TRANSPONDER 3064
PRODUCT MANUAL

Date: February 2015

SimonsVoss technologies

PRODUCT MANUAL
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Contents

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1 SAFETY INSTRUCTIONS

- The transponder casing is protected against splash water. However, it is not watertight!
- Only use batteries which have been approved by SimonsVoss (see Section 9)
- The batteries used in Digital Locking Cylinder 3061 may pose a fire or burn hazard if handled incorrectly. **Do not** recharge, open, heat or burn these batteries. **Do not** short-circuit.
- Dispose of old and used batteries in the proper manner and store them out of children's reach!
- **Damage** may be caused to the transponder **if you reverse the polarity**.
- Do not touch the contacts on the new battery with your hands when replacing the old one. We recommend using cotton gloves free of fat or grease.
- When replacing the batteries, make sure that the electronics are not subject to mechanical load and are not damaged in any other way.
- Access through a door may be blocked due to defective or incorrectly programmed products. SimonsVoss Technologies GmbH is not liable for consequences of incorrect installation, such as blocked access to injured persons or those at risk, physical damage or any other losses. SimonsVoss Technologies GmbH accepts no liability for damage caused by incorrect fitting or installation.
- SimonsVoss Technologies GmbH reserves the right to make changes to the product or implement technical further developments without prior notice.
- This documentation has been compiled in accordance with the best knowledge available to us. However, errors cannot be ruled out. No liability is accepted in such cases.
- Should there be differences in the content of other language versions of this documentation, the German version applies in cases of doubt.

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2 GENERAL INFORMATION

Transponder 3064 is a digital ‘key' which is programmed with locking plan software and functions using contactless, wireless communication. All functions are activated by pressing a button. These include authorisation identification and the opening and locking of doors, gates, barriers, furniture locks and similar elements. The transponder communicates with digital components - cylinders, Smart Relay and activation units - by sending and receiving continually changing crypto codes, which ensure that the system cannot be misused.

As System 3060 functions using active transponder technology, the transponder features its own power source, a battery. This offers an advantage over passive technologies thanks to the lower power requirements in the cylinder and the greater operating range.

SimonsVoss supplies different transponder models. These models are described in this document.

The transponders are provided with two different firmware generations – G1 and G2. G2 features a more efficient communication protocol than G1. This will allow you to create larger, more efficient locking systems. Authorisations are written both on the locking cylinder and the transponder. This delivers greater flexibility in programming.

A G2 system can also form a virtual network, i.e. authorisations and blocking lists are written on the transponder and transmitted into the locking system. This manual looks at the specific differences between transponders. Refer to the G2 manual for more detail.

The G2 transponder features both the G1 and G2 protocols and can thus be programmed for both locking system generations.

2.1 Mode of operation

To carry out an action, the transponder is held close to the digital lock (up to 40 cm for locking cylinders and 120 cm for Smart Relay) and then the transponder button is pressed. The transponder and the lock exchange key and authorisation data. The required action, such as opening or locking the door, can be carried out if the transponder is authorised for the digital lock.

2.2 Incorporating the transponder in different locking systems

Each transponder can be used in three [G1] or four [G2] completely separate locking systems, providing that no areas of validity have been programmed. Each locking system receives its own password and is managed separately.

Example:

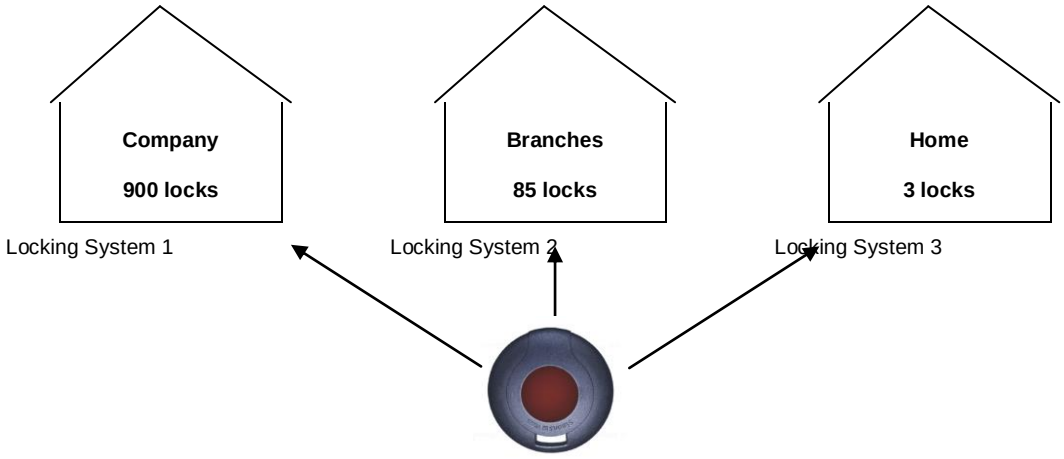

Figure 1: A transponder for several separate locking systems

2.3 Higher-ranking locking level

In order to create transponders which are to be authorised for more than three [G1] or four [G2] locking systems, higher-ranking locking levels need to be set up in such locking systems. A maximum of 3 higher-ranking levels can be created in a single locking system (green, blue and red).

! The red level is designed for security and safety services such as the fire service as these transponders can also open locks deactivated by a Block Lock function.

! A higher-ranking level is always reprogrammed at doors.

200 transponder IDs (TIDs) [G1] or 1024 [G2] are reserved per level in the LSM. Authorisations for different transponders in the higher-ranking locking levels may be different.

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Example:

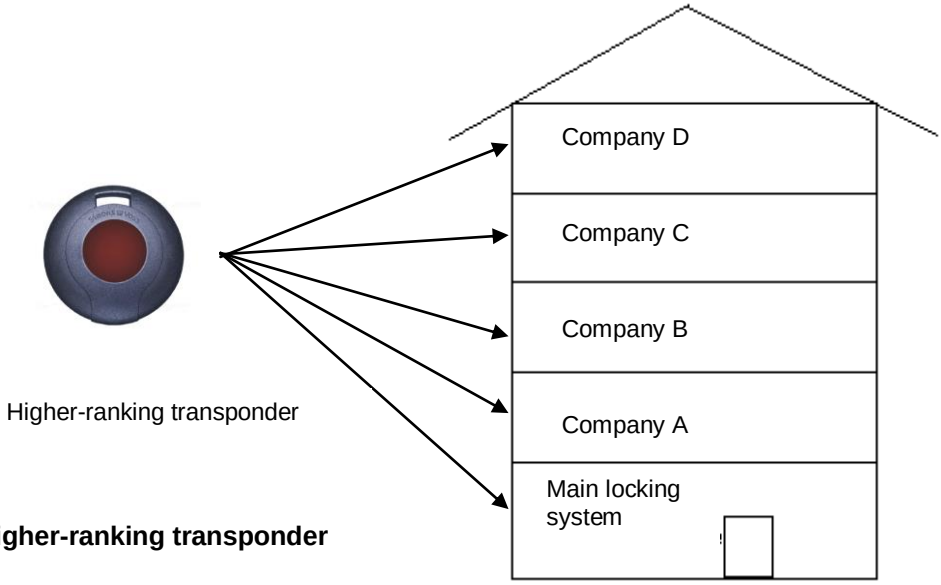

Figure 2: Higher-ranking transponder

Four companies are based in an office building with a main lock which is used by all the companies. Each company manages its own locking system with its own password. Each employee receives a transponder which is authorised for two locking systems, the main lock and their company's own system.

The building management or on-site technicians and cleaning staff require access to all levels. The fire service, for example, requires a transponder which is authorised for all five locking systems in the building and also provides access if the alarm system is activated and the locking cylinders are deactivated by a Block Lock function.

Higher-ranking locking levels are created in each of the five locking systems to provide access to all five locking systems. Each level receives the same password for all locking systems.

3 SPECIAL DESIGNS

3.1 Password transponder

Instead of being entered manually, the locking system password can be transmitted by radio using a special transponder. Standard transponders cannot be used as a password transponder.

3.2 Switch transponder

For this type of transponder, a two-wire cable (about 1 m) is connected to the switch contacts on the button and fed to the outside. The transponder interconnects when the two wires are connected.

Examples of use:

- Linking third-party systems
- Remote activation of a digital locking cylinder or Smart Relay

3.3 Explosion protection transponder (EX protection)

This transponder features the same functions as Transponder 3064, but is also approved for use in Explosion Protection Zone 1 areas (please refer to Section 3 for further information).

3.4 Bonded transponder

Bonded transponder

This is a standard transponder as described above, but with a casing bonded to the transponder. This prevents the end user from misusing the transponder electronics or opening the casing.

3.5 Transponder with integrated RFID chip

Transponders can be supplied with different integrated RFID chips as an option. These RFID Chips do not necessarily need to be programmed using the LSM programme. There is no logical connection between the active transponder and the passive RFID component.

The following different technologies are offered:

- EM® 4102
- HITAG® 1
- HITAG® 2
- MIFARE® Classic
- MIFARE® DESFire
- LEGIC® MIM256
- LEGIC® ADVANT 128

3.6 Fire service key tube transponder

This transponder features a narrower casing (33 mm), so that it can be stored in a standardised fire service key tube safe.

3.7 G2 battery replacement transponder

A G2 battery replacement transponder can be created in the LSM programme for G2 locking systems. This transponder can be used to deactivate freeze mode by activating it on the cylinder. The door can then be opened with an authorised transponder. This means there is no need to take the programming device to the lock concerned.

! In the case of an active battery warning, batteries are still used each time the door is opened. This may lead to the batteries being **fully discharged** if the transponder is not used for its **intended purpose**. The batteries must be replaced immediately in such cases.

4 EXPLOSION PROTECTION TRANSPONDER

4.1 General information

This transponder is a special product which can be carried and used in Zone 1 potentially explosive areas. Zone 1 refers to an area where a potentially explosive atmosphere sometimes occurs during day-to-day operations. The following aspects must be taken into account:

- The casing must not be opened.
- Only SimonsVoss Technologies GmbH may change the battery, unlike Standard Transponder 3064.
- As a general rule, users must comply with explosion protection regulations, such as the German Operating Regulations BGR132, when using the device.

4.2 Industrial standards

This transponder has been tested in accordance with applicable explosion protection standards. Refer to the following for further information:

- Directive 94/9/EC
- DIN EN 60079-0 (Electrical equipment for potentially explosive atmospheres)
- DIN EN 60079-11 (Intrinsic safety 'i')

4.3 Classification

The transponder is classified as follows:

- Explosion Protection Zone 1
- Intrinsic safety ib
- Explosion Group IIC
- Temperature class T3

- Equipment Group II2 G

This applies to areas where a potentially explosive atmosphere may occur due to gases, vapours or mist. The information given refers to an ambient temperature between -20°C and +40°C in the area of use.

5 ADDITIONAL FUNCTIONS

The following functions can be activated in the locking plan software:

5.1 Time zone control

ZK transponder models can be programmed for digital locks, so that the transponders are only authorised for access at specific times. Such time zones are added to the locking plan software and the transponders are then allocated to the relevant time zone group.

Example: Mr Smith is issued the following authorisation:

Monday to Friday	9 a.m.-6.30 p.m.
Saturday	9 a.m.-12.45 p.m.
Sunday	No authorisation

5.2 Date of validity

Transponders can be programmed which feature a validity date for authorisation (also possible with a non-access-control model!):

- Transponders which are valid **from** a specific point in time (e.g. as from 8 a.m. on July 12, 2013)
- Transponders which are valid **until** a specific point in time (e.g. until 5 p.m. on July 12, 2013)
- Transponders which are valid **for** a specific time period (e.g. between July 1, 2012 until July 31, 2014)

! A data set is created **each time** for the activation or expiry date.

5.3 Activation transponder

As the result of a Block Lock function, all authorised transponders are blocked for digital locks in a safety area when the alarm system is activated to prevent false alarms. Transponders can be programmed which eliminate this blocking mode and can thus be used in an emergency by the fire service, for example. The door can then only be opened using an authorised transponder.

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6 BATTERY REPLACEMENT

6.1 Battery Replacement 3064

The transponder battery can be replaced at any time when the battery warning is active (see Locking Cylinder 3061 Manual – Battery warning). Open the casing carefully, so that you can find the battery easily. Open the battery holder and remove the battery. Insert new battery and close battery holder. Press the casing back together again.

When changing the battery, you must ensure that you do not take more than two minutes, that you do not press the transponder button during this time and that you do not cause a short circuit, otherwise you may cause data to be lost.

6.2 Battery replacement for explosion protection transponder

! **Only** SimonsVoss Technologies GmbH may replace the battery in this transponder.

7 LOSS OF THE TRANSPONDER

7.1 Emergency opening

An emergency opening may be carried out with the Smart CD and PDA and by entering the locking system password.

7.2 Replacement transponder [G1]

If a transponder is lost, it can be blocked in the locking plan and a replacement transponder added. If the locking system is operated in overlay mode [G1], the lost transponder is blocked automatically as soon as the replacement transponder is activated at the digital lock (see Software Operating Instructions for programming and procedure).

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8 OVERVIEW OF DIFFERENCES BETWEEN G1 AND G2 PROTOCOLS

	G1	G2
Locks per locking cylinder on a transponder	16,000	64,000
Number of locking systems	3	4 [G2] + 3 [G1]
Max. number of TIDs per higher-ranking locking level	200	1024
Time zone groups	5 + 1	100 + 1
Physical access lists storable	n/a	1000
Locking plan information	Locks	Transponders or locks

Table 1. Transponder differences between G1 and G2

9 DATABASE TRANSPONDER

Casing	Material	Weatherproof plastic Polyamide
	Colours	Black casing, button in different colours
	Diameter	42.0 mm
	Height	13.7 mm
Ambient conditions	Temperature range: -20ºC to +60ºC Protection rating: IP65 IP66 (.SPEZ version) Environmental Class III	
Batteries	Type	CR 2032
	Manufacturer	Varta, (Panasonic, Sony)
	Quantity	1 unit
	Voltage	3 volts
	Battery life	G1: up to 100,000 operations or up to 10 years on standby G2: up to 400,000 operations or up to 10 years on standby

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This product fulfills essential requirements of CE-Conformity.
The declaration of conformity can be found at
www.simonsvoss.com

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1.0. General information

Please take 15 minutes and read through these Instructions in order to familiarise yourself with the function of your Pin-Code Keypad.

1.1 Safety Remarks

Caution! Incorrect handling of the batteries used in this product can result in the risk of fire or burns. Do not charge, open or burn these batteries or heat them to more than 100° C (212° F).

Make sure that the PinCode Keypad remains free of dirt and scratches; do not drop the Keypad or otherwise subject it to heavy impacts.

Furthermore, please note that you should program the Keypad with a PIN code immediately after you start it up.

Use of a SimonsVoss PinCode Keypad requires knowledge of the use of the product and of the SimonsVoss software. For this reason, only trained and authorised personnel should program the PinCode Keypad.

SimonsVoss Technologies AG will not accept any liability for damages caused by incorrect programming.

If the PinCode Keypad is incorrectly programmed or is defective, access through a door may be blocked. SimonsVoss AG is not liable for the consequences, such as blocked access to injured or endangered persons, property damage or other damages.

The casing of the PinCode keypad is secured with two Torx screws (TX6) for increased security against unauthorised opening.

1.2 Product Description

The PinCode Keypad 3068 is a digital "key" (transponder), which opens SimonsVoss lockings without contact via radio transmission after the correct numerical codes are entered.

To configure the system, you must first correctly configure at least one PIN and the associated integrated transponder for the locking. The associated locking is then released after a correct PIN has been entered.

The PinCode Keypad that you have purchased is a product that can be used both inside and out. The product has its own power supply, so that it can be operated completely self-sufficiently. Installation is very simple, because absolutely no cabling is required.

Because of the modularity, this component can be seamlessly integrated into the SimonsVoss System 3060, and, like all SimonsVoss components (on the transponder side), it can be programmed with the locking plan software.

2.0 Functional Overview

2.1 Function Overview

The PinCode Keypad comprises the following components:

- PIN code input and evaluation
- Integrated digital key (transponder), which opens the associated locking when it is triggered after the PIN code has been evaluated successfully

Consequently, the PinCode Keypad allows you to address all SimonsVoss lockings (such as cylinders, Smart Relays, and even activation units, etc.) using the PIN code. Three different PINs are available, so that individual PINs can be assigned to up to 3 people or groups of people. When a PIN is reprogrammed, only one of up to three user groups needs to be informed. Furthermore, in SimonsVoss lockings (with the time control function, meaning access control and time zone control), it is possible to grant a person or group of people access to a building only during certain times, and to keep a record of which PIN accessed the locking at what time.

2.2 Operating modes

The PinCode Keypad has four distinct operating modes:

Mode:	Explanation:
Standby	The PIN Code Keypad is in standby mode, and uses only very little power.
Opening	After a correct PIN has been entered, the locking is addressed via radio transmission and can be operated.
Programming	In this mode, the following can be programmed or reset: • the individual PINs (max. 3) - directly via the Keypad • or the associated integrated transponders (max. 3) - using the SimonsVoss software
Battery warning	A two-level battery warning system provides plenty of advance notice when it is almost time to change the batteries.

2.3 Operating

After starting up and configuring the PinCode Keypad, it and a SimonsVoss locking represent a so-called "hidden lock" within the System 3060. You can program the PIN directly by making entries on the Keypad. On the other hand, the integrated transponders are programmed by means of the SimonsVoss software, and incorporated into the locking system in this way. The following sections describe the precise procedure for programming individual PIN codes and for programming the associated transponder data records, and the use of the PinCode Keypad.

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3.0 Start-up

The first time the system is started up you will need to replace the factory-set

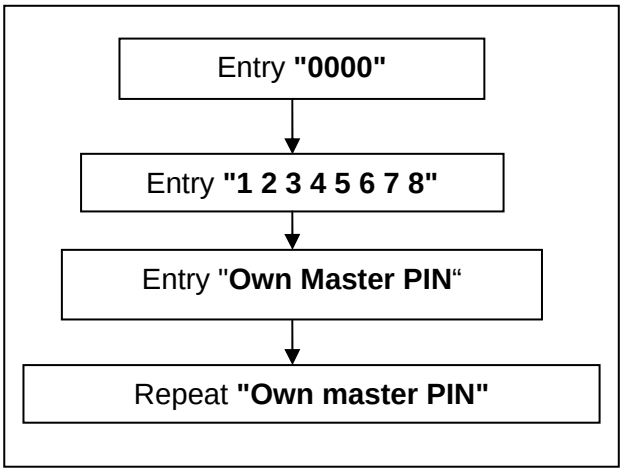
Master-PIN: **1 2 3 4 5 6 7 8**

With your own master PIN

Requirement:

- 8 digits
- may not start with a "0"

Your personal master PIN is needed for all programming processes for authentication purposes. Please keep it in a safe place where it cannot be accessed by unauthorised persons.



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4.0 Programming PINs

The Master PIN required for all programming procedures is defined by the user (e.g. the System Administrator). Please keep it safe and inaccessible to unauthorised persons, since the Master PIN is required for all programming procedures.

4.1 First Start-up

For the first start-up, the safety of your locking system requires that you program at least one PIN. Only after the PinCode Keypad has been programmed can it be guaranteed that only authorised users receive access.
Proceed as follows:

1. Press the "**0**" to change to programming mode
2. Enter the "**master PIN** "
3. Select the PIN that you want to program; in this case, press **"1"** for **"PIN 1"**
4. Enter the length of the PIN (you can choose a number with from **4-8** digits)
5. Enter the "**PIN**"
6. If the input was correct, the PIN is saved and confirmed

A PIN is not permitted to begin with **"0"** and you may not assign the same PIN more than once. The master PIN is used only for programming the PIN. It is not possible to operate lockings with the master PIN.

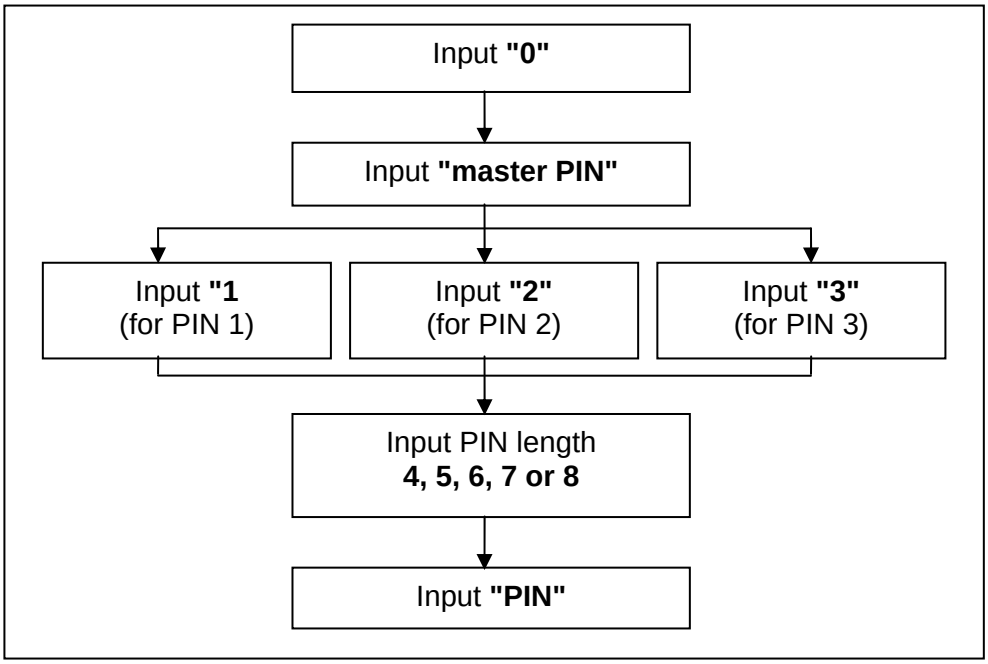
4.2 Programming Additional PINs

1. To program additional PINs, please proceed as follows:

   Press the "**0**" to change to programming mode
2. Enter the "**master PIN**"
3. Press
   - **"2"** for **"PIN 2"** or
   - **"3"** for **"PIN 3"**
4. Enter the length of the PIN (you can choose a number with from **4-8** digits)
5. Enter the corresponding "**PIN**".
6. The input was correct, the PIN is saved and confirmed

Attention: It is not possible to enter programming mode when there is a battery warning. This means that when the battery is weak, you cannot change or delete a PIN. Programming mode will only be available again after you have successfully changed the battery (see the section "Battery Replacement).

4.3 Procedure



5.0 Deleting PINs

5.1 Description

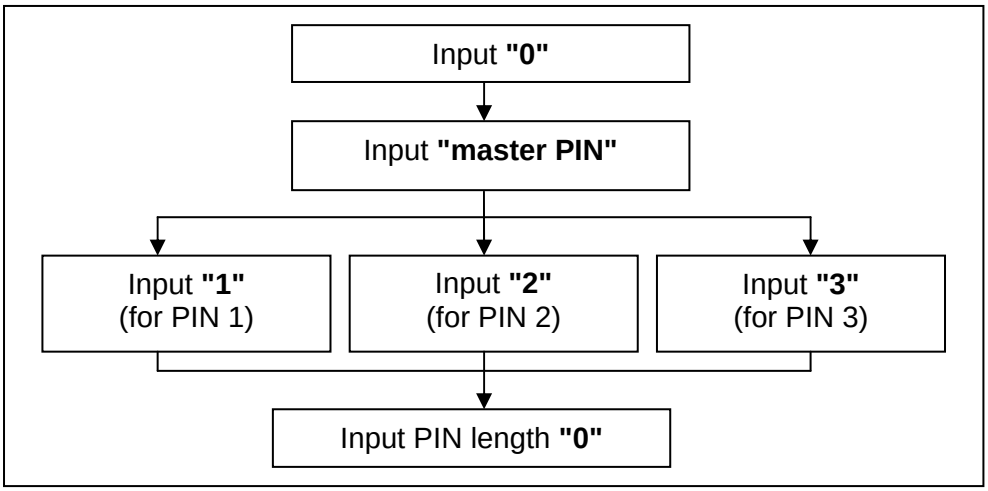
To deactivate PINs again, follow these steps:

1. Press "**0**" to change to programming mode
2. Enter the "**master PIN** "
3. Press
   - **"1"** for **"PIN 1"** or
   - **"2"** for **"PIN 2"** or
   - **"3"** for **"PIN 3"**
4. For the PIN length, enter **"0"**
5. If the input was correct, the PIN in question is deleted

In this way, you can deactivate one or more PINs again. They can only be reactivated if you program them again. If you do not need all the PINs, you can leave the extra one unprogrammed.

Attention: It is not possible to enter programming mode when there is a battery warning. This means that it is not possible to change or delete PINs when there is a weak battery. Programming mode will only be available again after you have successfully changed the battery (see the section "Battery Replacement).

5.2 Procedure



6.0 Programming the Transponder Data Records with the Simons Voss Software

6.1 Assignment of PINs and Transponders

- PIN1 ⇒ Transponder 1
- PIN2 ⇒ Transponder 2
- PIN3 ⇒ Transponder 3

Each integrated transponder has its own transponder ID (TID); the TIDs are saved in the SimonsVoss lockings when there is an access if the lockings have the time control function (i.e., access control). In this way, you can tell precisely which PIN was granted access and when.

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6.2 Description

To program the various transponders with the SimonsVoss software, please follow the procedure described in the following (also see the SimonsVoss "Software Manual"):

1. Press the "**0**" button twice in order to enter the transponder programming mode.
2. Enter the "**master PIN** ".
3. Start the **Transponder programming** function in the SV software
4. For the particular transponder:

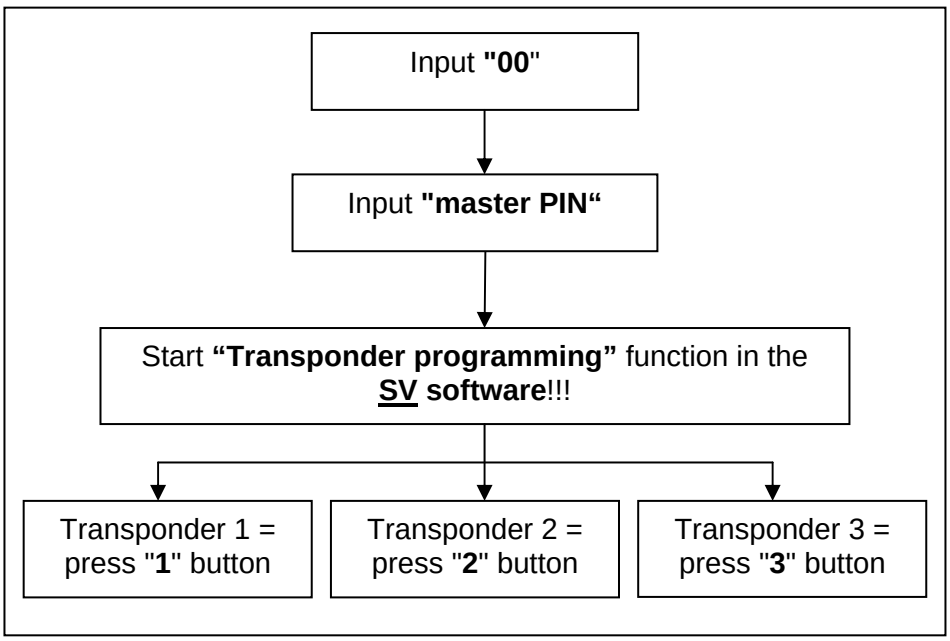
    - Transponder 1 = press the "**1**" button
    - Transponder 2 = press the "**2**" button
    - Transponder 3 = press the "**3**" button

5. Please check in the user interface to see that the programming was successful (yellow programmer flash must have been removed in the locking plan).

In order to be able to carry out the programming without problems, please first start the programming command in the SV software and only then select the required transponder using the PinCode Keypad. Otherwise it is not possible to guarantee successful programming.
The PinCode Keypad's three integrated transponders must be located in the same locking plan as the locking that you wish to address.

Attention: It is not possible to enter programming mode when there is a battery warning. This means that it is not possible to change or delete transponders when there is a weak battery. Programming mode will only be available again after you have successfully changed the battery (see the section "Battery Replacement).

6.3 Procedure



7.0 Reading out Transponders

Anytime it is possible to read out the integrated transponders (after they were programmed) with the SimonsVoss locking plan software.

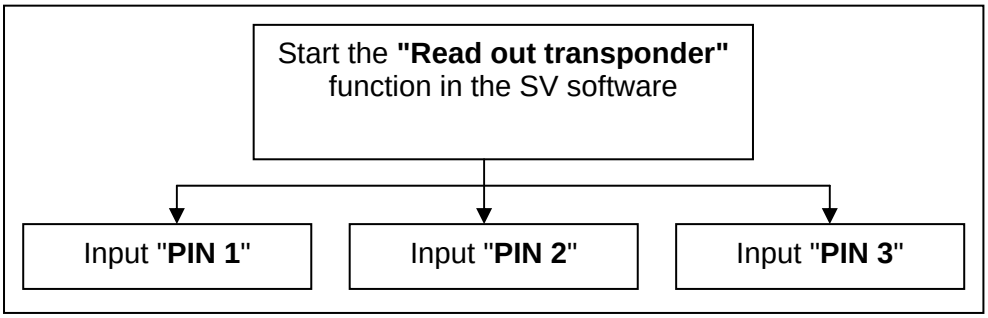
7.1 Description

To do this, proceed as follows:

1. Start the **"Read out transponder"** function in the SV software
2. For the particular transponder:

   - Transponder **1** = enter **"PIN 1"**
   - Transponder **2** = enter **"PIN 2"**
   - Transponder **3** = enter **"PIN 3"**

7.2 Procedure



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8.0 Resetting Transponders

8.1 Description

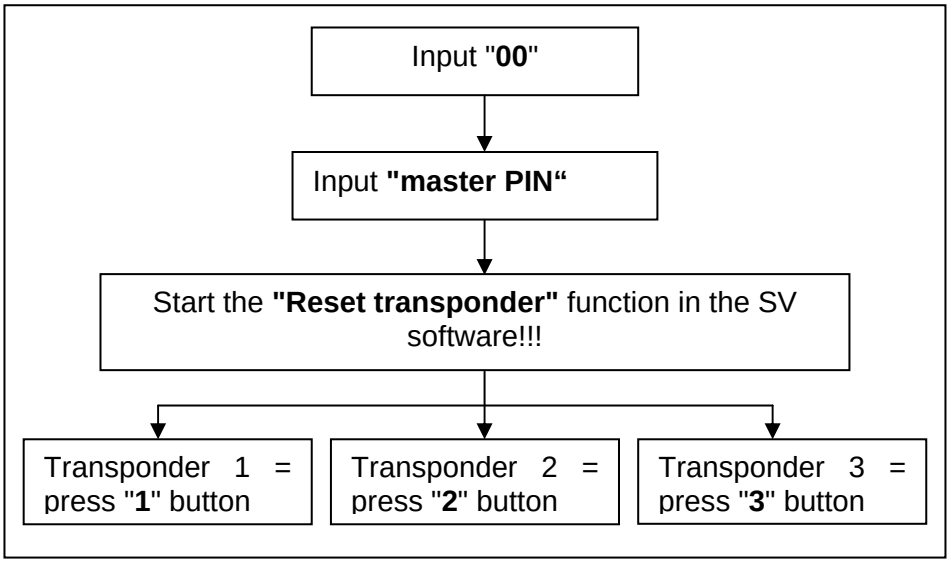
To reset the various transponders, please proceed as follows:

1. Press the "**0**" button twice.
2. Enter the master PIN.
3. Start the "**Reset transponder"** function n the SimonsVoss software.
4. For the particular transponder :

   - Transponder 1 = press "**1**" button,
   - Transponder 2 = press "**2**" button
   - Transponder 3 = press "**3**" button

Attention: It is not possible to enter programming mode when there is a battery warning. This means that when the battery is weak, you cannot reset a transponder. Programming mode will only be available again after you have successfully changed the battery (see the section "Battery Replacement).

8.2 Procedure



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9.0 Opening

In order to use the PinCode Keypad to open the associated locking, proceed as follows:
Enter a PIN that has already been programmed. You are not permitted to wait more than 5 seconds between the entries of the individual numbers.
In you have entered the correct number and the integrated transponder has been programmed, the LED lights GREEN and a signal is sounded. Then the integrated transponder opens the locking.

10.0 Meaning of the LED

The built-in LED can light in one of three colours: green, yellow and red. These colours have the following meanings:

- Green — Digit that was input has been accepted

  PIN input was OK, which means that
  the correct PIN has been recognised, open signal is being sent

  PIN length OK
  PIN programming procedure was successful

- Yellow — battery warning

- Red — PIN input was incorrect

  Input of master code was incorrect
  Repeated incorrect input of the PIN (manipulation)
  PIN length was not entered correctly.

11.0 Battery Warning

To obtain a defined status for the PinCode Keypad and to minimise operating errors, a 2-level battery warning system has been integrated.
When the battery capacity begins to drop, you will be notified of this in plenty of time to allow you to replace the batteries.

Battery warning level 1: The opening procedure is carried out after a delay. The diode blinks YELLOW and the buzzer sounds for 10 seconds. The PinCode Keypad does not send the open command until after these 10 seconds.

Battery warning level 2: In this case, the opening procedure is again carried out after a delay. The diode blinks YELLOW and the buzzer now sounds for 20 seconds. The PinCode Keypad does not send the open command until after these 20 seconds.
You should not wait any longer to replace the battery. Otherwise, the system will stop functioning after a short time.

12.0 Battery Replacement

In general, the batteries must be replaced by trained experts only. To do this, proceed as follows:

1. Completely unscrew the two screws in the bottom of the housing.
2. Remove the front of the housing.
3. Carefully release the battery clip from the printed circuit board (Figure 1).
4. Remove both batteries (Figure 1).
5. Insert the new batteries; the positive pole must be pointing up (Figure 2).
6. Carefully hook the battery clip back into the printed circuit board (Figure 3).
7. Put the housing back on.
8. Screw the two housing screws back into the housing from below.

After you have replaced the batteries, all functions will be available again. Please always replace both batteries at the same time, because they have been charged to approximately the same level.

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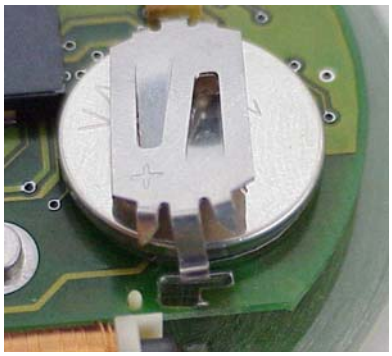
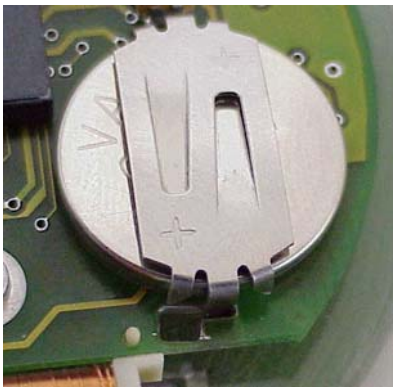
When replacing the batteries, be absolutely sure that no water is allowed to penetrate into the housing and that the electronics do not come into contact with water. If necessary, carefully wipe dry the housing section that is attached to the wall.

(Picture 1)



(Picture 2)



(Picture 3)

13.0 Special Functions

13.1 Hidden Lock for SimonsVoss VdS Shuntlock 3066

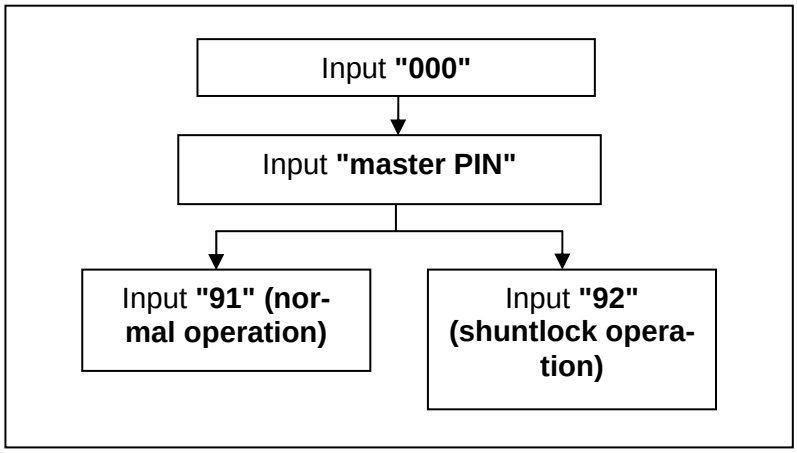
The PinCode Keypad can be used for activating SimonsVoss activation units (VdS Shuntlock 3066). This is done by mounting the Keypad within the transmitting range of the activation unit. After you have input the correct PIN, the activation unit is addressed and the alarm system is activated or deactivated via the shuntlock. This allows the requirements of VdS Class C up to SG 6 to be fulfilled by including a hidden lock.

The VdS-certified activation units from SimonsVoss need a doubled opening protocol for activation/deactivation procedures (double-click when the transponder should activate or deactivate the system).

The following explains the configuration of the PinCode Keypad in order to have it emulate the "double-click" and consequently be suitable for carrying out activation/deactivation procedures. To set the configuration for this purpose, proceed as follows:

1. Press the "**0**" button three times
2. Input the master PIN
3. Then press:

   - either **"91"** for normal operation (default setting)
   - or **"92"** for a double-click for shuntlock operation



If the input was correct, the PinCode Keypad stores the change and gives a positive acknowledgement (LED and buzzer).

Important: Please set the two-time opening protocol (double-click) only when you are using a SimonsVoss VdS Shuntlock 3066. Otherwise, there may be malfunctions or unwanted effects.

You can switch from one configuration to the other at any time.

Attention: It is not possible to enter programming mode when there is a battery warning. This means that when the battery is weak, you cannot change or delete any functions. Programming mode will only be available again after you have successfully changed the battery (see the section "Battery Replacement).

13.2 Miscellaneous

The quasi-proximity and validity and expiry mode functions are not available with the PIN Code Keypad.

14.0 Technical Specification

Dimensions WxHxD	96 mm x 96 mm x 14 mm
Weight	102 g (incl. batteries)
Material	Plastic
Colour	Grey with transparent ring
Maximum number of operations with one battery set	AApprox. 100,000 operations or 10 years on standby
Operating distance from locking cylinder	Up to a max. of 40 cm (when the transponder antenna is parallel to the cylinder antenna)
Operating distance from SmartRelay	Up to a max. of 120 cm (when the transponder antenna is parallel to the SmartRelay antenna)
Protection class	IP 65
Working temperature range	-20° C to 50° C (-4° F to 50° F) without moisture condensation
Battery type	2 x 3 V DC lithium battery type CR2032
Battery replacement	Only by trained personnel