

## Introduction

Dear customer, congratulation to purchase of unique electronic anti-theft device for your vehicle – ATS 01. 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. ATS01 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 ATS01 (**A**dvanced **T**hiefproofing **S**ystem) was developed specifically for BMW vehicles in order to enhance their level of security against theft. Uniqueness of the system lies not only in modern hardware, but especially in the unique software implemented in the vehicle, which ATS01 blends perfectly with your BMW.

Immobilizer is directly integrated into the vehicle electronic system. For its control, only standard BMW control elements are used. Thanks to its small size and the minimum requirements for wiring becomes ATS01 very hard to detect.

Software of the immobilizer is secured by 128 bit asymmetric encryption key, which provides maximum level of data protection. During development, so-called redundancy was also taken into account - in case of breaking the primary protection, all functions are at least duplicated and secondary protection provides the same level of safety as the primary one. This makes starting the vehicle practically impossible.

If, however, despite all these measures the vehicle is started by unauthorized way, ATS01 will block gearshift lever (SBW type automatic transmission only) and activate emergency warning function. In particular, all turn indicators, parking and low beam lights are activated and interior lighting will be permanently switched on.

Another safety feature of ATS01 is a programmable output, which serves to activate other peripherals (LoJack, GSM / GPS search device ..). In the case of alarm, ATS01 will activate also BMW TPA tracking device.\*

Gate into the safety of your vehicle is a personal **PIN** code which you will receive in a sealed envelope after installing and programming of the immobilizer. Keep this code in a safe location - it is the only way to unblock your vehicle by own. **PIN** code is not readable.

In the case of loss, an intervention of authorized service technician is necessary to generate a new PIN code.

ATS01 authors thought also about the future. The software of immobilizer is constantly developed. Device is designed to update its software at any time or change the settings according to the customer needs. Of course, ATS01 has an OBD diagnostics with the possibility of reading out the history of the keys usage, PIN codes, error memory and other important data.

## ATS01 function overview:

1. Activation and deactivation of immobilizer by original remote control or by door handle\*
2. Checking the status of the doors, boot lid and engine hood\*
3. Recognizing the original key/ transponder during engine start
4. Checking the disconnection of the control units and battery
5. Service mode, disable the data communication via OBD plug
6. Multiple engine start blocking/ blocking of gearshift lever
7. Blocking the data communication on K-CAN bus in case of unauthorized manipulation
8. Unblocking the vehicle by entering the personal PIN code
9. Programmable output for activation of additional devices (LoJack, GPS /GSM tracker), activation of BMW **TPA** tracker\*
10. Activation of vehicle horn in case of mechanical opening\*
11. Diagnosis, encoding and programming of the system via OBD plug, emergency /limited mode
12. User interface– displaying the fault codes on the clock display

## 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)

Turn indicator lights will flash to confirm the activation.

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 second 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 second period, ATS01 will update all its hardware registers and the new state will be taken as default.

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 insert the transponder into starting slot. You have only 15 seconds to do it. 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:

ATS01 will remain active if the vehicle is locked and rear hinged doors 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 key status comparison of the all transponders is performed between the vehicle and ATS01. If the status match, turn signal indicators will flash once. If the status is different, ATS01 will automatically block 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 required to switch the vehicle into service mode. In this mode all ATS01 functions are disabled and OBD diagnostic socket is active. Service mode will remain active even after disconnecting and reconnecting the battery.

### Attention!

During service visit, always inform service personnel that your vehicle is equipped with ATS01 system.

### Activation of service mode:

- a) All vehicles: Insert the original transponder into the starting slot and switch on the ignition
- 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 in instrument cluster will flash 5 times accompanied with audible signal.

### Note:

After activation of Service mode, previous date is automatically restored. As indication of service mode, right turn indicator check



light flashes in interval of 3 seconds when the engine is started.

### Deactivation of service mode:

- a) Close all doors, engine hood and boot lid
- b) During one minute lock and unlock the vehicle 5 times using original remote control. Deactivation will be confirmed by additional flashing of 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!

## Blocked vehicle

If the vehicle is blocked, right and left turn indicator check lights are flashing alternately in the instrument cluster. Except it, a blocking code in 00:XX format is displayed on the clock display after switching the ignition on for owner information.

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

Vehicle could be unblocked either by entering **personal PIN code**, elapsing the waiting period (optional), or by authorized service technician. Please keep your personal PIN in safe place. You will receive the PIN code (as date) after installing the immobilizer in the closed envelope.

### Attention!

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

### Unblocking the vehicle using personal PIN code:

- a) Close all doors and front/ rear lid (don't lock the vehicle!)
- b) Insert original transponder into the starting slot and switch ignition on. Wait 10 seconds until acoustic signal subsides.
- c) Using iDrive controller or on board computer lever enter the PIN code as date (see vehicle owners manual)
- d) Lock the vehicle using LOCK/UNLOCK button on centre console (both turn indicator check lights are on)
- e) After one second: Unlock the vehicle using the same button (check lights will be switched off).
- f) Remove key from starting slot and wait until green light on 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 the third wrong attempt, 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, CAS data were probably manipulated. In this case, immediately contact your service or call the Hotline!!

### Unblocking the vehicle using waiting period:

In case of loss or absence of a personal PIN code, you can unblock the vehicle via elapsing the preset waiting period (optional). The period starts immediately after the vehicle is blocked. After the period expiration, 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 ATS01, all active key data belonging to the vehicle are saved into the immobilizer memory. From this moment, only these keys are accepted. If a new original key is ordered, it has to be authorized prior to use.

### Authorisation of the new key:

- a) Close all doors and front/ rear lid (don't lock the vehicle!)
- b) Insert new transponder into starting slot (vehicle will be blocked and crossed key symbol is displayed in the instrument cluster). Next steps are the same as unblocking the vehicle using personal PIN code.

Alternatively, the new transponder could be authorized **by expiry of the waiting period** (optional):

- a) Insert new transponder into the starting slot and switch on ignition (vehicle will be blocked)
- b) Remove the transponder, leave the vehicle and wait until waiting period will be elapsed. After it, key will be automatically authorized.

## Emergency/Limited mode

In the case of serious fault, ATS is switched to emergency mode. In this mode (if the fault allows), all blocking functions are deactivated and yellow FAULT symbol is displayed in the instrument cluster.

In the case of fault, which will not cause complete failure of the system, fault symbol and fault code (00:XX) are displayed, too. In this situation, ATS01 works in limited mode. Even in this situation, your vehicle is still reliably protected.

### Note:

In the case of immobilizer 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 01

Electronic immobilizer for BMW vehicles

