User Manual

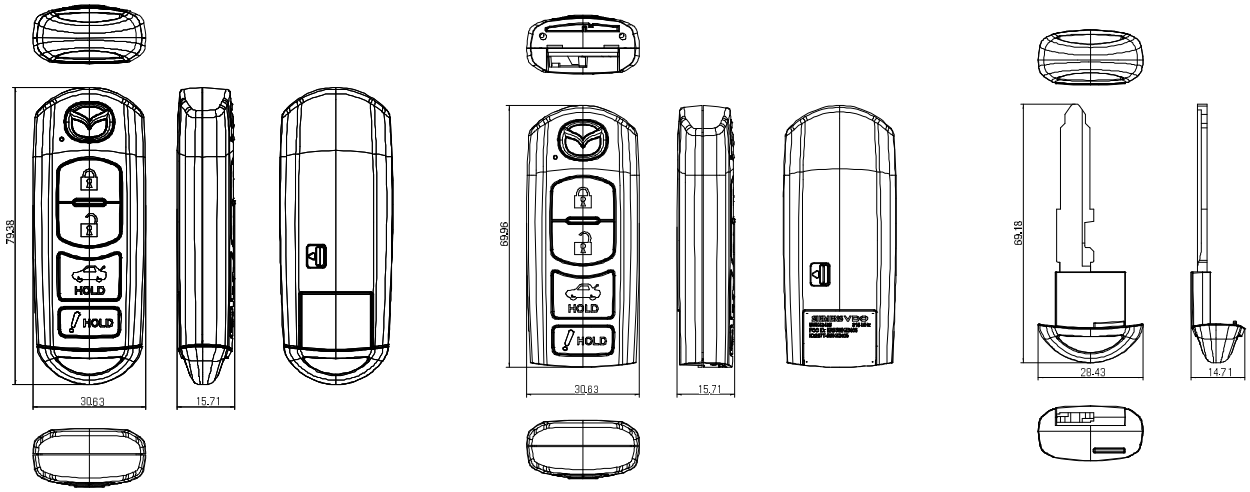
of the

Siemens VDO

Radio Frequency Transmitter

Type
5WK4 3400
5WK4 3401
5WK4 3402
5WK4 3403
5WK4 3404
5WK4 9383
5WK4 9384

1. GENERAL DESCRIPTION OF THE RF TRANSMITTER



The Mazda J61/J64 SKE transmitter is a handheld device to remotely control a vehicle's locking and alarm system by pressing the pushbuttons. It also provides PASE functions for hands-free access and start of the vehicle using the 3D-LF-frontend (without handling the transmitter that can remain in the pocked for example).
Delivered by Siemens is only the transmitter part with the pushbutton electronics. It is intended to be put together with the emergency-key (right 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 3400	5wk4 3401	5wk4 3402	5wk4 3403	5wk4 3404	5wk4 9383	5wk4 9384
SV TNS	**A2C53216 592**	**A2C53216 559**	**A2C53216 595**	**A2C53216 593**	**A2C53216 594**	**A2C53216 597**	**A2C53216 596**
Mazda Number	D651 675DY	DF71 675DY	G33C 675DY	GS1D 675DY	DF80 675DY	GS3L 675DY	GS1E 675DY
Frequ. variant	315 MHz LP (Japan)	433.92 MHz (EU)	315 MHz LP (Japan)	433.92 MHz (EU)	433.92 MHz (EU)	315 MHz HP (US)	433.92 MHz (EU)
N° 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	---	---	trunk^{hold} *	trunk *	---	trunk^{hold} *	trunk *
Button 4	---	---	---	---	cancel	panic^{hold} **	cancel
Schematic	**v32**	**v12**	**v33T**	**v13T**	**v13C**	**v24TP**	**v14TC**
	40159933	**40159932**	**40159936**	**40159934**	**40159935**	**40157084**	**40157083**
assembled PCB	**A2C53218 217**	**A2C53218 216**	**A2C53218 250**	**A2C53218 218**	**A2C53218 219**	**A2C53218 252**	**A2C53218 251**
SW ID	**220612 (JA)**	**220602 (EU)**	**220612 (JA)**	**220602 (EU)**	**220602 (EU)**	**220622 (US)**	**220602 (EU)**
Siemens MLFB	5wk4 3400	5wk4 3401	5wk4 3402	5wk4 3403	5wk4 3404	5wk4 9383	5wk4 9384

** Trunk button always behave the same – independent of 'hold' written on it or not;
* Panic button has red symbol

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

SKE Tx Electrical characteristics

Parameter	Unit	Min.	Typ.	Max.
Supply voltage	V	2.1	3	3.6
Quiescence current	µA		4.5	6
Battery lifetime (10 actuations per day) [/years]	a		2	
PASE LF input Carrier Frequency	kHz	122.8	125	126.7
PASE LF input Data Rate	bit/s	3840	3900	3960
PASE LF input Modulation method		ASK		
PASE LF input Bit Coding		Manchester (0: high->low)		
PASE LF input coil (resonance circuit) sensitivity @125kHz	µV/nT		460	
PASE LF input overall minimum reception fieldstrength	nT_{peak}	-	1.2	3.0
PASE LF input calibrated sensitivity	nT_{peak}	-	**TBD**	-
PASE RF output Data Rate - **EU and US system**	bit/s		7'812.5	
PASE RF output Data Rate - **Japan system**			2’000	
PASE RF output Modulation method		FSK		
PASE RF output Bit Coding		Manchester		
PASE RF output Telegram content		(Volvo P1007 like, RipeMD)		

SKE Tx Europe (433.92MHz) variants:

Variants	Siemens MLFB	Mazda Number
Europe 2-button Lock-Unlock	**5wk4 3401**	**DF71 675DY**
Europe 3-button Lock-Unlock-Trunk	**5wk4 3403**	**GS1D 675DY**
Europe 3-button Lock-Unlock-Cancel	**5wk4 3404**	**DF80 675DY**
Europe 4-button Lock-Unlock-Trunk-Cancel	**5wk4 9384**	**GS1E 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

SKE Tx US (315 MHz High Power) variants:

Variants	**Siemens MLFB**		**Mazda Number**	
US 4-button Lock-Unlock-Trunk-Panic	**5wk4 9383**		**GS3L 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

SKE Tx Japan (315 MHz Low Power) variants:

Variants	Siemens MLFB		Mazda Number	
Japan 2-button Lock-Unlock	**5wk4 3400**		**D651 675DY**	
Japan 3-button Lock-Unlock-Trunk	**5wk4 3402**		**G33C 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 9384

CE

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

Siemens VDO
5WK4 9383

IC: 267T-5WK49383
FCC ID:KR55WK49383

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.