Functional Description

Key: 5WK4 3451

User Manual

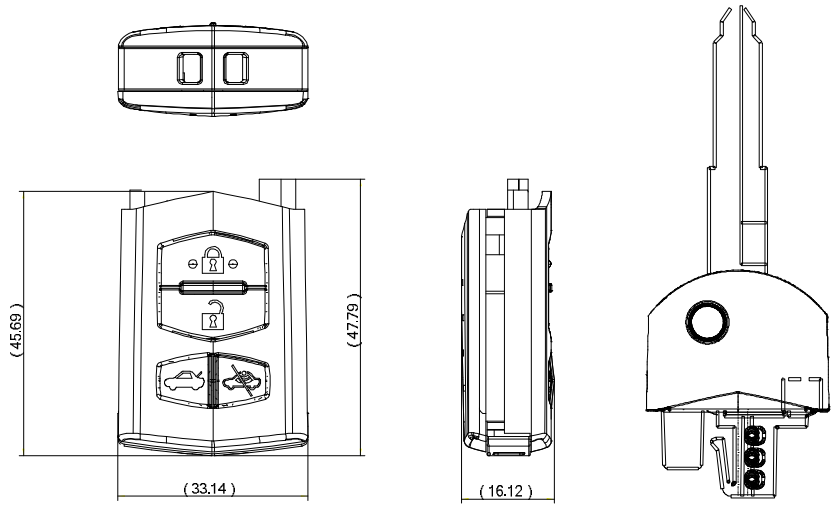
of the

Siemens VDO

Radio Frequency Transmitter

Type
5wk4 3408
5wk4 3409
5wk4 3430
5wk4 3449
5wk4 3450
5wk4 9365
5wk4 3451

1. GENERAL DESCRIPTION OF THE RF TRANSMITTER



The Mazda J61/J64 RKE transmitter is a handheld device to remotely control a vehicle's locking and alarm system by pressing the pushbuttons.
Delivered by Siemens is only the transmitter part with the pushbutton electronics. It is intended to be put together with the flip-fork (right side of the picture) which is delivered to Mazda by the lockset supplier. It provides mechanical access to the vehicle and start of the car using a separate, discrete transponder.
The picture shows the four-button variant of the transmitter.
There are variants of the transmitter with two, three, or four buttons, listed in the following table.

Siemens MLFB	5wk4 3408	5wk4 3409	5wk4 3430	5wk4 3449	5wk4 3450	5wk4 9365	5wk4 3451
SV TNS	A2C53213832	A2C53213834	A2C53213835	A2C53213836	A2C53213837	A2C53213838	A2C53213839
Mazda Number	D01G 675DY	DH55 675DY	G33D 675DY	GS1F 675DY	DH58 675DY	GS1G 675DY	GS4B 675DY
Frequency variant	315 MHz LP (Japan)	433.92 MHz (EU)	315 MHz LP (Japan)	433.92 MHz (EU)	433.92 MHz (EU)	433.92 MHz (EU)	315 MHz HP (US)
Number of buttons	2 buttons	2 buttons	3 buttons	3 buttons	3 buttons	4 buttons	4 buttons
Button 1	lock	lock	lock	lock	lock	lock	lock
Button 2	unlock	unlock	unlock	unlock	unlock	unlock	unlock
Button 3 (middle)	---	---	trunk	trunk	cancel		
Button 3 (left)						trunk	trunk
Button 4 (right)	---	---	---	---	---	cancel	panic
Schematic	v32	v12	v33T	v13T	v13C	v14TC	v24TP
	40154696	40154697	40139189	40154698	40154699	40139187	40139188
assembled PCB	A2C53218454	A2C53218455	A2C53218456	A2C53218457	A2C53218458	A2C53218459	A2C53218460
SW ID (variant)	220702	220702	220702	220702	220702	220702	220702

2. POWER SUPPLY

The transmitter is provided with 1 lithium battery (CR1620) 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
2.0 seconds (100ms/operation)
4 lock/unlock operations in 24 hours with transmission duration of 26 seconds (6.5 seconds for 1 operation; max. value)
→ total transmission duration of 28 seconds within 24 hours

Transmitter ON 1.2 seconds / hour

Transmitter OFF 3598.8 seconds / hour

Duty Cycle: T_{ON} / $T_{(ON+OFF)}$ x 100% = 1.2/ 3600 x 100 % = 0.033 %

5. TECHNICAL DATA

RKE Tx Electrical characteristics

Parameter	Unit	Min.	Typ.	Max.
Supply voltage	V	2.1	3	3.6
Quiescence current	µA		0.9	1.6
Battery lifetime (10 actuations per day) [/years]	a		2	

RKE Tx Europe (433.92MHz) variants:

Variants	Siemens MLFB	Mazda Number
Europe 2-button Lock-Unlock	**5wk4 3409**	**DH55 675DY**
Europe 3-button Lock-Unlock-Trunk	**5wk4 3449**	**GS1F 675DY**
Europe 3-button Lock-Unlock-Cancel	**5wk4 3450**	**DH58 675DY**
Europe 4-button Lock-Unlock-Trunk-Cancel	**5wk4 9365**	**GS1G 675DY**

Parameter (@+22.5°C)	Unit	Min.	Typ.	Max.
Center frequency	MHz	433.820	433.920	434.020
Frequency shift	kHz	± 20	± 35	± 50
RF-Power (EIRP typ.)	mW			< 10

RKE Tx US (315 MHz High Power) variants:

Variants	Siemens MLFB	Mazda Number
US 4-button Lock-Unlock-Trunk- Panic	**5wk4 3451**	**GS4B 675DY**

Parameter (@+22.5°C)	Unit	Min.	Typ.	Max.
Carrier frequency	MHz	314.900	315.000	315.100
Frequency shift	kHz	± 20	± 35	± 50
RF-Power (EIRP typ.)	dBµV/m			< 75.6

RKE Tx Japan (315 MHz Low Power) variants:

Variants	Siemens MLFB	Mazda Number
Japan 2-button Lock-Unlock	**5wk4 3408**	**D01G 675DY**
Japan 3-button Lock-Unlock-Trunk	**5wk4 3430**	**G33D 675DY**

Parameter (@+22.5°C)	Unit	Min.	Typ.	Max.
Carrier frequency	MHz	314.900	315.000	315.100
Frequency shift	kHz	± 20	± 35	± 50
RF-Power (EIRP typ.)	dBµV/m			< 54.0

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 (434 MHz)

Siemens VDO
5WK4 9365

CE

6.2 LABEL DESIGN CANADA, MEXICO, USA (315 MHz)

Siemens VDO
5WK4 3451

IC: 267T-5WK4 3451
FCC ID:KR55WK4 3451

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.

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