QUICK START GUIDE
ekey home CP DRM
Access system with fingerprint scanning

ekey
Europe´s # 1
for fingerprint access solutions

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1 Note on this document

This quick start guide is not subject to updating. Subject to optical and technical modifications, any liability for misprints excluded.

2 Intended use

The ekey home system consisting of _ekey home finger scanner_, _ekey home control panel_ and _ekey power supply_ is a biometric access control system available in different hardware makeups and component combinations. It captures the unique features (minutea) of the fingerlines, which are then compared to the master templates saved in the finger scanner. To authenticate a finger successfully, a certain degree of identicalness (threshold) has to be reached. Based on this, a given switching actuator is activated (relay output situated on the control panel). The system has been primarily developed for opening front doors, apartment doors, garage doors, etc. in a residential, corporate and limited industrial environment. It has to be installed in a fixed position, and in accordance with the accompanying mounting instructions and wiring diagrams.

3 Product liability

In the below listed cases, the security, the protection and the flawless operation of the device may be impaired. The liability for the operability of the equipment and its safe operation is transferred to the operator / administrator / user:
- The device is not operated, maintained and cleaned in accordance with the respective manual.
- The device is used outside of the application area specified herein, e.g. in automotive applications, hazardous areas, safety-critical applications (threat to life or physical condition).
- The operator carries out unauthorized changes on the devices.
- The device ist not operated with the recommended voltage supply (safety extra low voltage – SELV).
- The system components are not connected electrically as stipulated in the respective wiring diagram.

4 Start-up

Before you start programming the system with the help of this quick start guide, the system must be mounted and wired according to the mounting instructions and wiring diagram supplied with the device. Please follow the steps below:

1.) Make everything you need ready to mount the devices as described in the mounting instructions supplied with the devices.

2.) Wiring

STOP **Do not connect the system to the mains yet! The electrical connection of the system can only be carried out by a specialist!**

Connect the wires as described in the ekey home wiring diagram supplied with the devices.

3.) Check the wiring.

4.) Conclude mounting the devices. Close all the device housings which you have had to open in order to be able to proceed with the wiring.

5.) **Read carefully the following chapter**

⚠ **„5 Operating the finger scanner". The correct operation (i.e. swiping the finger over the sensor) of the fingerprint scanner is decisive for the proper functioning of the whole system.**

6.) Connect the power supply to the mains.

STOP **The electrical connection of the system can only be carried out by a specialist!**

The _ekey home CP DRM_ displays the language selection

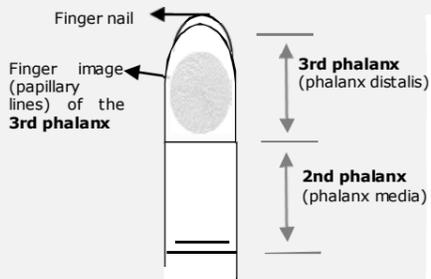The _ekey home finger scanner_ indicators are as follows:

ekey home FS WM
ekey home FS IN
ekey home FS OM
flashing **orange**

7.) Now start at point **A: INITIALIZING THE DEVICES** of „Programming the system"**.**

5 Operating the finger scanner

5.1 Function of the finger scanner

The function of the finger scanner is to capture and analyze the image of your finger, and then compare it with a reference template. Which part of your finger should be captured?

Finger nail

Finger image (papillary lines) of the 3rd phalanx

3rd phalanx (phalanx distalis)

2nd phalanx (phalanx media)

It is necessary to capture an image of the **3rd** phalanx. On the contrary, your finger scanner will not function properly.
In order to ensure this, take care to operate the finger scanner correctly. It is fundamental to place your finger correctly in the finger recess and move it down across the sensor at the right speed. Ergonomically speaking the best fingers are the index, the middle finger and the ring finger. **The thumb and the little finger may not be used!**

A finger scanner works like a camera. It makes a picture of the bottom side, the papillary lines, of your finger´s third phalanx. However, this picture must be of good quality, so that physical access can be granted whenever necessary.
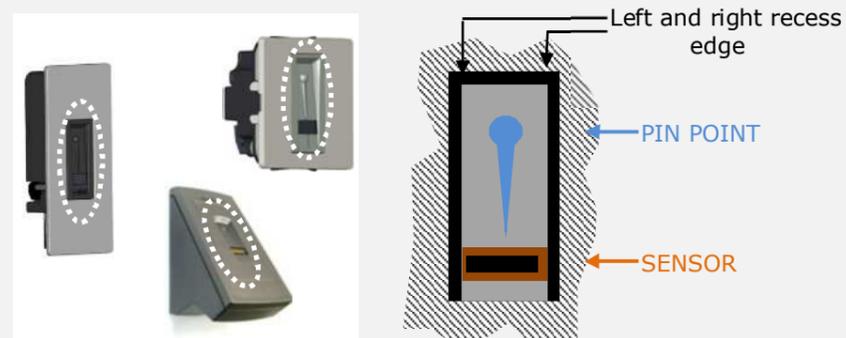
Imagine you wish to make a picture of someone, and this person
- keeps fidgetting
- runs by and you try to make a picture of him at that exact moment
- hides half of his face behind a tree
- etc.

What do you think these pictures will look like? On some of the pictures you will not even be able to recognize the person.

The finger scanner works in the same way. The finger scanner can only read all the information contained in your finger, and consequently open your doors securely and reliably, if you move your finger down across the sensor evenly and in the right position.
Let us now look at where you should place your fingers and at which speed you should move them across the sensor, so that the „pictures" of your fingers are perfect.

5.2 The finger recess – the control element

Left and right recess edge

PIN POINT

SENSOR

The finger recess allows to place the finger correctly so that a finger picture of good quality can be captured. It actually is the control element and consists of **pin point - sensor – right and left recess edges.**

5.3 Operating correctly the finger scanner

Lay your finger straight and flat on the finger recess.

Place the middle of your third phalanx directly on the finger recess **pin point**.

BE SURE to place your finger exactly in the middle of the area between both finger recess edges.

Take care to position your finger as flat as possible over the finger recess.

Ideally, when positioning your finger on the finger recess, stretch the remaining fingers, holding them close to the „swiping" finger. This helps keep the „swiping" finger even.

Now without changing the inclination of your finger, move it down across the sensor (the entire hand). Take care to swipe your finger at the right speed. BEWARE: The entire movement (swipe) should take about

1-1,5 sec.
If you swipe your finger too fast, then the status LED on the pin point will light up red.
Do not modify the position of the finger phalanges during the swipe (e.g. by bending the third phalanx).
There is no need to exert any **stronger pressure**. Move your finger across the sensor as if you would wipe bread crumbs off a table.

5.4 What you should not do

Place your third phalanx higher than the pin point

Not place your finger in the middle of the finger recess, or not place it parallel to the finger recess edges.

Rotate your finger in the finger recess.

Place your finger at a too steep angle with the finger recess.

speed >>

speed <<

Move your finger too fast or too slowly across the sensor.

If you move your finger across the finger scanner in one of the ways mentioned here, then the scanner will not be able to extract the information it needs about your finger image. It will therefore not function properly:
- **Poor recognition performance:** You will have to swipe your finger several times across the sensor before being able to induce the door to open.
- **Reference templates cannot be saved:** You are not able to save a finger in the system.

6. Programming the system with the _ekey home CP DRM_

6.1 Function of the control panel

The function of the _ekey home CP DRM_ in _ekey home_ is to program and parametrize the system. Using the
- LCD display and the
- 4 buttons,

you can
- register users and enroll their fingers
- delete users
- enter the security code
- change the security code
- change the relay switching times
- reset to factory settings
- …

The menu navigation is intuitive and very easy. You will find step-by-step detailed explanations of each specific menu function below.

6.2 Controls and their symbols

The LCD display guides you through the menu, displays status information and allows you to make specific settings.

OK The **OK** button allows you to register values and move to the next menu level.

V/> The **down arrow / right arrow** button allows you set values and navigate in the menu.

∧/< The **up arrow / left arrow** button allows you to set values and navigate in the menu.

ESC The **ESC** button allows you to exit a menu level or to cancel entries.

6.3 Programming the system

Now start programming the system. **The menu sequences for each single function are explained below in this document.** Let us not forget to mention the security code. You need it in order to be able to make changes in the system. **The factory default setting for this code is 99. Change this code to another one of your choice as soon as you have started up the system.**

Security code
Factory setting
99

A: INITIALIZING THE DEVICES-
The devices have to be initialized both for a new installation and when one of the devices has been replaced. Only after this has been done can fingerprints be saved. Please follow the steps below:

DISPLAY	KEY STROKE	DISPLAY	KEY STROKE	DISPLAY	KEY STROKE	DISPLAY	KEY STROKE	DISPLAY FOR 2 SEC	DISPLAY

START

Select language

If you have only replaced the **_ekey home CP DRM_**, and you are using an ekey home finger scanner on which fingers have already been saved (e.g. replacement due to a defective CP), you can keep **all the saved fingers** by swiping a saved finger over the sensor. If you strike the **ESC key,** then all the fingers will be **deleted!**

The devices have now been initialized. You may start enrolling users-> see **B:**

B: ENTERING THE SECURITY CODE –
The security code allows you to avoid system manipulations by unauthorized people. The factory default setting for this code is „**99**". Change this code as soon a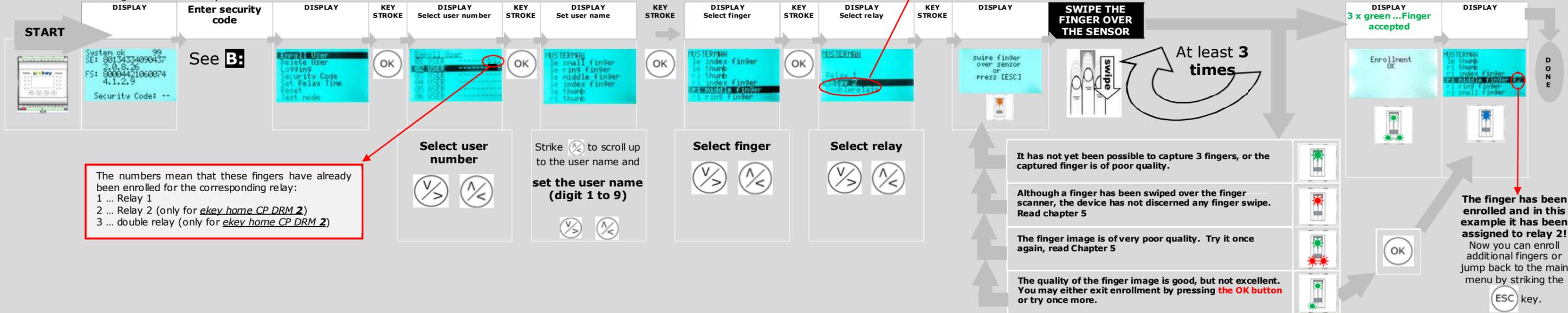s you have started up the system, in order to be protected against manipulations. **F: CHANGING THE SECURITY CODE** explains how to change the code:

DISPLAY	KEY STROKE	DISPLAY	KEY STROKE	DISPLAY	KEY STROKE	DISPLAY

START ... **DONE**

SECURITY CODE Digit 1   SECURITY CODE Digit 2

You now are in the main menu and may change system settings as you wish!

Should you have entered 3 times in a row a wrong security code, then your system will be locked for half an hour!
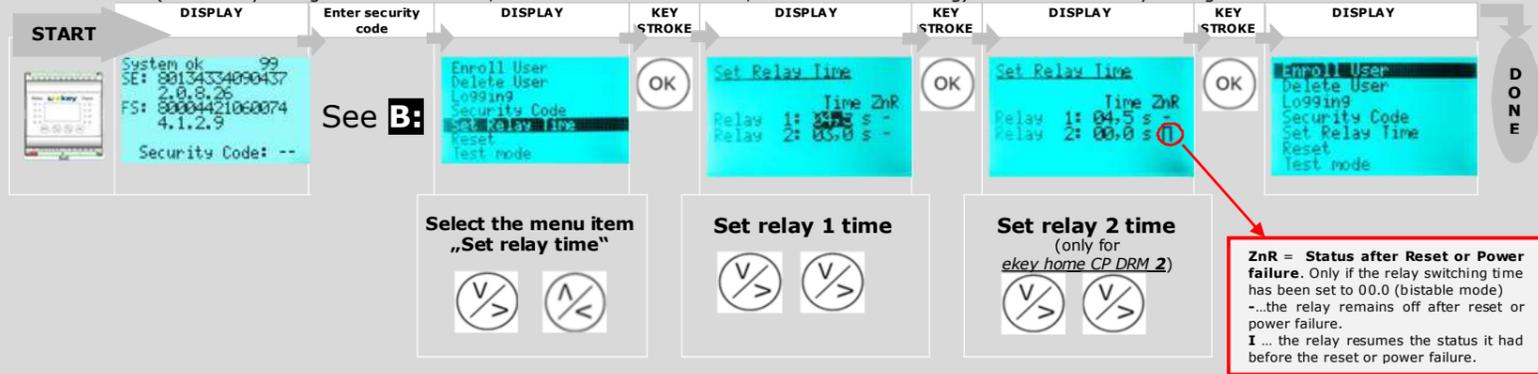
C: RECORDING FINGERPRINTS-
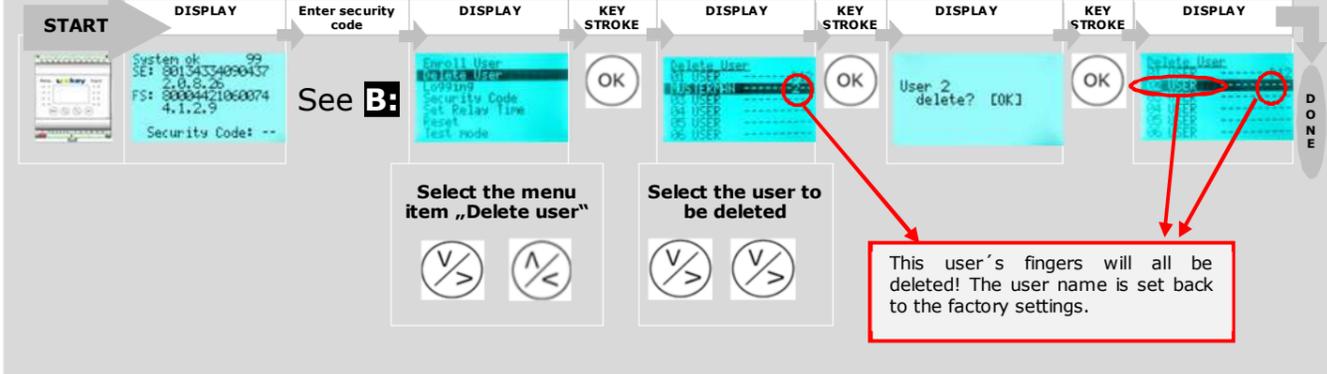When you record a user´s fingerprints, you:
- Set the user name
- Select the finger to be used (you can save up to 10 fingers / user; but you cannot save more than 99 fingers in the whole system)
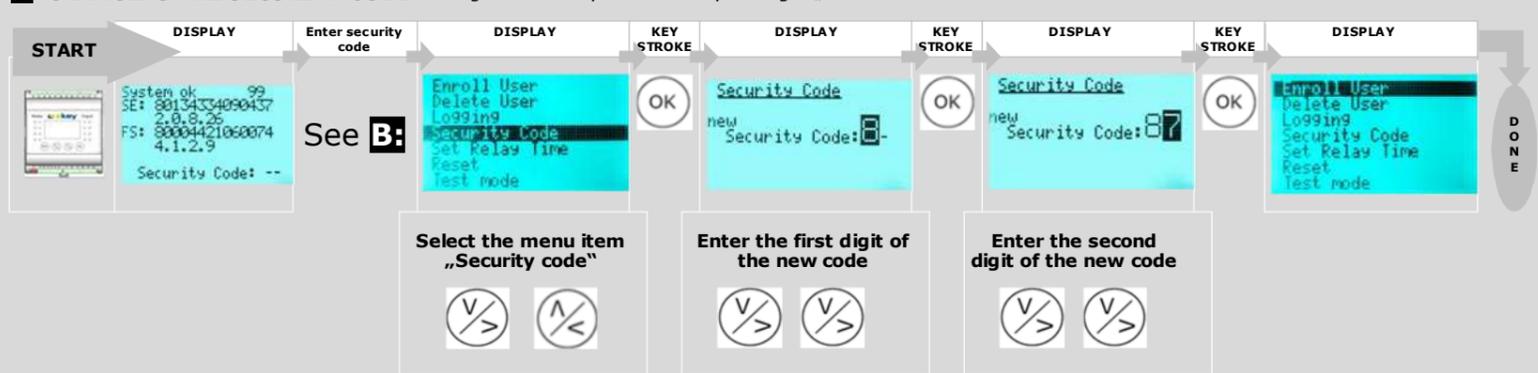- Record the finger's reference template

Repeat until complete user name is set (9 digits)

only for _ekey home CP DRM_ **2**

SWIPE THE FINGER OVER THE SENSOR

At least **3** times

DISPLAY	Enter security code	DISPLAY	KEY STROKE	DISPLAY Select user number	KEY STROKE	DISPLAY Set user name	KEY STROKE	DISPLAY Select finger	KEY STROKE	DISPLAY Select relay	KEY STROKE	DISPLAY		DISPLAY 3 x green ...Finger accepted	DISPLAY

START   See **B:**

The numbers mean that these fingers have already been enrolled for the corresponding relay:
1 ... Relay 1
2 ... Relay 2 (only for _ekey home CP DRM_ **2**)
3 ... double relay (only for _ekey home CP DRM_ **2**)

Select user number

Strike to scroll up to the user name and **set the user name (digit 1 to 9)**

Select finger

Select relay

It has not yet been possible to capture 3 fingers, or the captured finger is of poor quality.

Although a finger has been swiped over the finger scanner, the device has not discerned any finger swipe. Read chapter 5

The finger image is of very poor quality. Try it once again, read Chapter 5

The quality of the finger image is good, but not excellent. You may either exit enrollment by pressing **the OK button** or try once more.

The finger has been enrolled and in this example it has been assigned to relay 2! Now you can enroll additional fingers or jump back to the main menu by striking the ESC key.

D: DEFINING THE RELAY SWITCHING TIMES-
The switching time of each relay can be set from **1** sec to **99** sec. If you select **0** sec, then the relay operates in **bistable mode** (= the relay changes its switch status, which then remains as such, until the next switching). The default factory setting is **3** sec.

DISPLAY	Enter security code	DISPLAY	KEY STROKE	DISPLAY	KEY STROKE	DISPLAY	KEY STROKE	DISPLAY

START   See **B:** ... **DONE**

Select the menu item „Set relay time"

Set relay 1 time

Set relay 2 time (only for _ekey home CP DRM_ **2**)

ZnR = Status after Reset or Power failure. Only if the relay switching time has been set to 00.0 (bistable mode)
–...the relay remains off after reset or power failure.
I ... the relay resumes the status it had before the reset or power failure.

E: DELETING USERS-
It is only possible to delete users. **It is not possible to delete individual fingers of one same user!**

DISPLAY	Enter security code	DISPLAY	KEY STROKE	DISPLAY	KEY STROKE	DISPLAY	KEY STROKE	DISPLAY

START   See **B:** ... **DONE**

Select the menu item „Delete user"

Select the user to be deleted

This user´s fingers will all be deleted! The user name is set back to the factory settings.

F: CHANGING THE SECURITY CODE-
Change the security code. Factory setting is „**99**".

DISPLAY	Enter security code	DISPLAY	KEY STROKE	DISPLAY	KEY STROKE	DISPLAY	KEY STROKE	DISPLAY

START   See **B:** ... **DONE**

Select the menu item „Security code"

Enter the first digit of the new code

Enter the second digit of the new code

G: RESETTING TO FACTORY SETTINGS - ⚠   WARNING! All the fingers which have been enrolled will be deleted!

DISPLAY	Enter security code	DISPLAY	KEY STROKE	DISPLAY	KEY STROKE	DISPLAY

START   See **B:** ... DONE

Select the menu item „Reset"

Your _ekey home_ system has now been reset to the factory settings. All the fingers have been deleted! For a new start-up go back to „**A: INITIALIZING THE DEVICES**"

H: PLEASE CHECK THE USER´S GUIDE ON OUR HOMEPAGE www.ekey.net FOR ADDITIONAL MENU ITEMS.