General functional description

The keyless access control system, type Kessy, enables convenient utilization of the vehicle. To use the vehicle, the driver only needs to take the key along with him/her. The vehicle communicates with the system inductively via antennas. These antennas are located in the outside door handles, in the rear bumper, in the gearshift - lever housing , in the center console, in the central rear arm rest and in the backlite shelf. These antennas are driven inductively with a frequency of 125 kHz. The system's range is limited in a defined fashion by damping the body sheet metal. In the vehicle interior, the ranges of the various antennas overlap, which enables location of the key.

Keyless access control (maximum assembly variant M-Option)

The handle of the driver's door and the boot lid are equipped with contacts to ensure the locking and unlocking functions. If the door handle of a locked vehicle is pulled, the control unit activates the antennas on the vehicle's side where the handle has been pulled. These antennas generate an inductive field of 125 kHz which enable identification of the transponder located in the key. In case of successful evaluation by the KESSY control unit and with the outside door handle actuated, the command "Open door" is issued, i.e. the door opening assistant and the central locking system are activated.

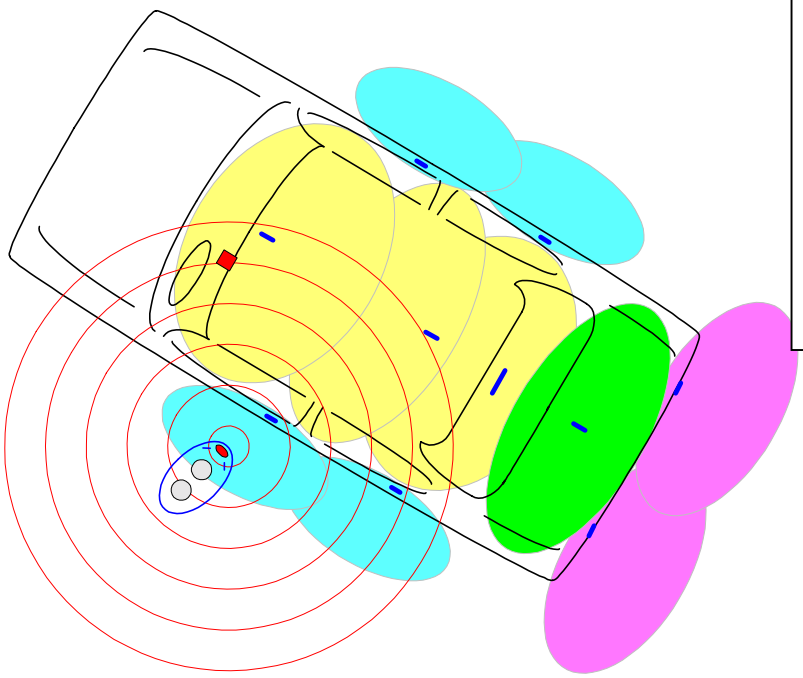
If the "locking button" is pushed while the vehicle is unlocked, the identification process is started, i.e. the KESSY control unit starts a request for a valid key. The key returns a corresponding response to the KESSY control unit. If the key has been activated successfully by the KESSY control unit, the central locking system is activated and the vehicle is locked.

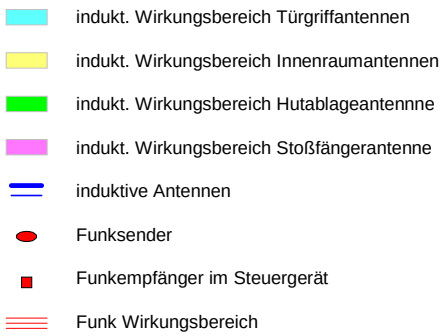
Keyless start/stop (maximum assembly variant M-Option)

The system provides the function which enables starting/stopping the engine without key actuation.

The prerequisite for starting the vehicle is a key allocated to the vehicle, which is taken along by the user and is clearly inside the vehicle. By actuating the starting device, the driver starts the identification process, i.e. the KESSY control unit issues a request for a valid key inside the vehicle. The key returns an appropriate response to the KESSY control unit. In case of successful identification of the key, the vehicle is started and the immobilizer is deactivated.

Block diagram Fig. 1
- inductive range of action of outside door handle antennas
- range of action of center console / rear arm rest antennas
- inductive range of action of antenna in backlite shelf
- inductive range of action of bumper antenna
- inductive antennas
- key
- radio receiver in control unit
- range of radio action

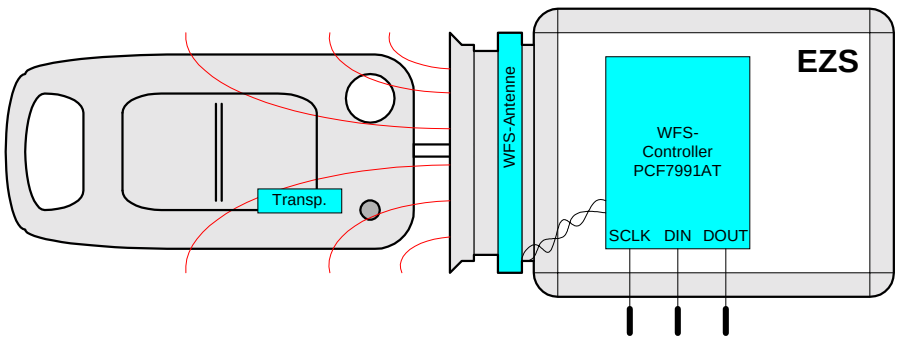




Prinzipdarstellung Fig. 1

Immobilizer (reduced assembly variant Basic-Option)

The immobilizer is deactivated on vehicle start: the key is identified by the integrated transponder which communicates via inductive transmission with the electronic ignition lock (EZS). The EZS supplies the transponder with inductive energy. The magnetic field is modulated with data which are sent to the electronic ignition lock by the control unit. This data transfer operates at an operating frequency of 125 kHz. The response returned by the key is demodulated in the electronic ignition lock, and sent back to the control unit. If identification was successful, the immobilizer is disabled.



WFS-Antenne - immobilizer antenna

List of variants

5WK4 7026	Control unit – maximum assembly (M-Option)
5WK4 7025	Control unit – reduced assembly (Basic-Option) only immobiliser function
5WK4 5014	Center console antenna / rear arm rest antenna
5WK4 5015	Gearshift-lever housing antenna
5WK4 5016	Bumper antenna
5WK4 5017	Backlite shelf antenna
3D0 905 865	Electronic ignition lock (EZS) antenna
3D0 837 205/206	Outside door handle antenna

Technical Description

Carrier frequency:	125 kHz
Field strength:	< 42 dBµA/m in 10 m
Modulation:	ASK
Band width:	123,13 kHz – 126,88 kHz
Baud rate:	4 kBd
Supply voltage:	13,5 V
Battery type	Car battery
Range:	1,5 m – 2,0 m