

# Introduction

Dear customer, congratulation to purchase of an unique electronic anti-theft device for your vehicle – ATS 02. During its development, authors have used many years of experience with BMW vehicle electronics. Device is based on the latest technologies in field of microcontrollers, software, data protection and cryptography. ATS02 includes a lot of functions, which are very different to other immobilizers on the market. Please read the instructions very carefully and familiarize yourself with all the device functions and methods of control.

We wish you driving pleasure without worrying about the safety of your vehicle and many happy miles.

Auto SOWA, s.r.o.

## Device description

Immobilizer ATS02 (**A**dvanced **T**hiefproofing **S**ystem) was developed specifically for BMW vehicles in terms of increasing theft protection and control comfort. It is a second generation of the system based on its successful predecessor ATS01.

The immobilizer is directly integrated in the vehicle electronic system and for its control, only the standard BMW control elements are used. ATS02 also contains a telematic platform with a GPS/GLONASS positioning module and GSM/GPRS/Bluetooth communication, so it is possible to control all its function via a smartphone. The software of each immobilizer is secured by a unique 128 bit asymmetric encryption key, which provides the highest level of data protection. During the development phase, a so-called redundancy function was taken into account - in case of break in the primary protection circuits all blocking functions are at least doubled, while the secondary protection then provides the same level of security as the primary. Due to this feature, unauthorised starting of the vehicle is practically impossible.

A further safety feature of ATS02 is an additional engine start protection via 2-digit code selectable via multifunction steering wheel. This function prevents starting of the car also in case of abuse of Comfort Access System. If necessary, the ATS02 automatically activates the original BMW alarm (if fitted).

The gateway to the safety of your vehicle is a personal **PIN** code that you will receive after installation of the immobilizer. Keep the code in safe and secure place as it is the only possibility to enable your blocked vehicle. PIN code can not be read again – in the case of loss, the only possibility is to generate a new PIN by an authorised service technician (if a telematic version is fitted, you can check your PIN also via mobile application).

The development team have also considered the future. The ATS02 software is continually evolving. Device has been designed so that its software can be updated remotely or via OBD socket. Individual settings according customer needs are also possible. A standard feature of the ATS02 is the full OBD diagnosis with the

possibility to read the history of alarms, the use of keys, fault memory, etc.

## ATS02 function overview:

1. Activation and deactivation of immobilizer by original remote control or by door handle\*
2. Checking all doors, trunk lid and bonnet\*
3. Recognition of authorised BMW key during engine start
4. Checking the disconnection of the control units and battery
5. Monitoring the tilt and vibrations of the parked vehicle
6. Service mode, service PIN code
7. Disabling the OBD communication (except service mode)
8. More possibilities to disable engine start /gear switch
9. Blocking the communication on CAN bus in case of tampering
10. Emergency warning function – activation of the horn\*
11. Enabling the blocked vehicle using personal PIN code
12. Additional engine start protection via 2-digit MFL pin code
13. Full remote control via smartphone (Android, iOS)\*
14. Diagnosis, programming and encoding via OBD socket
15. Quick diagnosis – fault codes are displayed via clock display
16. Fail safe mode

## Immobilizer control

### Activation:

- a) Lock the vehicle by mechanical key/remote control, **or**
- b) Lock the vehicle by door handle (only with option 322 – Comfort access)\*

If the vehicle is locked with open passenger/ rear door, or front/ rear lid, ATS will wait 15 seconds for closing it. This period is indicated by acoustic signal in the instrument cluster.

### To activate immobilizer:

During this period, close affected door or lid. Acoustic signal is switched off and ATS01 will be activated. If the 15 seconds period is exceeded, ATS01 will be activated in current state – even with opened door or lid.

### Note:

If the affected door or front/ rear lid is closed after 15 seconds, ATS01 will update all the registers and the new state will be taken as default. The acoustic signal could be cancelled also by unlocking the vehicle by remote control or by door handle (option 322). ATS01 is deactivated in this case.

### Deactivation:

- a) Unlock the vehicle by remote control, **or**
- b) Unlock the vehicle by door handle (only with option 322 – Comfort access), **or**
- c) Unlock the vehicle by mechanical key and during 15 seconds insert the transponder into the starting slot (E-series) or switch **On** ignition (F-series). During this period, both turn signal indicators are flashing in the instrument cluster and vehicle horn is activated\*. If the period is exceeded, vehicle will be automatically blocked.

### Attention:

ATS02 will remain active if the vehicle is locked and rear hinged door or tailgate is opened using the remote control.

### Vehicle start:

After inserting the key/ transponder into the starting slot or pressing the start button (option 322 – Comfort access), an automatic data comparison of the all transponders is performed between the vehicle and ATS02. If all the data match, an acoustic signal sounds and turn indicators will flash once. If the data are different, ATS02 will automatically disable the vehicle and the yellow symbol of crossed key is displayed in the instrument cluster, accompanied by audible alarm and alert in the central information display.

### To start the vehicle:

- a) Insert the original transponder into the starting slot, press brake pedal and then press Start button, **or**
- b) Press brake pedal and then press Start button (option 322 – Comfort access)

## Service mode

Before any service work it is necessary to switch the vehicle into service mode. In this mode all ATS02 functions are disabled and OBD diagnostic socket is active. Service mode will remain active even after disconnecting and reconnecting the battery.

### Attention!

Please always inform service personnel that your vehicle is equipped with ATS02 system!

### Activation of service mode:

- a) All vehicles: Insert the original key- transponder into the starting slot and /or switch on the ignition (if an additional start protection is enabled, enter also 2-digit code via multifunction steering wheel).
- b) Using iDrive controller or board computer lever set the date to **12.12.2005** (see vehicle owner manual)
- c) Remove transponder from the slot or switch the ignition off. As acknowledgement, right turn indicator check light will flash 5 times accompanied with an audible signal.

### Note:

After activation of Service mode, previous date is automatically restored. All immobilizer functions are deactivated.

### Deactivation of service mode:

- a) Close all doors, engine hood and boot lid
- b) During max. one minute lock and unlock the vehicle 5 times using original remote control. Deactivation will be confirmed by additional blink of both turn indicators or low beam lights.\*

### Attention:

When picking up the vehicle from service, **always** check if the service mode is deactivated. If not, deactivate it by yourself!

## Disabled vehicle

If the vehicle is disabled, right and left turn indicator check lights are blinking alternately in the instrument cluster. Except it, an error code 00:XX is displayed for owner information on the vehicle clock display after switching the ignition on.

00:31	Manipulation of key data in CAS internal memory
00:32	Physical disconnection of CAS control unit
00:33	Disconnection of vehicle battery
00:34	Unauthorized vehicle access
00:35	CAS not responding to ATS01 data telegrams
00:36	Wrong PIN code entered 3 times
00:37	Excessive vehicle tilt / shaking

Vehicle could be enabled either by entering **personal PIN code** (via iDrive or smartphone), by elapsing the waiting period (optional), by smartphone or by authorized service technician. Please keep your personal PIN code in safe place. You will receive the PIN code after installation of the immobilizer.

### Attention!

Any complaints or claims due to absence of personal PIN code will be rejected!

### Enabling the vehicle using personal PIN code:

- Close all doors and front/ rear lid (don't lock the vehicle!)
- Insert original transponder into the starting slot and/or switch on ignition using START / STOP button. Wait 10 seconds until acoustic signal subsides.
- Using iDrive controller or on board computer switch enter the PIN code **as date** (see vehicle owners manual)
- Lock the vehicle using interior LOCK/UNLOCK button (both turn indicator check lights are on)
- After one second: Unlock the vehicle using the same button (check lights are switched off and audible signal is generated)
- Remove the key from slot or switch off ignition and wait until the green light **P** on the gearshift lever is switched off. \* After successful procedure the previous date is automatically restored.

### Note:

You have only 3 attempts to enter the personal PIN code. After **third** wrong attempt the vehicle will be blocked for additional 60 minutes (turn indicator check lights in instrument cluster are flashing simultaneously). Entering the PIN code is possible only after elapsing this time period.

### Warning!!

When the vehicle is blocked and yellow crossed key symbol is displayed in the instrument cluster, key data were probably manipulated. Please immediately contact your service or call the Hotline in this case!

### Enabling the vehicle using waiting period:

In case of loss or absence of the personal PIN code, you can enable the vehicle via elapsing the preset waiting period (optional).

The period starts immediately after the vehicle is disabled. After elapsing the period, vehicle will be automatically enabled.

### Note:

This function is **optional** and is activated only on special customer request. Customer has to sign, that he is aware about potential safety risk.

## New key

After installation of the ATS02, all active key data are copied into the immobilizer memory. From this moment, only active keys are accepted. If a new original key is ordered, it has to be authorized prior to use.

### Authorisation of the new key:

- Close all doors and front/ rear lid (don't lock the vehicle!)
- Insert new transponder into the starting slot and / or switch ignition on (vehicle will be disabled and crossed key symbol displayed in the instrument cluster). To authorize the key, enable the vehicle using personal PIN code.

## Additional start protection

This option protects your vehicle from unauthorized start even in case of abuse of Comfort Access system (option 322).

If active, engine can be started only after entering a two-digit start code via the multifunction steering wheel.

### Engine start authorization:

- Use the **- / +** buttons to enter your start code (XY).  
Entering: press button **" - "** X-times and button **" + "** Y-times
- Confirm entered code by pressing the MODE button.

In case of successful entry an acoustic signal is generated.

### Attention!!

After three wrong entries the vehicle will be disabled. Blocking code 00:36 is displayed on vehicle clock display.

## Emergency/Limited mode

In case of serious fault the ATS02 is switched to emergency mode. In this mode (if the fault allows), all the blocking functions are deactivated and the yellow FAULT symbol is displayed in the instrument cluster. If the fault will not cause the complete failure of the system, fault symbol and fault code (00:XX) are displayed, too. In this situation the ATS02 works in limited mode (your vehicle is still reliably protected).

### Note:

In case of failure, immediately visit your authorized dealer or call the Hotline. You will avoid potential security risks.

\* - Function depends on type and equipment of the vehicle.



## Operating instructions

# ATS 02

Electronic immobilizer for BMW vehicles

