

Functional Description

Key: 5WK4 9308

User Manual

of the

Siemens VDO

Radio Frequency Transmitter

Type

5wk4 9308

5wk4 9309

5wk4 9348

5wk4 9349

5wk4 9542

1. GENERAL DESCRIPTION OF THE RF TRANSMITTER

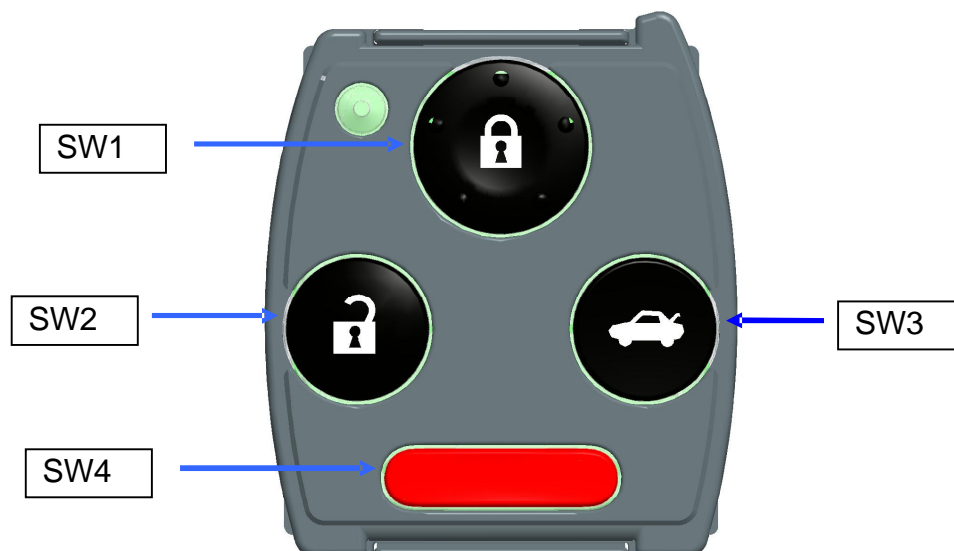
The RF remote control system consists of a RF transmitter and a RF receiver mounted within the control unit. The RF transmitter is mechanically integrated in the head of the key. This transmitter is used to transmit information for locking or unlocking the vehicle by a unidirectional RF transmission line for normal remote operation by pressing a button.

In general the following functions are provided:

- Lock the car
- Unlock the car
- Unlock the trunk of the car
- Panic Alarm

Immobilizer Transponder

When the key is operating as an immobilizer transponder, communication is done over a "contact less interface" depending on strong magnetic coupling. The transponder is the passive side of the link and there is **no RF transmission from it involved** in any aspect.



Siemens MLFB	5wk49308	5wk49309	5wk49348	5wk49349	5wk49542
Frequency variant	313.85 MHz (USA)	434.92 MHz (EU)	313.85 MHz (USA)	313.85 MHz Low Power (Japan)	434.92 MHz (EU)
Number of buttons	4 buttons	3 buttons	3 buttons	3 buttons	4 buttons
SW 1	Look	Look	Look	Look	Look
SW 2	Unlock	Unlock	Unlock	Unlock	Unlock
SW 3	Trunk	Trunk	Trunk	Trunk	Trunk
SW 4	Panic				Panic

2. POWER SUPPLY

The transmitter is provided with 1 lithium battery (CR1616) that gives a power supply of +3V.

3. TYPICAL USAGE PATTERN (FOR EUROPE ONLY)

20 lock/unlock operations in 24 hours with complete transmission duration of 10.0 seconds (500ms/operation)

2 power window up/down operations in 24 hours with transmission duration of 10 seconds (5.0 seconds for 1 operation; max. value)

→ total transmission duration of 20 seconds within 24 hours

Transmitter ON 0.83 seconds / hour

Transmitter OFF 3599.17 seconds / hour

Duty Cycle: $T_{ON} / T_{(ON+OFF)} \times 100\% = 0.83 / 3600 \times 100 \% = \underline{0.023 \%}$



The electronics consist of the following functional groups:

- Power Supply
- PCF 7941 8 bit RISC controller
- Integrated transponder function compatible to HITAG2+ standard
- Radio Frequency (RF)-transmitter with PLL stabilized oscillator and integrated PCB antenna
- SMD micro switches with high tactile feedback
- Red LED

5. TECHNICAL DATA

Tx Electrical characteristics

Parameter	Unit	Min.	Typ.	Max.
Supply voltage	V	2.5	3	3.3
Battery lifetime (10 actuations per day) [years]	a		4	

Tx Europe (433.92MHz) variants:

Variants	Siemens MLFB
Europe 3-button Lock-Unlock-Trunk	5wk4 9309
Europe 4-button Lock-Unlock-Trunk-Panic	5wk4 9542
Center frequency	433.92MHz
Frequency shift	+/-30kHz
RF-Power (EIRP)	< 10 mW

Tx US (313.85 MHz) variants:

Variants	Siemens MLFB
US 3-button Lock-Unlock-Trunk	5wk4 9348
US 4-button Lock-Unlock-Trunk-Panic	5wk4 9308
Center frequency	313.85 MHz
Frequency shift	+/-30kHz
RF-Power (EIRP)	< 75.6 dB μ V/m

Tx Japan (313.85 MHz Low Power) variant:

Variants	Siemens MLFB
Japan 3-button Lock-Unlock-Trunk	5wk4 9349
Center frequency	313.85 MHz
Frequency shift	+/-30kHz
RF-Power (EIRP)	< 54 dB μ V/m

NOTE:

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

6.1 LABEL DESIGN Europe (433.92 MHz)

Siemens VDO
5WK4 9542



6.2 LABEL DESIGN CANADA, MEXICO, USA (314,85 MHz)

Siemens VDO
5WK4 9308

IC: 267T-5WK49308
FCC ID:KR55WK49308

Entry Owners Manual, Canada, USA:

NOTE

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.

CAUTION

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