Product description

and

Technical specification

Type
503.00.154
Panel instrument with integrated immobiliser for VW group application

Abstract
This document summaries the technical characteristics of the device providing information of both a specific and a general nature.

1. Main Performance

The Immobilizer built in the instrument panel has to read out the data code from a Transponder, located inside the key, and checks whether that key is authorized to start the engine of the vehicle.
In case of an authorized key, a start-enable code is sent to the requested Engine Management System (EMS) via CAN-line. Else, the starting of the engine is disabled by sending a negative answer to the request of the EMS.

2. System Components

2.1 Transponder inside key

The Transponder is composed of a receiver/transmitter coil and an electronic circuit, featuring rectifier, voltage regulator, sequencer and memory. The Transponder is power-supplied by means of the 125kHz electro-magnetic field. The Crypt-(security)-Transponder is based on a bidirectional communication (amplitude modulation and demodulation).

2.2 Transmitter/Receiver coil (Antenna) at the ignition lock

The Antenna supplies the transponder with energy, sends commands and data to the Transponder and receives codes from the transponder.

2.3 Immobilizer part of the instrument panel

The Immobilizer unit of the instrument panel is directly connected to the Immobilizer Antenna and stores the authorised key codes in a non-volatile memory. The instrument panel is permanently supplied with battery voltage (KL30). The Immobilizer function operates with ignition (KL15) on.

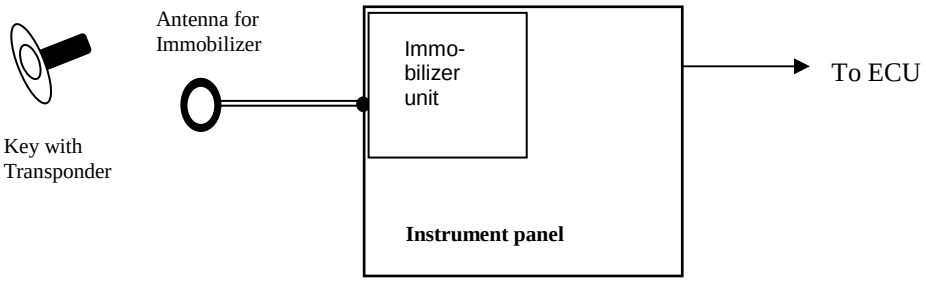
3. Normal Starting Sequence

1. Initialize the immobilizer function of the immobiliser built in the instrument panel at the key on (ignition, KL15 on)
2. The 125kHz electromagnetic field is switched on
3. The Immobilizer read out the fixcode of the Transponder
4. If the fixcode is recognized a bidirectional authentication protocol is proceeded with the engine control unit (max. 300ms)
5. The received authentication code is verified
6. If the verification procedure is passed , wait for request from engine control unit

4. Pinning of the instrument panel with immobilizer unit

P13-7	coil
P13-8	coil
P13-12	CAN (H)
P13-13	CAN (L)
P13-1	Ignition key (KL15)
P13-2	Battery Voltage (KL30)
P13-19	GND

Block diagram for the instrument panel with immobilizer unit



6. Electric specification's

Clock frequency	:	32 MHz
Power supply	:	13,5V (vehicle battery)
Foundmental immobiliser frequency	:	125 kHz
Antenna coil loop number	:	131
Resistance	:	40Ω @ 25℃ 1kHz
Inductance	:	1,613 mH @25℃ 1kHz