

The START-STOP button can be used to switch the terminals in sequence (0, R, 15, R, 0). The engine can be started by depressing the clutch or the brake (manual transmission/automatic transmission) and pressing the START-STOP button.

Insert compartment for the ID transmitter/remote control

On vehicles **without** Comfort Access:

In order to start the engine, the remote control must be latched in place in the insert compartment.

On vehicles **with** Comfort Access:

The remote control must be inserted into the insert compartment if the battery in the ID transmitter is discharged. The engine can then be started up.

Inserting the ID transmitter into the insert compartment deactivates Comfort Access.

- Junction box electronics

> E87, E90, E91

The junction box electronics (JBE) actuates the central locking system.

If the CAS control unit approves the unlocking of the vehicle, for example, the doors will be unlocked.

- Body gateway module and body basic module

> E60, E61, E63, E64

The body gateway module (KGM) actuates the central locking in the front doors.

The body basic module (KBM) controls the central locking in the rear doors.

If the CAS control unit approves the unlocking of the vehicle, for example, the doors will be unlocked.

- Comfort Access control unit

The Comfort Access control unit (CA control unit) actuates the internal and exterior aerials.

An ID transmitter scan is carried out. At the same time, the FBD receiver is activated for any ID transmitters which may respond.

[more ...]

System functions

Comfort Access is used to implement the following functions:

- Passive Entry via driver's door or front passenger door
- Passive Entry via boot lid
- Passive Go
- Passive Exit
- Disabling an ID transmitter located inside the vehicle
- Disabling an opposing command
- Tamper-proof lock

Passive Entry via doors

The vehicle is unlocked when the outside door handle is gripped or pulled. Condition: The ID

transmitter must be located no further than 1.5 m from the aerial in the outside door handle.

Ideally, the user should carry the ID transmitter in a pocket.

First, the user is authenticated (= authenticity check).

The data transferred during the authenticity check is of course encrypted.

If the ID transmitter authenticity check is successful, the user will be granted access to the vehicle. The central locking is unlocked. The door can be opened.

The same principle is applied for the authenticity check for Passive Entry and Passive Go.

Authenticity check using the example of Passive Entry:

- Trigger signal at outside door handle electronics via capacitive sensor 1.
- Request sent to outside door handle electronics to locate an ID transmitter via the aerials in the outside door handle. All ID transmitters associated with the vehicle and located outside of it are included in the search (low-frequency radio signal at 125 kHz).
The search determines whether an ID transmitter associated with the vehicle is located in the operating range of the aerials in the outside door handle.
- At the same time, the outside door handle electronics send a message to the CAS control unit via the sub bus (K-bus).
- All ID transmitters located register with the CAS control unit by sending a radio signal via the FBD receiver (high-frequency radio signal, country-specific, e.g. 868 MHz).
- The CAS control unit decides which of the registered ID transmitters will be used for the subsequent authenticity check.
- This selection is sent to the outside door handle electronics in a message via the K-bus. At the same time, a request is sent to the outside door handle electronics to carry out a selective scan of the ID transmitter concerned.
- All ID transmitters not picked up in this scan end reception readiness for the communication operation currently in progress.
- The ID transmitter picked up via the selective scan responds by sending a radio signal to the CAS control unit via the FBD receiver (high-frequency radio signal at 868 MHz).
- The CAS control unit evaluates the response and, if it is valid, authorises Passive Entry.

The vehicle is unlocked.

In order that the vehicle can be opened quickly, the door lock is mechanically pretensioned with a spring. The spring ensures that the door unlocks whenever the user pulls the outside door handle to its full extent.

- The tension sensor is set up with redundancy to the capacitive sensor (e.g. capacitive sensor 1 deactivated due to long-term lack of use).

When the tension sensor detects the "Outside door handle pulled" signal, the door is unlocked. The door can be opened by pulling on the outside door handle again.

Passive Entry via the boot lid or rear window (E61/E91)

Comfort Access can be used to open the luggage compartment without actively using the ID transmitter. Condition: The ID transmitter must be located no further than 1.5 m from the aerial in the rear bumper. Ideally, the user should carry the ID transmitter in a pocket.

To open the luggage compartment, it is necessary to press and hold the boot lid button for approximately 500 ms (top half of BMW logo on the E87, grip on all other vehicles). If an ID

transmitter is located in the vicinity of the boot, the boot lid will open.

If an ID transmitter is located inside the luggage compartment when the boot lid is closed (and there are no authorised ID sensors outside the vehicle), the boot lid will open up again.

The user's attention is drawn to the anti-theft alarm as follows:

- Visual signal via turn signal lights
- Acoustic signal via siren, US version only

> E61, 91

To open the rear window, the rear window button must be pressed for approx. 500 ms (under the rear window wiper arm).

If an ID transmitter is located in the vicinity of the rear of the vehicle, the rear window will open.

If an ID transmitter is located inside the luggage compartment when the rear window is closed (and there are no authorised ID sensors outside the vehicle), the rear window will open again.

The user's attention is drawn to this as follows: Visual signal via indicators and acoustic signal via sirens (on anti-theft alarm system).

Passive Go

In order to switch the terminal and/or start up the engine, the ID transmitter must **simply** be located inside the vehicle (**not** necessarily in the insert compartment).

On the following models, the luggage compartment counts as part of the interior: E61, E87, E91.

On all other models, it is **not** possible to start the engine if an ID transmitter is detected in the luggage compartment.

In principle, the authenticity check required is the same as that for Passive Entry (except that it is run via the interior aerials).

If there are no ID transmitters inside the vehicle when the START-STOP button is pressed: Check-Control message on instrument cluster.

Press the START-STOP button to switch the terminals. The terminal switching sequence is as follows: 0 -> terminal R -> terminal 15 -> terminal R -> 0.

The START-STOP button must be pressed for approximately 500 ms in order to start up the engine. The clutch pedal or brake pedal (manual transmission or automatic transmission respectively) must be depressed at the same time.

The engine may be started up in any terminal position.

Once the engine has been switched off, it may be restarted within 5 seconds even if no ID transmitter is detected inside the vehicle (i.e. no valid drive authorisation). This safety measure is required for possible emergencies.

Passive Exit

The sensitive area on the outside door handle must be touched (depends on model concerned) for the vehicle to be locked and then secured. Your hand must touch the middle of the sensitive area for at least 1 second.

If the locking area is touched for approx. 3 seconds, auto-remote closing will start. The side windows and sliding/tilting sunroof or Panorama glass sunroof on the E61/E91 then close. On the E64, the convertible top closes. If applicable, the exterior mirrors are folded in.

Auto-remote opening via the outside door handle is **not** possible.

Terminal R is deactivated when the outside door handle is locked.

Terminal 15 is **not** deactivated when the vehicle is locked. A Check-Control message appears as a warning when the driver's door is opened with terminal 15 ON.

Special feature: Comfort Access allows the vehicle to be locked whilst the engine is running.

Disabling an ID transmitter located inside the vehicle

When the vehicle is closed via the outside door handle, any ID transmitter inside the vehicle will be detected.

This ID transmitter is disabled for all Comfort Access functions. However, it is still possible to access the luggage compartment. The ID transmitter is reactivated when the vehicle is unlocked again.

Disabling an opposing command

When the vehicle is unlocked via the outside door handle, it cannot be locked again for approx. 2 seconds.

Similarly, when the vehicle is locked via the outside door handle, it cannot be unlocked again for approximately 2 seconds.

This allows the user to pull on the outside door handle to check that the vehicle is actually locked.

Tamper-proof lock

The vehicle may only be locked and unlocked consecutively a maximum of 8 times. After this, the tamper-proof lock is activated.

Operation is disabled for 10 seconds. The tamper-proof lock is deactivated completely after 5 minutes. Once again, the vehicle may then only be locked and unlocked consecutively a maximum of 8 times.

Notes for service staff

Service staff should note the following points:

- General note: [more ...]
- Diagnosis: [more ...]
- Encoding/programming: ---
- Personal Profile [more ...]

Almost all functions of the Car & Key Memory are programmed inside the vehicle itself (please refer to the "Personal profile" section of Owner's Handbook: Individual settings for a maximum of 3 remote control units via the display in the instrument cluster or via the Central Information Display)

Subject to change.