTES

PLEASE ENTER
REMOTE POSITION
IF UNSURE PLEASE
READ REMOTE DATA

✘ ✓

ERASE REMOTES

PLEAS ENTER
REMOTE POSITION
1 2 3 OR 4

1	2	3	4	5
6	7	8	9	0

ERASE REMOTES

REMOTE POSITION
3

✘ ✓

BMW—EWS3

ERASE REMOTES

COMPLETE

IGNITION OFF / ON / OFF

DISCONNECT TESTER

CHECK REMOTE

OPERATION

SECURITY CODE

_ _ _ _ _ _ _ _ _ _ _ _ _

1	2	3	4	5
6	7	8	9	0

PROGRAM REMOTE

SWITCH IGNITION OFF

SWITCH IGNITION ON

SWITCH IGNITION OFF

REMOVE KEY FROM IGNITION

PRESS LOCK AND UNLOCK

ALTERNATE FOR 15 SECS

DIAGNOSTIC MENU

> PROGRAM REMOTE

REMOTES STORED

ERASE REMOTES

PRESS ENTER KEY

SECURITY CODE

N3B40CB3A40DAFF1

✗ ✓

PROGRAM REMOTE

PROCEDURE COMPLETE

PROGRAM REMOTE

PLEASE ENTER FREE REMOTE POSITION IF UNSURE PLEASE READ REMOTE DATA

✗ ✓

ENTER THE BOTTOM BAR CODE 16 DIGIT NUMBER INCLUDING ?, % SIGNS ETC

REPEAT PROCEDURE FOR PROGRAMMING MORE REMOTES

PROGRAM REMOTE

PLEAS ENTER REMOTE POSITION 1 2 3 OR 4

1	2	3	4	5
6	7	8	9	0

SECURITY CODE

_ _ _ _ _ _ _ _ _ _ _ _ _

1	2	3	4	5
6	7	8	9	0

PROGRAM REMOTE

REMOTE POSITION 3

✗ ✓

SECURITY CODE

FFFFFDB04DAFF10%

✗ ✓

ENTER THE TOP BAR CODE 16 DIGIT NUMBER INCLUDING ?, % SIGNS ETC

PROGRAM REMOTE

ENSURE DOORS AND WINDOWS ARE SHUT

PRESS ENTER KEY

BMW—CAS

PROGRAMMING

IMPORTANT INFORMATION

THIS FUNCTION DOES NOT FOLLOW MANUFACTURER'S PROCEDURE. RESULTS MAY BE UNPREDICATABLE. ADVANCED DIAGNOSTICS TAKE NO RESPONSIBILITY FOR VEHICLE ISSUES WHILST USING THIS SOFTWARE.

THIS SOFTWARE IS USED AT YOUR OWN DISCRETION.

NEW SOFTWARE WILL PROGRAM KEYS FITTED WITH PCF7945 TRANSPONDERS PROVIDED IT'S UNLOCKED. IT CAN ALSO PROGRAM PCF7936 TRANSPONDERS WITHOUT THE REMOTE

IF YOU BUY A KEY FROM BMW—IT WILL BE LOCKED AND WILL REQUIRE UNLOCKING.

VEHICLE SELECTION

+ ALFA
+ BMW
+ CHRYSLER
+ CITROEN

VEHICLE SELECTION

+ BMW
+ CAS

VEHICLE SELECTION

+ MINI
1 SERIES
3 SERIES
5 SERIES
6 SERIES
7 SERIES

VEHICLE SELECTION

2007—2010

PRESS 'START'BUTTON

PRESS ENTER KEY

ECU IDENTIFICATION

PART NUMBER:06953736
CODING INDEX:08
MANUFACTURE DATE:11/07/07
HARDWARE NUMBER:C4
SUPPLIER NUMBER:00
FUNCTION SOFTWARE:07.07.03
MECH KEY CODE:HA00004297
CAN

PRESS ENTER KEY

DIAGNOSTIC MENU

ECU IDENTIFICATION
> FAULT CODES
SPECIAL FUNCTIONS

DIAGNOSTIC MENU

> READ FAULT CODES
CLEAR FAULT CODES

DISPLAY FAULT CODES

FAULT CODE: A108
UNKNOWN FAULT CODES
EWS COMPILE ERROR

PRESS ENTER KEY

DIAGNOSTIC MENU

READ FAULT CODES
>CLEAR FAULT CODES

PRESS ENTER KEY

CLEAR FAULT CODES

PROCEDURE COMPLETE

PRESS ENTER KEY

DIAGNOSTIC MENU

ECU IDENTIFICATION
FAULT CODES
> SPECIAL FUNCTIONS

KEYS PROGRAMMED

DIAGNOSTIC MENU

> KEYS PROGRAMMED
PROGRAM KEYS
CLEAR KEYS
QUICK CLEAR

KEYS PROGRAMMED

PLEASE WAIT
GAINING ACCESS

KEYS PROGRAMMED

KEY ID 1:7F 5D 5D 96
KEY ID 2: C6 40 6D 96
KEY ID 3: 8F 4D 3D 96
KEY ID 4: EMPTY
KEY ID 5 : EMPTY
KEY ID 6: EMPTY
KEY ID 7: EMPTY
KEY ID 8: EMPTY
KEY ID 9 : EMPTY
KEY ID 10 : EMPTY

PRESS ENTER KEY

BMW—CAS

CLEAR KEYS

DIAGNOSTIC MENU

KEYS PROGRAMMED

PROGRAM KEYS

> CLEAR KEYS

ELV RESET

QUICK CLEAR

ERASE KEYS

KEY ID 1:7F 5D 5D 96
KEY ID 2: C6 40 6D 96
KEY ID 3: 8F 4D 3D 96
KEY ID 4:3C DF DA 96
KEY ID 5 : EMPTY
KEY ID 6: EMPTY
KEY ID 7: EMPTY
KEY ID 8: EMPTY
KEY ID 9 : EMPTY
KEY ID 10 : EMPTY

PRESS ENTER KEY

ENTER KEY TO BE ERASED

_ _

1	2	3	4	5
6	7	8	9	0

ERASE KEYS

ERASE KEY
4

✘ ✓

ERASE KEYS

PROCEDURE COMPLETE

PRESS ENTER KEY

PROGRAM KEYS

DIAGNOSTIC MENU

KEYS PROGRAMMED

> PROGRAM KEYS

CLEAR KEYS

ELV RESET

QUICK CLEAR

PROGRAM KEYS

KEY ID 1:7F 5D 5D 96
KEY ID 2: C6 40 6D 96
KEY ID 3: 8F 4D 3D 96
KEY ID 4: EMPTY
KEY ID 5 : EMPTY
KEY ID 6: EMPTY
KEY ID 7: EMPTY
KEY ID 8: EMPTY
KEY ID 9 : EMPTY
KEY ID 10 : EMPTY

PRESS ENTER KEY

THE FOLLOWING SCREEN WILL ASK DO YOU WANT TO LOCK THE KEY? SELECT THE - X - FOR NO

PROGRAM KEYS

DO YOU WANT TO LOCK THE KEY ?
PCF7936 TRANSPONDERS MUST BE LOCKED

✘ ✓

THE FOLLOWING SCREEN WILL ASK DO YOU WANT TO PROGRAM A REMOTE KEY? SELECT THE - TICK FOR YES

PROGRAM KEYS

DO YOU WANT TO PROGRAM A REMOTE KEY ?

✘ ✓

PROGRAM KEYS

KEY POSITION :10
Key Data
66DC521783568515138
CHECK VALUE:06

ENTER THE KEY DATA USING THE AD900 PRO BMW PRECODING.

PRESS ENTER KEY

ON THE AD900PRO SELECT SPECIAL FUNCTION FROM THE MAIN MENU

MAKE SURE THE KEY IS IN THE AD900PRO

MAIN MENU

1. Identification
2. Copy
3. Write code
4. **>Special Func.**
5. Test

NEXT: ↵ ↓↑

SPECIAL

1. PIN CODE
2. UNLOCK
3. RANDOM CODE
4. **>PRECODING**

NEXT: ↵ ↓↑

BMW—CAS

PROGRAMMING

ENTER NEW KEY PRECODING KEY ID 8 DIGITS FROM THE FROM AD900PRO

ONCE ENTERED SELECT THE OK - TICK SYMBOL

RANDOM CODE

WRITING
PLEASE WAIT .....!

NEXT: ↵ ↓↑

BMW REMOTE DATA

000BEB8000024B00

Check value 5D?

NEXT: ↵ ↓↑

SPECIAL

1. >BMW PRECOD-ING
2. FIAT PRECODING
3. VAG PRECODING

NEXT: ↵ ↓↑

BMW PRECODING

4CDEDA96
Successful..!

Remote Control?

yes: ↵ ↓↑ NO

SPECIAL

4CDEAC96
Successful..!

ENTER THE 20 DIGIT REMOTE DATA TO THE AD900 PRO -

CHECK VALUE IS THE SAME -

PROGRAM KEYS

KEY POSITION :10

REMOTE DATA

71B4EB8A5D624BB8

CHECK VALUE:5D

ENTER THE REMOTE DATA USING THE AD900 PRO BMW PRECODING.

PRESS ENTER KEY

ENTER NEW KEY ID

4C EF DA 96

1	2	3	4	5
6	7	8	9	0

BMW PRECODING

66DC00000000077540000

NEXT: ↵ ↓↑

ENTER THE 16 DIGIT REMOTE DATA TO THE AD900 PRO -

CHECK VALUE IS THE SAME -

PROGRAM KEYS

ENTER NEW KEY ID ?

4C EF DA 96

✗ ✓

BMW PRECODING

66DC00000000077540000

CHECK VALUE 06?

NEXT: ↵ ↓↑

BMW REMOTE DATA

0000000000000000

NEXT: ↵ ↓↑

> PROGRAM KEYS

PROCEDURE COMPLETE

PRESS ENTER KEY

BMW—EWS3

1. New keys, must be ordered to the vehicle chassis from the dealer. When received, the keys will start the car as they are already pre-coded. However the remotes will require programming by following the procedure identified within this manual.

2. Once the 10 key limit has been reached, the addition of any further keys is prohibited and the ECU has to be replaced.

3. Automatic Vehicles
On vehicles fitted with automatic transmission the start sequence will only be enabled by the EWS3 if the gear selector is in either the P or N position.

4. Run On Time
This feature enables the car to be started with any mechanically fitting key within 10 seconds, from the time the ignition key is in the '0' position

5. New Programmed Key
The first time a newly programmed key is used to start the vehicle, there will be a 1 –2 second delay. After this initial period the vehicle will start without delay as normal.

6. Remotes
Make a note of which memory locations are being used as this will be important when programming in new r emotes.

   Existing remotes are normally programmed in the first two memory locations.

   If you program a remote into a memory location that is already used, the Existing remote in this location will be overwritten. If this happens the only way to re-program the original remote is by having the original bar code information and following the **PROGRAM REMOTE** procedure.

BMW—CAS

If the transponder is blank it will be displayed by the AD900 as "HITAG2- password" – if the transponder has been written to it—will be displayed as "unknown" – **The correct transponders to be written are PCF7936, AKTP5.**
The delay between vehicle transponder recognition is about 5 seconds, **so be very careful that you do not insert your newly programmed key into the ignition within this time, otherwise you will not know whether it has been successfully programmed or not.** Give the car 10 seconds to settle in-between trying each key.

In general terms, instrument cluster messages in red are defined as those that cannot be rectified by a customer action, those in orange can be rectified by a customer action (such as inserting a programmed key).
A red steering wheel with a padlock next to it means that either the steering lock is jammed (try taking any pressure off of the steering wheel which may be caused by steering anomalies (such as the vehicle being parked up against a kerb or the steering being on full-lock—when the engine was previously turned off) and then inserting the ignition key and trying to start the engine. Otherwise, this points to an electronic misalignment or a failure of the column lock – check the fault codes and call Tech Support.

NOTE: 'Unpredictable results' usually relate to a vehicle that does not crank, cranks but will not start or starts but displays one or more warning lights on the instrument cluster.
Using the AD100 Pro you may have to clear the faults from the fault memory of some modules after coding the keys. If the warning light relates to the key programming itself, you will have to clear the fault counter for the ELV unit and cycle the ignition. If the warning light is a picture of a clock, you will need to reset the time and date using iDrive functions (if fitted) or instrument cluster.
Faults relating to vehicle service (a picture of a car in yellow) are related to CBS settings – check the iDrive menu for additional information or call Technical Support.

Special Note:

Some software functions do not follow the manufacturer's official procedure results may be unpredictable . Advanced Diagnostics take no responsibility for vehicle issues, whilst using this software.

Tips and Hints for BMW and Mini - AD100/AD900 Pro application

The routine to code a key to a BMW using AD100 Pro and AD900 Pro is:

Press the vehicle START button

Communicate with the AD100 Pro tester using the relevant vehicle (model codes are at the end of this document)
Go into Program keys
The tester will display "GAINING ACCESS" for approximately 30 seconds
The tester will display the current number of keys programmed
Press ENTER
The tester will display a 20 digit number:

Turn on the AD900 and select BMW—Pre-coding
Place the key/transponder to be written into the AD900
Type this number into the AD900 and press enter
The AD900 will display "WRITING"
If the writing fails you will see an error and then be given the choice to try again **TIP:** Mini keys are quite difficult to write to, because they do not fit inside the AD900 aperture. Hold the key face down at 90 degrees to the aperture:

Once the write function has completed the AD900 will say "Successful" and display an 8 digit (4 blocks of 2)

Tips and Hints for BMW and Mini - AD100/AD900 Pro application

Press ENTER on the AD100 Pro and you will be presented with a screen to allow you to enter the 8 digit code:

Notes:

If the transponder is blank it will be displayed by the AD900 as “HITAG2- password” – if the transponder has been written to it will be displayed as “unknown” – The correct transponders to be written are PCF7936, AKTP5. The delay between vehicle transponder recognition is about 5 secs, so be very careful that you do not insert your newly programmed key into the ignition within this time, otherwise you will not know whether it has been successfully programmed nor not. Give the car 10 seconds to settle in-between trying each key.

In general terms, instrument cluster messages in Red are defined as those that cannot be rectified by a customer action, those in orange can be rectified by a customer action (such as inserting a programmed key)
A red steering wheel with a padlock next to it means that either the steering lock is jammed (try taking any pressure off of the steering wheel which may be caused by steering anomalies (such as the vehicle being parked up against a kerb or the steering being on full-lock when the engine was previously turned off) and then inserting the ignition key and trying to start the engine. Otherwise, this points to an electronic misalignment or a failure of the column lock – There is a function to reset the ELV counter if this happens.

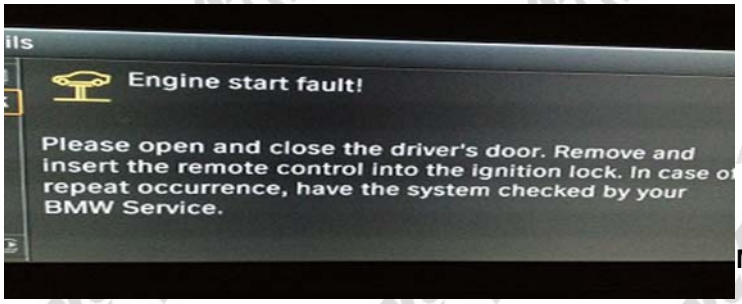
The following information relates to indicator symbols displayed in the centre of the instrument cluster or on the iDrive display (if fitted) in the centre of the dashboard.

A red key with a line through means that the key memory is corrupted or that the ELV is misaligned. Check the faults in the fault memory and reset the ELV counters

An orange key with a line through it means that this key is not valid for the car or no transponder was detected.

Insert a programmed key, or program a key.

.An orange picture of a car on a ramp is usually cleared when a programmed key is inserted in the ignition or there are other faults present (such as ABS or Traction control – look at the iDrive for additional messages) – check the faults are erased from the fault memory all control units (global clear), also check the brake lights. It may also be accompanied by an iDrive message indicating the area of the fault. Call up the iDrive message.



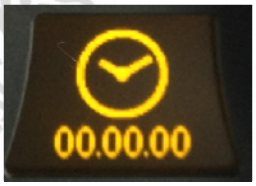
Message:

Open and close the driver's door, remove and insert the key, then scroll down to "OK" on the iDrive message and press the iDrive button to clear the message.

A red picture of a car on a ramp means that the ELV counter needs to be reset, it can sometimes be overcome by pressing the brake pedal prior to starting. Also check all lighting.

If the key is incorrectly or partially coded you may see an error relating to the remote control on the cluster this will result in a car that starts initially, displays this warning message and then displays the key not recognised symbol on the cluster when the ignition is turned off and back on again. Re-check the coding values you entered when programming the key as it is likely one of them was incorrect.

A picture of the key with a battery next to it indicates that the remote battery inside the key is discharged. This can be rectified on vehicles without convenience access by inserting the key into the ignition, starting the engine and leaving the engine running for some time - the remote control battery will be charged during normal vehicle operation - or you can use the AD900 TEST function to charge the battery. On vehicles with convenience access you must replace the remote control battery. Simon.



A picture of a clock with zeroes below it is an indication that the time and date needs to be set on the vehicle - use the iDrive (if fitted) or instrument cluster buttons to set the date and time.

Synchronisation in cases of a problem:

If for some reason the key that you just made is not working (the CAS recognizes the key but the engine does not start – which if you know CAS is a very specific issue of course), then the DME to CAS may be de-synchronised.

Insert the original key and try to start the engine. If it does not start with the original key then follow these steps:

Carry out a global clear of fault codes, if you see some error that cannot be deleted (most frequently this is an "EWS manipulation error", which relates to the BSW registry), then you have to disconnect the battery, wait about 5 mins, re-connect it and clear the errors. This time there shouldn't be any DTCs left. You may then need to do an alignment between DME and CAS after that.

If in doubt please call Tech Support

NOTE: At present we are not able to code keys to vehicles with PROX, these vehicles can be identified by a series of ridges on the door handle:

TIPS & HINTS

E

Model Type	Model code	Body style	Year range	Key type	System	On tester
1 Series	E81	3 door hatch	12/2004 → 09/2009	Slot	CAS	Y
1 Series	E82	Coupe	12/2004 → 03/2010	Slot	CAS	Y
1 Series	E87	5 door hatch	09/2004 → 2011	Slot	CAS	Y
1 Series	E88	Cabriolet	12/2004 → 03/2010	Slot	CAS	Y
1 Series	F20	5 door hatch	2011→	Slot	CAS	N
3 Series	E36	All	up to 2000	Mech	EWS2/3	N
3 Series	E46	All	1998 - 2005	Mech	EWS3/4	N
3 Series	E90	4 door saloon	12/2004 → 03/2010	Slot	CAS	Y
3 Series	E91	Estate	12/2004 → 03/2010	Slot	CAS	Y
3 Series	E93	Cabriolet	03/2007 - 03/2010	Slot	CAS	Y
3 Series	F30	4 door saloon	2012→	Slot	CAS	N
3 Series + M3	E92	Coupe	09/2007 - 03/2010	Slot	CAS	Y
5 Series	E39	4 door and Estate	1995 - 2003	Mech	EWS2/4	N
5 Series	E61	Estate	2003 - 2010	Mech or Slot	CAS	Y
5 Series	F07	GT	2009 →	Slot	CAS	N
5 Series	F10	4 door saloon	11/2009 →	Slot	CAS	N
5 Series	F11	Estate	2009 →	Slot	CAS	N
5 Series + M5	E60	4 door saloon	2003 - 2010	Mech or Slot	CAS	Y
6 Series	E63	Coupe	2003 - 2010	Slot	CAS	Y
6 Series	E64	Cabriolet	2003 - 2010	Slot	CAS	Y
6 Series	F12	Convertible	2010 →	Slot	CAS	N
6 Series	F13	Coupe	2010 →	Slot	CAS	N
7 Series	E65	4 door saloon	2002 - 2008	Slot	CAS	Y
7 Series	E66	4 door saloon LWB	2002 - 2008	Slot	CAS	Y
7 Series	E67	Hi security line	2002 - 2008	Slot	CAS	Y
7 Series	E68	Hybrid	2002 - 2008	Slot	CAS	Y
7 Series	F01	4 door saloon	2008 →	Slot	CAS	N
7 Series	F02	4 door saloon LWB	2008 →	Slot	CAS	N
7 Series	F03	Hi security Line	2009 →	Slot	CAS	N
7 Series	F04	Hybrid	2009 →	Slot	CAS	N
8 Series	E31	Coupe	1990 - 1999	Mech	EWS1	N
X1	E84	SUV	2010 →	Slot	CAS	?
X3	E83	SUV	2004 - 2010	Mech	EWS3	N
X3	F25	SUV	2011→	Slot	CAS	N
X5	E53	SUV	1999 - 2006	Mech	EWS3	N
X5	E70	SUV	2007 onwards	Slot	CAS	Y
X6	E71	SUV	2008 onwards	Slot	CAS	Y
X6	E72	SUV Hybrid	2008 onwards	Slot	CAS	Y
Z3	E36/4	Coupe	1996 - 2002	Mech	EWS2/3	N
Z4	E85	Coupe	2002 - 2008	Mech	EWS3	N
Z4	E89	Coupe	2009 →	?	?	?
Z4 M Coupe	E86	Coupe	2006 - 2008	Mech	EWS3.3	N

Model Type	Model code	Body style	Year range	Key type	System	On tester
One and Cooper	**R50**	2 door	2001 - August 2006	Mech	EWS + BC1	Y
Convertible	**R52**	Convertible	2004 - August 2008	Mech	EWS + BC1	Y
Cooper S	**R53**	2 door	2001- August 2006	Mech	EWS + BC1	Y
Clubman S and D	**R55**	Clubman 2/4 door	2008 - 2011	Slot	CAS 3	Y
One, Cooper S and D	**R56**	Hatchback	2007 - 2011	Slot	CAS 3	Y
Convertible	**R57**	Convertible	2009 - 2011	Slot	CAS 3	Y
Cooper S and SD	**R58**	Coupe	December 2010 on	Slot	CAS 3	Y
Cooper S and SD	**R59**	Roadster	January 2010 on	Slot	CAS 3	Y
One and D. Cooper D, S and SD	**R60**	Countryman	January 2010 on	Slot	CAS 3	Y

Model code	Coding information	Notes
R50 R52 R53	**2 button remote (up to July 2004) coded with tester, 3 button remote (July 2004 onwards) coded manually. Transponder pre-coded from dealer - no programming.**	Bonnet handle on the O/S, DLC in front of the brake pedal and headlights are integrated into bonnet
R55 R56 R57	**Slot key programmed with tester, remote coded at same time + manual synchronisation**	Bonnet handle on N/S, DLC next to O/S kick panel and headlights stay in body when bonnet lifted
R58 R59 R60	**Slot key programmed with tester, remote coded at same time + manual synchronisation**	Bonnet handle on N/S, DLC next to O/S kick panel and headlights stay in body when bonnet lifted

PRECAUTIONS

IMPORTANT : PLEASE ENSURE ALL PRECAUTIONS ARE OBSERVED AS INDICATED AT THE FRONT OF THE OPERATING MANUAL.

IN PARTICULAR : For vehicles fitted with STOP/START technology, the battery leads must not be shorted together when the battery is disconnected as this can lead to damage to the car and potential personal injury.

BMW—EWS3

3 Series E36 (94 to 01)
5 Series E34 (94 to 96)

Infrared Transmitter

1. UNLOCK vehicle using the UNLOCK button.
2. Enter vehicle & CLOSE driver's door.
3. Switch ignition ON and OFF
4. Programming mode activated
5. Point key at infrared receiver (fitted in rear view mirror), <15cm.
6. Press & hold UNLOCK button.
7. Press LOCK button 3 times within 10 sec, keeping UNLOCK button depressed.
8. Release UNLOCK button.
9. LED on the key flashes slowly for 10 seconds.
10. System should lock & unlock to show programming is successful.
11. Repeat above procedure if LED doesn't flash or central locking doesn't work.
12. Repeat procedure for remaining remotes.

Notes

- Maximum of 4 remotes can be programmed
- Programming procedure must be completed within 30 sec for each key.

Radio Frequency Transmitter

1. UNLOCK vehicle using the UNLOCK button.
   Note : If vehicle not unlocked with UNLOCK button, programming procedure is blocked for 15 mins.
2. Enter vehicle & CLOSE driver's door.
3. Switch ignition ON and OFF
4. Programming mode activated
5. Press & hold UNLOCK button.
6. Press LOCK button 3 times within 10 sec, keeping UNLOCK button depressed.
7. Release UNLOCK button.
8. Certain models: LED on the key flashes slowly for 10 seconds.
9. System should lock & unlock to show programming is successful.
10. Repeat above procedure if LED doesn't flash or central locking doesn't work.
11. Repeat procedure for remaining remotes.

Notes

- Maximum of 4 remotes can be programmed
- Programming procedure must be completed within 30 sec for each key.

3 Series E46 (98 to 06)
5 Series E39 (96 to 03)
7 Series E38 (94 to 02)
Z3 E36 (01 to 02)

Infrared Transmitter

1. UNLOCK vehicle using the UNLOCK button.
2. Enter vehicle & CLOSE driver's door.
3. Switch ignition ON and OFF
4. Programming mode activated
5. Point key at infrared receiver (fitted in rear view mirror), <15cm.
6. Press & hold UNLOCK button.
7. Press LOCK button 3 times within 10 sec, keeping UNLOCK button depressed.
8. Release UNLOCK button.
9. LED on the key flashes slowly for 10 seconds.
10. System should lock & unlock to show programming is successful.
11. Repeat above procedure if LED doesn't flash or central locking doesn't work.
12. Repeat procedure for remaining remotes.

Notes

- Maximum of 4 remotes can be programmed
- Programming procedure must be completed within 30 sec for each key.

BMW—EWS3

X5 E53 (99 to 06)
Z8 E52 (00 to 03)

1. UNLOCK vehicle using the UNLOCK button.
2. Enter vehicle & CLOSE driver's door.
3. Switch ignition ON and OFF
4. Programming mode activated
5. Point key at infrared receiver (fitted in rear view mirror), <15cm.
6. Press & hold UNLOCK button.
7. Press LOCK button 3 times within 10 sec, keeping UNLOCK button depressed.
8. Release UNLOCK button.
9. System should lock & unlock to show programming is successful.
10. Repeat above procedure if LED doesn't flash or central locking doesn't work.
11. Repeat procedure for remaining remotes.

Notes

- Maximum of 4 remotes can be programmed
- Programming procedure must be completed within 30 sec for each key.

5 Series E60 (04 to 06)
6 Series E63/E64 (04 to 06)
7 Series E65/E66 (02 to 06)
X3 E83 (04 to 06)
Z4 E85 (03 to 06)
Can only be programmed using dealer diagnostic tool

Mini (3 button Remote)

Procedure

1. Models with 3 button remotes must be programmed manually by cycling the key in the ignition from OFF to ON and back to OFF.
2. Take the key out from lock.
3. Press the unlock button and keep it pressed.
4. Press lock button 3 times and release both buttons.
5. You should hear central locking. Test remotes.

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AD35 is an innovative remote control tester developed to assist with the diagnosis of all types of (IR) Infra Red & (RF) Radio Frequency remote controls for all makes & models.