

User Manual / Functional Description

of the

Siemens VDO

Keyless Vehicle Module

**Type
5WK4 9167**

1. SYSTEM OVERVIEW

This short system description gives an overview about the functionality of the Keyless Vehicle (KV) system and from the Keyless Vehicle Module (KVM).

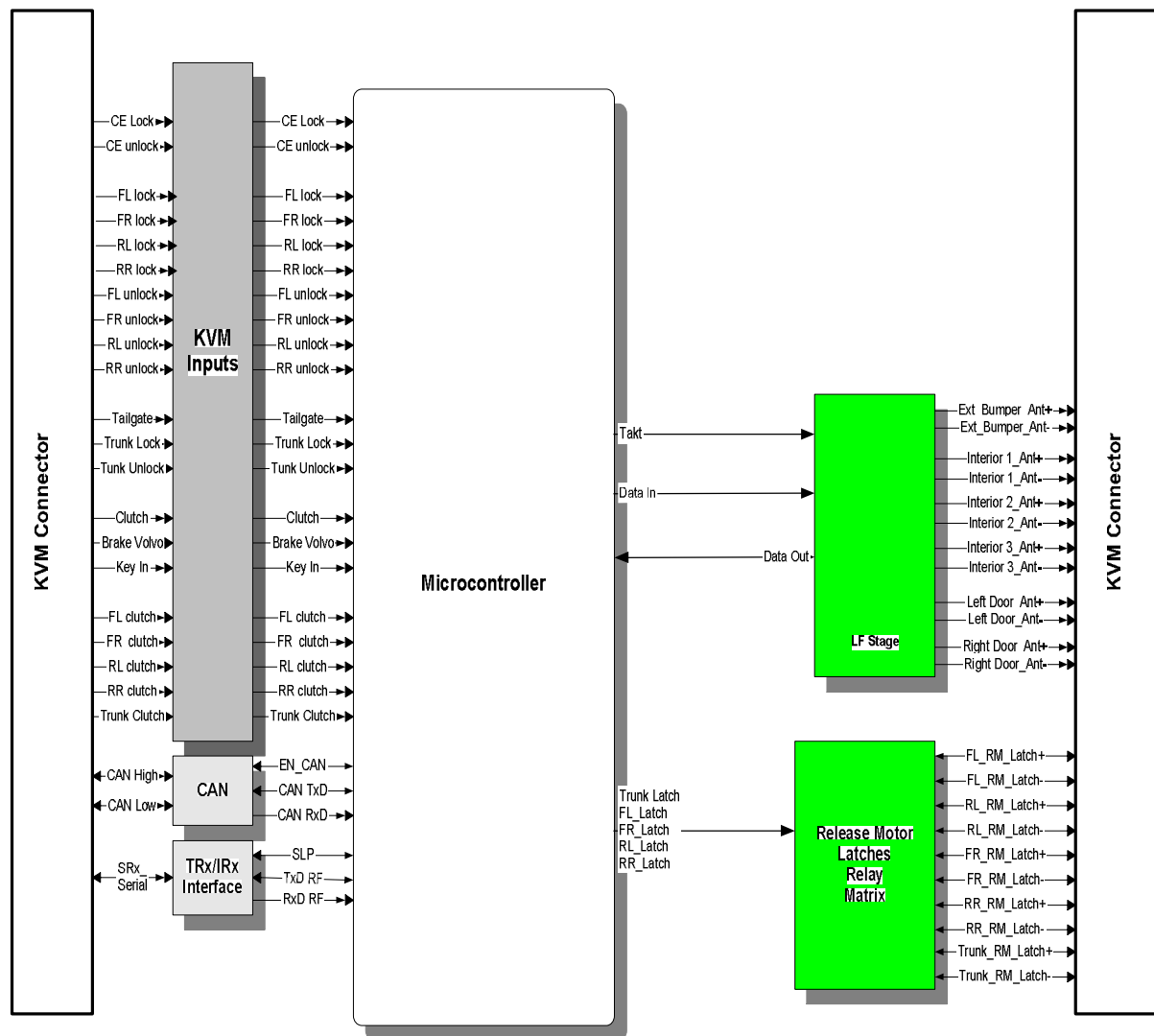
The vehicle and the Passive Key (PK) will communicate via challenge / response. By any request the KVM sends a challenge via the respective LF-antennas with **125 KHz** to the Passive Key. The PK's within the detection range answer via Radio Frequency (RF) transmission. The external RF-Receiver sends the data from the received signal via serial link to the KVM. The system will provide a specific PK detection function for inside and outside detection range.

Different failure modes and diagnostic data will be displayed to the driver from KVM via the Mid Speed CAN-Bus to display at the cluster.

For back up reasons, the Passive Key will provide a metal key blade for locking / unlocking the vehicle and for starting the engine after key is inserted in ignition switch (ignition key cylinder) and turned to crank position.

2. BLOCK DIAGRAM

The block diagram below shows the main electronic units of Keyless Vehicle Module:



3. Duty Cycle

20 actuations of access control system within 24 hours with a typical transmission time of 0.08 seconds. 0.07 seconds / hour.

Transmission time T_{ON} 0.07 seconds / hours

Off time T_{OFF} 3599.93 seconds / hours

Duty Cycle: $T_{ON} / T_{(ON+OFF)} \times 100\% = 0,07 / 3.600 \times 100 \% = \underline{0.02 \%}$

4. LIST OF VARIANTS

5WK 49167	Keyless Vehicle Module
5WK4 7897	LF antenna standard
5WK4 7898	LF antenna slim line (housing variant)

5. TECHNICAL DESCRIPTION

Carrier frequency: 125 kHz +/- 1,875 kHz
Field strength: < 42 dBμA/m @ 10 m
Modulation: ASK
Supply voltage: $U_B = 12.8 \text{ V} \pm 0.2 \text{ V}$
Battery type Car battery
Range: < 2 m

6. LABEL DESIGN EUROPE

Siemens VDO
5WK 49167



7. LABEL DESIGN USA, CANADA

Siemens VDO
5WK 49167

FCC ID:KR55WK49167
IC:267T-5WK49167

owner manual: warning statement

This device complies with part 15 of the FCC Rules and RSS-210. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept interference received, including interference that may cause undesired operation.

Note:

Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.