

Comfort Access

Comfort Access

The new MINI (R56) can be equipped with optional extra 322 "Comfort Access". The comfort system is derived from the BMW 1 Series and 3 Series. The MINI also assumes a leading position in its vehicle class in the area of comfort (UKL1+).

New for the MINI is:

- **no more** outside door handle electronics with sensors and antennas
- Operation via button in the outer door handle
- Vehicle exterior aerial for the door in the inside side panel behind the B-pillar

With Comfort Access, an identification sensor is required instead of the usual remote control. The identification sensor still performs all the functions of the remote control.

Comfort Access can be used to run the following functions:

- **Passive Entry**
Unlocking the vehicle or individual unlocking of the luggage compartment lid without active use of the identification sensor
- **Passive Go**
Engine start without active use of the identification sensor
- **Passive Exit**
Locking the vehicle without active use of the identification sensor (including convenience closing)

Comfort Access prevents inadvertent lockup of an identification sensor. Exception is that a second valid identification sensor is located outside the vehicle.

Brief description of components

The following components are described for comfort access:

Vehicle interior aerials and vehicle exterior aerials

Various antennas are required for communication with the identification sensor: Vehicle interior aerials and vehicle exterior aerials.

The vehicle exterior aerials for monitoring the door are behind the side panels. The MINI has no antennas in the outer door handle.



Index	Explanation	Index	Explanation
1	Vehicle interior aerial in the centre console	2	Vehicle exterior aerial, right (behind side trim panel)
3	Control module for Comfort Access (CA)	4	Vehicle exterior aerial in the bumper
5	Vehicle interior aerial under the back seat	6	Vehicle exterior aerial, left (behind side trim panel)

The antennas transmit on a frequency of 125 kHz. The emission of the antennas is more or less cone-shaped. The identification sensors are asked to identify themselves via the antennas. All the radio signals are encrypted and thus protected against unauthorized access.

The vehicle interior aeriels and vehicle exterior aeriels are made of ferrite.

Button in the outer door handle

There are buttons in the outer door handles of the driver's door as well as the door on the passenger's side. This button is used to unlock and lock the vehicle.



Index	Explanation	Index	Explanation
1	Plug-in connection	2	Outer door handle button on driver's side
3	Outer door handle on driver's side		

The buttons for the outer door handle are connected to the control module for Comfort Access. Pressing the button starts an authentication (= check that identification sensor is authorized for access).

Identification sensor

The identification sensor evaluates the signals from the antennas. The identification sensor also transmits high-frequency radio signals to the FBD receiver (868 MHz/315 MHz, country-specific). When the identification sensor is inserted in the mounting, all the functions of Comfort Access are disabled.



Index	Explanation	Index	Explanation
1	Identification sensor	2	Mechanical key

In contrast to the remote control, the identification sensor with optional extra 322 "Comfort Access" has a battery. The battery is required for the following reasons:

- For reasons related to comfort, no recharging should be required (e.g. by inserting in the mounting or by means of an external charger).
- The power consumption of the identification sensor is greater than that of the remote control.
- The battery of the identification sensor has a significantly greater capacity with increased service life.

To open or close the vehicle manually in an emergency (e.g. flat vehicle battery or local radio interference), there is an integrated mechanical key.

Receiver for remote control services

The receiver for remote control services (FBD receiver) is in the inside mirror. The FBD receiver receives the radio signals from the identification sensor. The FBD receiver forwards these signals to the CAS control module. The control module for Comfort Access (CA control module) switches the FBD receiver on.

START-STOP button and fixture for the identification sensor / remote control

The START-STOP button can be used to switch the terminals (0, R, 15, R, 0) on a rolling basis. When the clutch or brake (manual transmission or automatic transmission) is pressed and the START-STOP button is pressed, the engine is started.

Precondition: a valid identification sensor has been detected.



Index	Explanation	Index	Explanation
1	Mounting	2	START-STOP button
3	Identification sensor		

On vehicles without Comfort Access:

for an engine start, the remote control must be locked in place in the mounting.

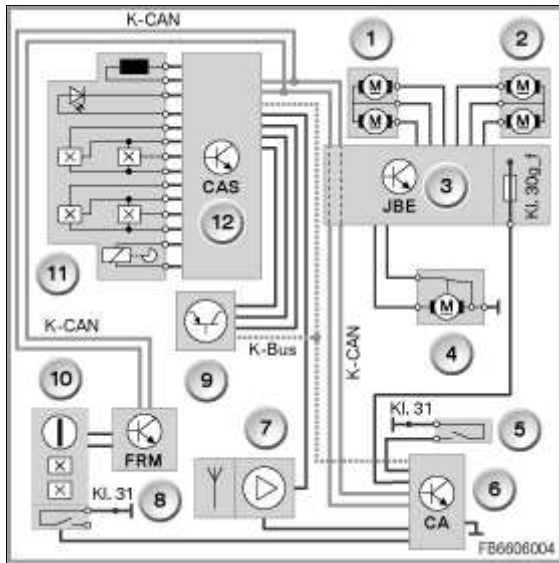
On vehicles with Comfort Access:

the remote control must be inserted in the mounting if the battery in the identification sensor is flat. The engine can then be started. When the identification sensor is in the mounting, Comfort Access is disabled.

CAS: Car Access System

The CAS control module is the master control module for all functions run by Comfort Access. The CAS control module is the interface to the START-STOP unit. The START-STOP unit consists of the START-STOP button as well as the mounting for the identification sensor. The electrical steering interlock is also activated by the CAS control module. The CAS control module is connected via the K-Bus (sub-bus) with:

- Control module for Comfort Access (CA)
- Electrical steering interlock (ELV)



Index	Explanation	Index	Explanation
1	Central-locking drive, driver's door	2	Central-locking drive, door on the passenger's side
3	Junction box electronics (JBE)	4	Central locking drive, rear lid
5	Button in the outer door handle, passenger's side	6	Control module for Comfort Access
7	Remote control receiver in the inside mirror	8	Footwell module (FRM)
9	Electric Steering Lock	10	Outer door handle on driver's side with button
11	START-STOP unit with START-STOP button as well as fixture for identification sensor	12	Car Access System (CAS)

The CA control module is also connected via the K-CAN with the CAS control module.

When the vehicle is in the idle state, there can be communication on the K bus without the CAN network being woken.

JBE: Junction Box Electronics

The junction box electronics are the executing control module for the central-locking system. The JBE handles the activation of all central-locking drives.

If the CAS control module e.g. releases unlocking the vehicle, the doors are unlocked. In addition, the JBE supplies the control module for Comfort Access with terminal 30g-f.

System functions

The following system functions are described for Comfort Access:

- Passive Entry via the driver's door or door on the passenger's side
- Passive Entry via the luggage compartment lid
- Passive Go
- Passive Exit
- Locking an identification sensor inside the vehicle
- Misuse protection
- Personal Profile

Passive entry via the doors

The vehicle is unlocked by pressing the button. Condition: the identification sensor is a maximum of 1.5 metres away from the antenna in the outer door handle. Ideally, the user carries the identification sensor in his or her pocket. First of all, an authentication (= check of legal authorization) is started. It is taken for granted that the data transferred on authentication is encrypted. If the authentication of the identification sensor is positive, the user is granted access authorization. The central-locking system unlocks. The door can be opened. In principle, authentication for Passive Exit and Passive Go is exactly the same.

Sequence of authentication with Passive Entry as an example:

- Trigger signal via the button in the outer door handle.
- CA control module detects the trigger signal via the K bus. CA control module switches the FBD receiver on permanently.
- CA control module is requested by CAS via K-CAN to search for an identification sensor via the vehicle exterior aerials in the side panels. The search covers all of the identification sensors belonging to the vehicle that are outside the vehicle (low-frequency radio signal with 125 kHz). Here, it is determined whether one of the identification sensors belonging to the vehicle is located in the effective area of the antennas in the outer door handle.
- The CA control module communicates simultaneously via the sub-bus (K bus) with the CAS control module.
- All identification sensors send a radio signal via the FBD receiver to the CAS control module (high-frequency radio signal, depending on the country e.g. 868 MHz).
- The CAS control module decides which of the logged-in identification sensors is used for the rest of the sequence of authentication.
- This selection is sent in a message across the K bus to the CA control module. At the same time, the CA control module is asked to address a selective query to the identification sensors concerned.
- The identification sensor that receives the selective query responds by sending a radio signal via the FBD receiver to the CAS control module (high-frequency radio signal with 868 MHz).
- The CAS control module evaluates the check-back signal and in the case of a valid check-back signal grants authorization for Passive Entry. The vehicle is unlocked.

Passive Entry via the luggage compartment lid

With Comfort Access, the luggage compartment can be opened without active use of the identification sensor. Condition: the identification sensor is a maximum of 1.5 metres away from the antenna in the rear bumper. Ideally, the user carries the identification sensor in his or her pocket. To open the luggage compartment, the luggage compartment button must be pressed for approx. 500 ms. If an identification sensor is in the vicinity of the rear end, the luggage compartment lid opens. If there is an identification sensor in interior or luggage compartment on closing the luggage compartment lid (and no authorized identification sensor outside), the luggage compartment lid is opened again. The attention of the user is drawn to the anti-theft alarm system as follows:

- Visual signal via the indicators (basis)
- Acoustic signal via the siren, only US version (with optional extra 302)

Passive Go

To switch the terminal and/or start the engine, the identification sensor **only** needs to be located in the vehicle interior (**not** in the mounting). On the R56, the luggage compartment is part of the inside of the vehicle. In principle, the necessary authentication runs in the same way as for Passive Entry (only via the vehicle interior aerials). If there is no identification sensor inside the vehicle when the START-STOP button is pressed: Check Control message in the instrument cluster. Pressing the START-STOP button switches the terminals. The order is as follows:

0 -> terminal R -> terminal 15 -> terminal R -> 0.

To start the engine, the START-STOP button must be pressed briefly. At the same time, the clutch pedal or brake pedal (manual transmission or automatic transmission respectively) must be pressed. An engine start is possible in any terminal position. After stopping the engine, the engine can be restarted within 10 seconds even if no identification sensor is detected in the interior (i.e. without a valid driver authorization). This safety measure is required for possible emergency situations.

Exception: if a door is opened within the 10 seconds, this after-run is cancelled immediately.

Passive Exit

To lock and subsequently secure the vehicle, the button on the outer door handle must be pressed for approx. 500 ms. If the locking button is pressed for approx. 3 seconds, convenience closing starts. The side windows and slide/tilt sunroof also close. Convenience opening using the outer door handle is not possible. Locking via the outer door handle switches off terminal R. Terminal 15 is not switched off on locking. When the driver's door is opened at terminal 15, a Check Control message and an acoustic warning tone are issued. Special feature: with Comfort Access, the vehicle can be locked with the engine running.

Locking an identification sensor inside the vehicle

On locking the vehicle via the outer door handle, an identification sensor inside the vehicle is detected. The search inside the vehicle is started on closing the last door. This identification sensor is blocked for Passive Exit (not for Passive Go). The identification sensor is reactivated at terminal R On or when the central-locking system is unlocked.

Misuse protection

Locking and unlocking are only possible 15 times in succession. The childproofing is then activated. After 10 seconds, operation is permitted once again. After approx. 4 minutes, the childproofing is completely disabled. Locking and unlocking are possible once again 15 times in succession.

With frequent unlocking and locking of the luggage compartment lid, there is also childproofing after a short time. If necessary, the identification sensor can be locked in the luggage compartment (= inside the vehicle).

Personal Profile

To unlock the vehicle at the **driver's door**, the customer can set the following:

- door-selective, i.e. only driver's door
- all doors together

On vehicles without CCC:

Personal Profile is set at the steering column lever for the turn indicator (via onboard computer). The menu guidance is in the LC display on the additional instrument on the steering column.

On vehicles with CCC:

Personal Profile is set with the controller at the Central Information Display (CID).

If the vehicle was unlocked on a door-selective basis, the remaining doors can be unlocked using the centre lock button.

Note! No Personal Profile for the door on the passenger's side.

When the button on the door on the passenger's side is pressed, all doors are always unlocked.

Notes for Service department

General information

Note! Power supply for the identification sensor.

Ex works, 2 identification sensors per vehicle are available. The identification sensor has a battery. The service life of the battery is approx. 2 years. The battery compartment is on the back of the identification sensor. When the battery is almost flat, this is indicated by a Check Control message. If the Check Control message is ignored, the identification sensor goes out of operation (for data protection).

Note! Mechanical key integrated in the identification sensor.

In emergencies, e.g. local radio interference, the vehicle can be opened with the integrated key that is identical to the remote control.

Note! Data for Condition Based Service.

The CBS data is always written onto the identification sensor at terminal 15 On and after driving 10 kilometres. The data is transferred by radio (antennas for Comfort Access).

To update the CBS data, there is a hidden function available. To do so, switch on terminal 15. Then press and hold down the centre lock button. Then press the START-STOP button. If the identification sensor is in the mounting, the CBS data is updated in cycles.

Note! Set automatic transmission to position "P".

On vehicles with automatic transmissions, "P" must be engaged in order to stop the engine.

Note! Special feature in a car wash.

On driving through a car wash:

on vehicles with automatic transmissions, follow the instructions in the Owner's Manual.

Diagnosis instructions

For the diagnosis of Comfort Access, observe the following information:

Resetting the Car Access System

After work on the door handles, **no reset** of the CAS is necessary.

Notes on coding / programming

After replacement of the control module for Comfort Access, an initialization must be carried out. The terminal change after terminal 15 On triggers the initialization. Here, the CAS control module automatically initializes the control module for Comfort Access.

Country-specific version

The frequency of the radio signal from the identification sensor is country-specific: 868 MHz, 315 MHz.

No liability can be accepted for printing or other faults. Subject to changes of a technical nature