Q 3007 Biometric Transponder

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SimonsVoss technologies

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1.0 General Instructions

Please take 15 minutes to familiarise yourself with how your Biometric Transponder Q 3007 works with the help of these operating instructions.

1.1 Safety instructions

Caution! – The batteries used in this product could burn or cause a fire if they are not handled properly. Do not charge, open or burn these batteries or heat to over 100°C.
Make sure that the sensor surface is not dirty or scratched. Do not drop the Q 3007 or expose it to any other strong impacts.
In addition, please make sure that the initial scanning in of fingerprints is not carried out by unauthorised persons!
We advise you to protect the Q 3007 against unauthorised access if possible.
Handling a Q 3007 assumes knowledge of how to use SimonsVoss software. Programming should therefore only be carried out by trained specialist staff.
SimonsVoss Technologies AG is not liable for any damage caused by incorrect programming.
An incorrectly programmed or faulty Q 3007 can block access via a door. SimonsVoss AG is not liable for the consequences of such an occurrence, such as blocked access to persons who are injured or in danger, material damage or any other damage.

1.2 Product description

The Q 3007 differs from normal transponders by the fact that it is also equipped with a highly sensitive Atmel Fingerprint Sensor. In just a few seconds, a high-powered processor in the transponder compares the saved fingerprint with the fingerprint read in by the sensor. In this way, only people whose fingerprints have been scanned in already can use the transponder. This guarantees maximum security against unauthorised use by third parties, e.g. if the transponder is unsupervised, or is lost or stolen. The Q 3007 is therefore particularly suitable for applications where a transponder is provided with very many or very specific authorisations, e.g. if one person has a general transponder for all doors or access to high-security areas.

2.0 Overview of function

2.1 Basic information on operation

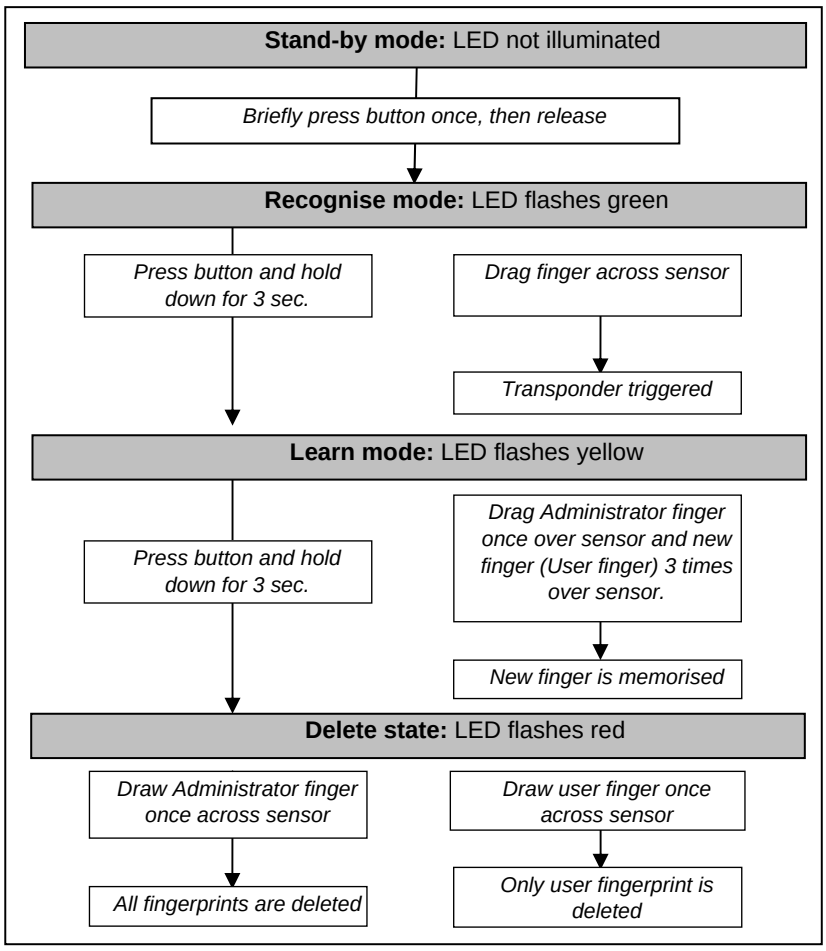
The Biometric Transponder Q 3007 scans fingerprints using a fingerprint sensor. The finger is dragged across the sensor, rather than being pressed against it.
The following should be noted:
The fingerprint to be scanned/memorised should always be dragged over the sensor in the same way.
To do this, place the tip of the finger that is to be stored or to be recognised at the upper edge of the Biometric Transponder and draw it across the sensor from top to bottom (towards the button) at a constant speed whilst applying slight pressure. The design of the housing means that the finger is guided properly through the slightly raised side walls. This more or less excludes the possibility of using the transponder incorrectly.
The fingerprint sensor can thus pick up the fingerprint line by line and reassemble it into a complete image in the integrated processor. If the reassembled image matches the saved image, the Transponder is released.

2.2 Operating states

The Q 3007 has four different operating modes:

Mode	***Function***
Standby	The Q 3007 is normally on "Standby" in order to save the battery capacity. After it has completed a function (e.g. scanning), it always returns to the standby mode.
Learn	In the "Learn" mode, new fingerprints can be memorised. Up to 6 different fingerprints can be saved, two of which are what we call "administrator" fingerprints. New fingerprints (user fingerprints) can only be scanned in with the help of an administrator. The only exception is the scanning of the first two fingerprints (Administrator fingerprints), see below
Delete	In the "Delete" mode, fingerprints that have been memorised can be deleted. Individual prints can be deleted, or all fingerprints can be deleted at once.
Recognise	The "Recognise" mode is the mode before a door is opened. In this mode, the Transponder is released if a fingerprint is correctly recognised.

2.3 How the transponder works



You can interrupt the action in each mode by pressing the button briefly to change to Standby.

2.4 "Learn" state: start-up, scanning in fingerprints

Initial start-up - scanning in the first 2 fingerprints (Administrator fingerprints)
To start the Q 3007, two "Administrator fingerprints" need to be scanned in first of all. We recommend that a fingerprint from the left and right hand of one person, the administrator (e.g. safety officer) is used for this. However, you can also use one finger from two different people.

Please note:
The first two fingerprints to be scanned in are automatically (!) the Administrator fingerprints. Without them, no further fingerprints can be scanned in or deleted later!

To scan in and store the first Administrator fingerprint (e.g. left thumb), please do the following:

1. Briefly press the transponder button; the LED will flash green.
2. Then press the button again and hold it pressed for at least 3 seconds (until the LED flashes yellow).
3. Release the button. The system is now ready to scan for 30 seconds, and this is indicated by rapid yellow flashing.
4. **As a high quality of the fingerprint to be teached in is important for good recognition during every day use, please make sure, that your finger to be scanned in is not too dry (e.g. breath on them before having them scanned in)**.
5. Drag finger across the sensor; the LED goes off; after about 1 second, the LED flashes green once to indicate that the fingerprint has been accepted.
6. When the LED flashes yellow rapidly again, drag the finger to be scanned in across the sensor again.
7. Now repeat steps 4 and 5 twice again (so that you have drawn your finger three times across the fingerprint sensor altogether). If an attempt has been unsuccessful (LED is illuminated red), drag your finger across the sensor again.

Once the fingerprint has successfully been scanned, the data are saved. This step takes about 2-5 seconds and is indicated by a yellow light flashing at 2 second intervals. The diode is then briefly illuminated green, and the Q 3007 returns to Standby.

The Q 3007 can now be used by the Administrator, or other fingerprints can be scanned in. Please note that the second fingerprint that is scanned in also has Administrator rights!

Scanning in more fingerprints (User fingerprints)

Further fingerprints (maximum 4) can be scanned in as the Administrator fingerprints have been, except that the Q 3007 must first be cleared for this by an Administrator fingerprint. This prevents unauthorised persons from scanning in their own fingerprints and thus gaining access rights that are not allowed.

We recommend that every person who is to use the Q 3007 should also be scanned in with two fingerprints, one per hand. This means that three people can be scanned in, with two fingerprints for each one. To scan in more fingerprints, please proceed as follows:

1. Briefly press the transponder button and wait until the LED flashes green.
2. Then press the button again and hold it pressed for at least 3 seconds until the LED flashes yellow, then release the button.
3. Draw the Administrator finger across the sensor; the LED goes off and then flashes green once after about 2 seconds. The system is now ready to scan for 30 seconds, and this is indicated by rapid yellow flashing light. Drag the User finger across the sensor; the LED goes off; after about 1 second, the LED flashes green once to indicate that the fingerprint has been accepted.
4. When the LED flashes yellow rapidly again, draw the finger to be scanned in across the sensor again.

5. Now repeat step 4 twice again (so that you have drawn your finger three times across the fingerprint sensor altogether). If an attempt has been unsuccessful (LED is illuminated red), drag your finger across the sensor again.

Once the fingerprint has successfully been scanned, the data are saved. This step takes about 2-5 seconds and is indicated by a yellow flashing light at 2 second intervals. The diode is then briefly illuminated green, and the Q 3007 returns to Standby.
Fingerprints that are already known can always be scanned in, even if 6 fingerprints have already been saved. Unknown fingerprints are then rejected by the LED flashing red twice.

Tips:

- Care in scanning in is rewarded by reliable recognition in use.
- Scanning in the same fingerprint several times improves the quality of the scanned features and thus makes the recognition of the fingerprint more reliable.
- Use a firm base when scanning in fingerprints. We recommend operation with one hand when scanning in thumb prints.
- When scanning in fingerprints, drag the finger across the sensor in a straight line, not too quickly, at an even speed and pressure.
- **Make sure that the sensor is clean and that your fingers are not too dry (e.g. by breathing on them before having them scanned).**

2.5 Querying the number of fingerprints scanned in

You can query the number of fingerprints already scanned in as follows:

1. Press the button once briefly (the LED flashes green)
2. Press the button again and hold it down for 1.5 - 2 seconds (not as long as 3 seconds, which will take you into "learn" mode).
3. The LED flashes red.
4. Then the LED will flash green as many times as the number of fingerprints scanned in (max. 6).
5. The LED flashes red (for a long time if the maximum possible number of fingerprints has been reached, or briefly if it has not).

If no fingerprints have been scanned in, the LED flashes red twice and then returns to Standby mode.

2.6 "Recognise" mode: one-off triggering of transponder

The mode known as the Recognise mode is the normal operating state for the Q 3007, i.e. a person whose fingerprint has been scanned in would like to trigger a Transponder signal, e.g. to open a door with a digital locking cylinder or to programme the Transponder within a locking plan.
To do this, proceed as follows:

1. Press the button of the Q 3007 briefly (for around 0.5 sec.), and the LED will then flash green.
2. Now drag your scanned finger over the sensor. Make sure that it is in the same position as it was when you scanned it in.
3. If the recognition attempt was successful, the LED shows green and the Transponder is triggered.

If the LED shows red, the recognition attempt was not successful. You can now try three more times. If these are not successful, the Q 3007 automatically returns to Standby mode.

Please note:

- It may occasionally happen that the Q 3007 does not recognise your finger even though it has been properly scanned in.
- If the fingerprint is rejected with a single red flash, the quality of the fingerprint trace was not adequate. This may be due to the fact, for example, that you did not drag your finger properly across the sensor (too quickly, not straight or not even) or that the surface of the sensor is dirty. If a finger is too dry, it may happen that it "judders" across the sensor. If this happens, please repeat the attempt, or moisten your finger slightly before you do so by breathing on it, for example. With a little practice, however, you'll soon get the knack.
- If the features of your fingerprint cannot be assigned to any of the scanned fingerprints, the diode will flash red twice. You may have accidentally presented a fingerprint that has not been scanned in, or you may have drawn this finger across the sensor quite differently initially from the way you are doing it now (e.g. at an angle, or with more or less of your fingertip in contact with the sensor).

Tip:
Not every fingerprint from a person is recognised equally reliably. If you are often not recognised with one finger, you should perhaps scan in another finger.

Make sure that the sensor is clean and that your fingers are not too dry dry (e.g. by breathing on them before having them scanned)..

3.0 "Delete" mode: deleting fingerprints

Both individually scanned fingerprints and all the fingerprints can be deleted from the memory.

If normal fingerprints (not Administrator fingerprints) are deleted, the other fingers that have been scanned in are not deleted. No Administrator fingerprint is needed to do this (any normal user can delete his own fingerprint).
If one of the two Administrator fingerprints is deleted, all the fingerprints are automatically deleted. The first two fingerprints that are then scanned in are automatically the Administrator fingerprints again.
Fingerprints are deleted as follows:

1. Briefly press the transponder button and wait until the LED flashes green.
2. Then press the button again and hold it pressed for at least 3 seconds until the LED flashes yellow. Release the button.
3. Press the button again and hold it pressed for at least 3 seconds until the LED flashes red. Release the button. You are now in the "Delete" state.
4. Drag finger across sensor.
5. If the first recognition attempt was successful, the LED flashes green. If the fingerprint is a normal one (user fingerprint), only this fingerprint is deleted; if it was one of the two Administrator fingerprints, then all the fingerprints are deleted. Deleting all the fingerprints can take up to 15 seconds. During this time, the diode flashes red every 2 seconds.
6. If the LED flashes yellow, the recognition attempt was not successful. You can now try three more times. If these all fail, the Q 3007 automatically returns to Standby mode.

4.0 Transparent mode

It is possible to switch the Biometric Transponder to what is called Transparent mode. In this state, the biometric inquiry is interrupted for 5 minutes and the Biometric Transponder can be used as a normal transponder (doors can be opened simply by pressing a button). At the end of 5 minutes or so, the Biometric Transponder returns to Standby mode.
Transparent mode is required, for example, for setting/cancelling alarms (if an SV Shuntlock VdS is installed) or if several doors need to be passed through in a short time.

To enter Transparent mode, please proceed as follows:

1. Press and hold the transponder button (longer than 1.5 seconds, < 3 sec.). The LED will flash green rapidly. The Transponder will now react to the button as if it were in Recognise mode.
2. Drag finger across sensor (LED shows green if the fingerprint is recognised).
3. The Biometric Transponder is triggered and switches to Transparent mode. The LED flashes red.
4. Pressing the button triggers the system and the LED shows green, followed by red flashing.

After 5 minutes, the Transponder switches off Transparent mode and returns to Standby.
Transparent mode can also be switched off manually by pressing the Transponder button before automatic switch-off until the green LED goes out (approx. 1.5 sec).

5.0 Programming the Transponder with the SimonsVoss software

The "Set validity" function and the "Quasi-proximity mode" are not available for the Q 3007.

6.0 Changing the Batteries

To replace the batteries, push the battery cover downwards and remove. Take out all the batteries and replace with new ones. Make sure that the polarity is correct (stamped into the base of the battery compartment).

7.0 Technical Data

Dimensions: H x W x D	65 x 32 x18 mm
Weight	22 g
Colour	Grey, with blue button
Operating distance, locking cylinders	approx. 40 cm (if the transponder (lengthways) is held parallel with the cylinder antenna)
Operating distance, Smart Relay	approx. 120 cm (if the transponder is parallel with the antenna of the Smart Relay)
Protection category	IP 54
Operating temperature range	0°C to 40°C without condensation
Battery type	3 V DC lithium battery type CR-1/3N

8.0 Table of Diode Signals

LED	*Mode*
off	Standby
off	moving finger on sensor followed by comparison with scanned fingerprint, please wait (max. 4 seconds)
Slow green flashing light	Recognise mode, wait for finger (max. 30 seconds)
Fast green flashing light	Release for transparent mode, wait for finger (max. 30 seconds)
One green flash	Successful action (recognise, learn, save, delete, trigger)
Slow yellow flashing light	Release for Learn mode, wait for Administrator finger (max. 30 seconds)
Fast yellow flashing light	Learn mode, wait for finger (max. 30 seconds)
Yellow flashing light	Save scanned finger, please wait (max. 5 seconds)
One or two yellow flashes	Error message in Delete state (cf. 1x or 2x red flashing)
Slow red flashing light	Delete state, wait for finger (max. 30 seconds)
Red flashing light	Delete scanned fingerprint, please wait (max. 15 seconds)
Red flashing light	Transparent state (max. 5 minutes)
Flash red 1x	Action unsuccessful
Flash red 2x	Fingerprint not recognised
Red, 0 to 6 times green, red	Query number of scanned-in fingerprints