OPERATING INSTRUCTIONS

ID16/39: Version 2 dated 27.1.2012

ekey home

Fingerscan Access Control System

ENGLISH

1. Foreword

Congratulations on the purchase of this premium finger scanner system

ekey home.

It has been manufactured with highest accuracy and guarantees a maximum amount of recognition performance. Enjoy the convenience - no more lost keys and no longer memorizing complicated codes.

From now on your finger is the key!

We hope you will enjoy your product a lot!

2. Manufacturer´s warranty

ekey biometric systems ('ekey') guarantees, under conditions which you can view on our website **www.ekey.net**, that the product is free from material or processing defects for

24 months from the date of purchase.

Warranty claims can only be made in the country where the product has been sold to you. ekey records the production of each product.

3. Contact

Visit the website of ekey biometric systems GmbH at:

www.ekey.net

There you can always find the most up to date version of this document, as well as other additional information about this and other products by ekey biometric systems.

Should you still have technical questions, please contact your ekey dealer!

In order to have the most important information at hand in case of complaints, we request that you enter the serial number below:

The serial number has 14 digits and can either be found on the label below the barcode or can be accessed via the menu on the control panel.

ekey home finger scanner

ekey home control panel

4. Note on the operating instructions

4.1 Warning signs and symbols

CAUTION! This symbol indicates a special notice, which you must pay attention to in the described feature.

INFORMATION! This symbol indicates that you can find useful information and tips about the product in the adjoining text.

STOP! This symbol indicates that you may under no circumstances carry out a given action. In the majority of cases, in order to carry out the given feature, you need first to make some specific settings.

Warning about dangerous electric voltage: This warning notice indicates that you are exposed to electric voltage hazard

Warning about battery hazard

4.2 Depiction conventions

Depiction	Signification
	Listing
1. 2.	Follow the steps in this order
italic <u>underlined</u>	Product name

4.3 Validity

These operating instructions are not subject to updating. You can find the most up-to-date version of these instructions at **www.ekey.net**. Subject to optical and technical modifications, any liability for misprints excluded.

5. Product overview - the ekey home system
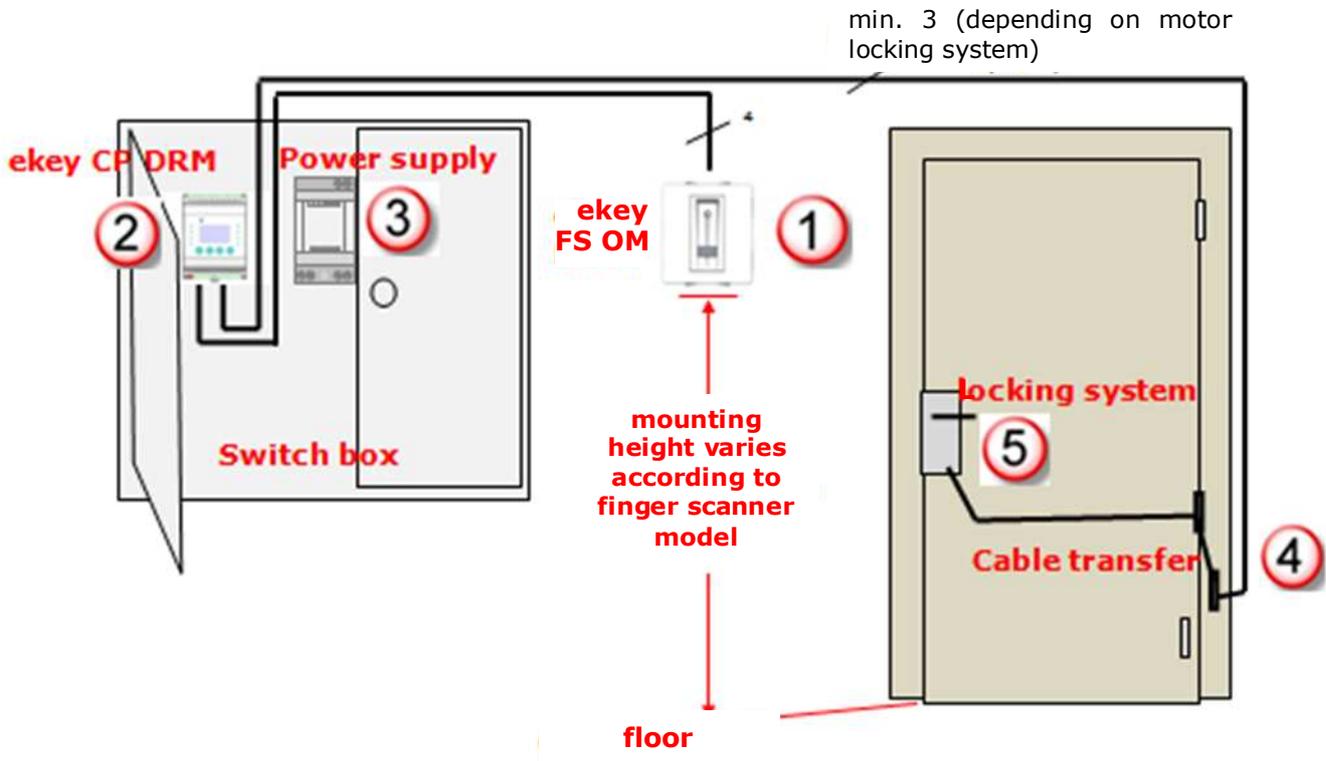
For a complete operational **ekey home** system you will need the following components:

⚠ Not all parts are supplied by ekey!

		Supplied by ekey	Models	Description on page
①	**ekey home finger scanner**	Yes		7
②	**ekey home control panel**	Yes		8
③	**Power supply**	Yes		
⑤	**Motor lock / Electric strike / Locking system**	No		

optional

④	**Cable transfer**	Yes		

ekey home is a biometric access system which is equipped with a finger scanner. This scanner reads special features of your finger lines and uses them to recognise people with access rights. Each one of your fingers has specific recognition features and also varies from the fingers of other people. ekey home is available in different functional and mechanical versions and can therefore be optimally adapted to your needs.

ekey home finger scanner versions

ekey home FS WM 2.0	wall-mounted ①	
ekey home FS IN 2.0	integrable (door) ②	
ekey home FS OM	outlet-mounted ③	

ekey control panel versions
The ekey home control panels are intended to directly control an electric motor lock. This is usually relay 1 for a door wiring.

ekey home CP WM 1	wall-mounted	1 relay ④
ekey home CP WM 3	wall-mounted	3 relays ④
ekey home CP IN 1	integrable	1 relay ③
ekey home CP IN 2	integrable	2 relays ③
ekey home CP DRM 1	Electric control cabinet (switching cabinet on top hat rail)	1 relay ⑤
ekey home CP DRM 2	Electric control cabinet (switching cabinet on top hat rail)	1 relay ⑤

Essentially any finger scanner may be combined to any control panel. Based on the scope of delivery, check precisely which units you have when you start up the systems.

6. General Safety Information

6.1 INTENDED USE

The ekey home system consisting of

- ekey home finger scanner
- ekey home control panel
- ekey power supply

is a biometric access control system available in different hardware shapes and 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 defined 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 and corporate environment. It has to be installed in a fixed position, and in accordance to the accompanying installation manual and wiring diagrams.

Electrical Safety
All ekey home devices are to be operated by safety extra-low voltage and powered by adapters from protection class 2 according to VDE 0140-1.
Such power adapters are typically marked with below shown symbol according to IEC 60417:
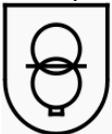
Your ekey home system is powered by electricity. Despite the exclusive operating clearance of protection class 2 power adapters, all devices need to be handled with particular caution during installation and wiring. For this reason, all services have to be carried out by qualified personnel (e.g. electrician, installer, etc.).

Please read carefully the provisions below before starting to wire the system:

⚠️ *The connections of the devices are NOT protected against reverse polarity! Incorrect wiring of the devices can result in them being damaged beyond repair!*

⚠️ *Only trained and qualified electricians should carry out electrical wiring of the units and connection to the mains grid!*

⚠️ *Lay the connecting cable between the ekey home CP (control panel) and the ekey home FS (finger scanner) separately from any 230 V or 380 V mains voltage cables in the house. The connecting cable carries low voltage signals that can be interfered with by current-carrying mains voltage cables in the vicinity.*

6.2 SECURITY AGAINST MANIPULATION

Your ekey home system consists of 2 electronic devices
- the ekey home finger scanner
- the ekey home control panel

The ekey home finger scanner is typically mounted in an outdoor environment and therefore accessible to everyone. In order to avoid external tampering, which could theoretically result in an unauthorized access, your system is equipped with below listed security features:

- The ekey home control panel has to be mounted in a secure area. The switching actuator (relay output) to operate a motor locking system is positioned on the control panel.
- System changes (fingerprint enrollment, etc.) can only be made via the ekey home control panel situated in a secure area.
- The access to the menu in the ekey home control panel is secured with a security code. This is an additional obstacle within the system for unauthorized users.
- The finger scanner is connected to the control panel by a data line. The communication between both components is encrypted.
- The finger scanner and the control panel are "married", i.e. they have been coupled during the initial start-up. When replacing a device, a new coupling must be done via a specific key combination on the control panel mounted in the secure area). Otherwise no access will be granted.

Operation and data monitoring

Your ekey home finger scanner features software routines which run sanity checks of the system operation data. If the system identifies inconsistencies, then the finger scanner will be recalibrated automatically. This calibration procedure takes 3 to 5 seconds and can be followed via the LED signals sequence (see section 7.3). These inconsistencies can be caused by:
- abnormal electrostatic discharges (ESD),
- abnormal electromagnetic interference fields.

It is not possible to operate the finger scanner during the calibration process. The device resumes its normal operation after the calibration process is over.

6.3 RISKS ASSOCIATED WITH INTENDED USE

The sensor surface of the thermal line sensor, which is primarily used for the
- ekey home FS WM
- ekey home FS IN

can become very hot (>50°C) when exposed to direct sunlight. In order to avoid burns and scalds of the fingertips, it is recommended to test the temperature by shortly touching the sensor. If needed, place your hand over the scanner making a cooling shade.

Apart from that, there are no other known risks in normal use of the system.

6.4 REQUIREMENTS FOR THE USER

It is essential for the installer to study the supplied manuals (Mounting instructions, Wiring, and Operating instructions) before installing the devices. The installer (system commissioner) is required to possess professional certificated training in the area of electrotechnical engineering.

The user has to use the system in accordance with these instructions. Otherwise, no special knowledge is necessary to operate the system.

6.5 NOTE ON PRODUCT LIABILITY

In below listed cases, the security provided respectively the protection of the device may be impaired.
The liability for the operability of the equipment 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
- …

7. ekey home finger scanners

7.1 MODELS AND VERSIONS

ekey home FS WM   *ekey home FS IN*   *ekey home FS OM*

There are 3 different ekey home finger scanner models.
- ekey home FS WM 2.0 – wall-mounted
- ekey home FS IN 2.0 – integrable into doors and intercoms
- ekey home FS OM – outlet-mounted

The individual finger scanners essentially differ in their method of installation. The method of operation, however, is identical for all models.

7.2 OPERATING THE FINGER SCANNERS

7.2.1 FUNCTION OF THE FINGER SCANNER

ekey finger scanners are exclusively equipped with line (swipe) sensors. To capture a fingerprint, please draw your finger over the sensor. The system records the image of the fingerprint lines (papillary lines) line by line and compiles an image from the individual rows. The finger scanner then calculates a recognition template (minutia and their relative positions), which is compared to the previously stored finger templates (reference finger templates). If a certain degree of congruence is exceeded (threshold), a positive match (= finger was recognized) will trigger an allocated action (e.g. switch relay output 1). It is important to note that no fingerprint images are stored.

Which part of the finger should be recorded by the finger scanner?
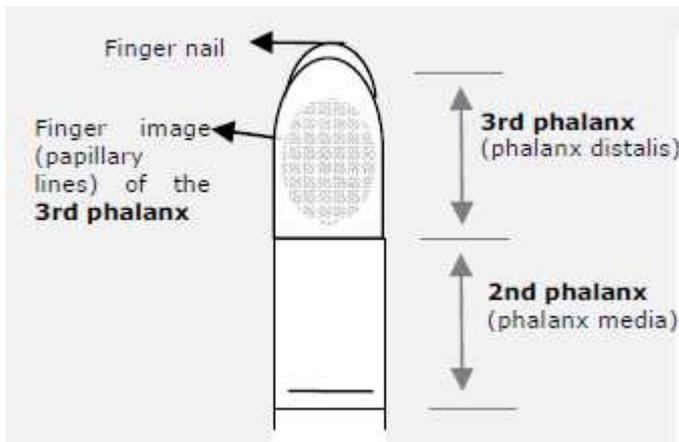
It is necessary to capture an image of the **3rd** phalanx. On the contrary, your finger scanner will not function properly.

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.

The finger recess – the control element
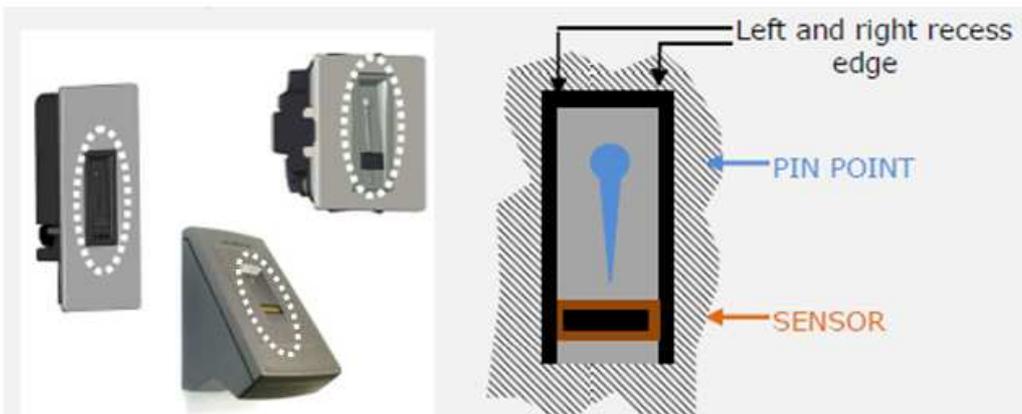
The finger recess allows to place the finger correctly so that a finger picture of good quality can be captured. It actually is the control element and consists of

- **Pin point**   **- Sensor**   **- right and left recess edges**

7.2.2 OPERATING CORRECTLY THE FINGER SCANNER
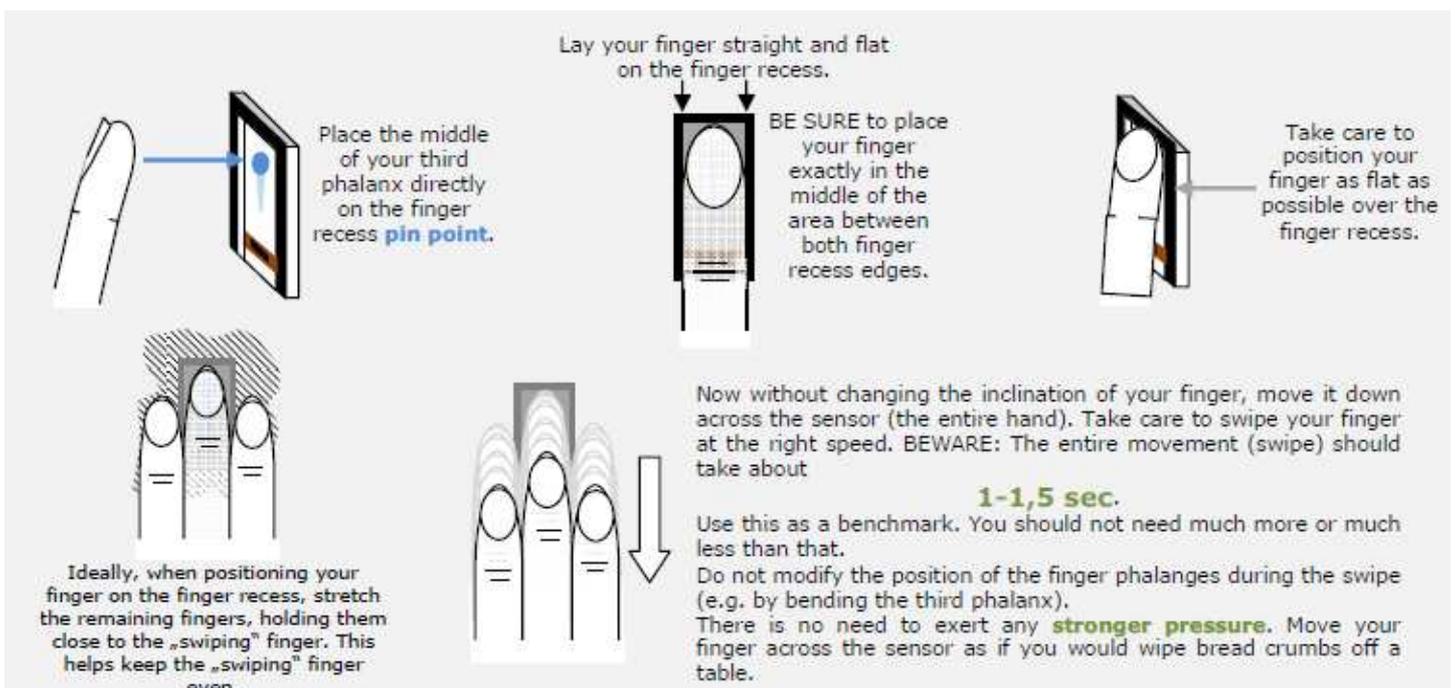
> ℹ️ **Best results are achieved by using the middle finger and stretching out the index and ring finger at the same time..** *(see the figure above).*

The correct operation of the fingerprint scanner is your guarantee of the successful functioning of this product. Below written recommendations apply for all hardware types:

- Please use the finger which has the best finger lines in your opinion. In particular with weakly-pronounced finger lines you should avoid pressing down too hard on the sensor so that you do not squash the finger lines which are flat anyway.
- **The small fingers and thumbs should NOT be used!**
- The finger scanner is equipped with a fully automatic learning system, which recognizes changes in user habits and growing children´s fingers. To optimize the fingerprint recognition, it is best to swipe each finger at least 5 times over the sensor, every time you have enrolled a new finger, or if you have not used the system for a long time. If any of your finger scans is rejected, then please repeat this process. Sollte Ihr Scan abgewiesen werden, so wiederholen Sie bitte diesen Vorgang.

If none of your fingerprint scans are accepted in spite of this, please try the following:
- Vary the pressure (stronger or lighter) when swiping your finger.
- Take care to place your finger correctly in the finger recess
- Small finger and thumb are not ideal for ergonomic reasons. The thumb is particularly very difficult to use.
- Try scanning the fingerprint at different speeds in order to find out the best speed for you.
- Save the same fingerprint in several locations, if the above points do not help. You have 99 memory spaces available. In extreme circumstances you should use up to 10 memory spaces for one finger.
- Wet fingers show different contours. If you often have wet fingers, then save your fingerprint in wet condition.
- Children´s fingerprints are usually recognized, depending on the body height of the child, generally from the age of 5 – please also observe the above points.

7.2.3 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 >>

spee <<

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, because the finger scanner gets less information.

7.3 OPTICAL SIGNALS ON THE EKEY HOME FINGER SCANNER

Your _ekey home finger scanner_ is equipped with LEDs that deliver information on the operational state and individual functions of your system. The optical signaling of the individual finger scanners will differ though. The two tables below will show you the corresponding signals and their meanings.

The LEDs are named based on their purpose as

- **Status LED** – for details on the operational state (finger recognized, finger rejected, etc.)
- **Function LED**– for details on the function of the system (online, offline, etc.)

Function LED
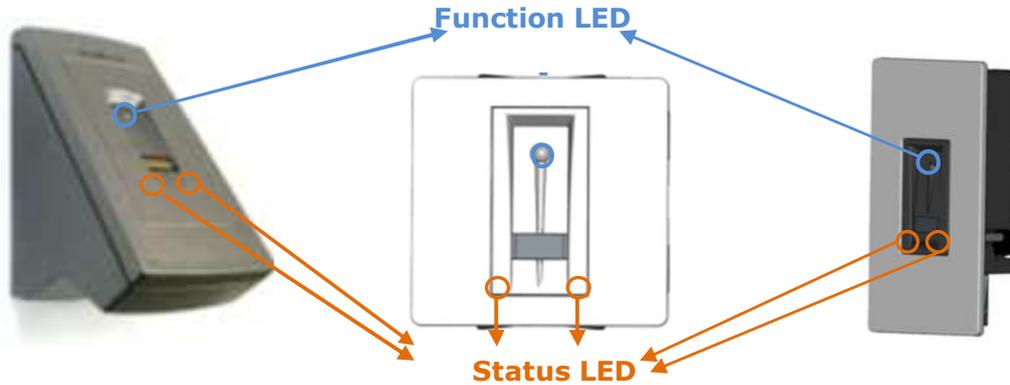
Status LED

LED signals on _ekey home FS OM_, _ekey home FS IN 2.0_ and _ekey home FS WM 2.0_

ekey home_FS OM ekey home FS IN 2.0 ekey home FS WM 2.0	Function LED	Status LED	Description
Normal mode			
	ORANGE flashing slow	Left: OFF Right: OFF	There is no bus connection to the _ekey home control panel_. Please check the connection cables or apply „Initializing the devices" as described in section 8.2.1.4 or 8.2.2.3.
	BLUE	Left: OFF Right: OFF	The system is online – all components are communicating correctly.
	ORANGE flashing quick	Left: OFF Right: OFF	Once you have drawn your finger over the sensor, the system will start the processing (enrollment) and matching. The LED flashes orange during the entire process.
	GREEN	Left: OFF Right: OFF	Fingerprint recognition: positive, the relay switches.
	RED	Left: OFF Right: OFF	Fingerprint recognition: negative or poor image, which does not allow any fingerprint check.
	ORANGE	Left: OFF Right:OFF	Fingerprint enrollment mode. When enrolling a finger via the menu on the control panel, this LED state indicates the system to be ready for swiping a finger over the sensor. The system generates a reference template from this fingerprint image.

	RED GREEN flashing	Left: OFF Right: OFF	The sensor is dirty, smudgy or wet. Clean the sensor!
During the boot procedure (power up)			
	GREEN BLUE flash BLUE	Left: off – BLUE flash - off Right: off – RED flash - off	The module is booting (powering up). It takes about 1-2s counting from the moment when power supply is available.
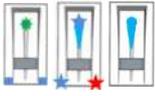
7.4 ELECTRIC CONNECTION

You can find further details such as the
- pin assignment
- wiring examples

either on the accompanying ekey home wiring diagram, or on the DVD as a .pdf file.

7.5 MOUNTING

You can find further information either on the accompanying ekey mounting instructions, or on the DVD as a .pdf file.

8. ekey home control panels

8.1 MODELS AND VERSIONS

There are 3 different ekey home control panel models.
- ekey home CP IN – integrable into doors
- ekey home CP WM – wall-mounted
- ekey home CP DRM – 4HP DIN—rail mounted device

The individual control panels essentially differ in their method of installation. The method of operation, however, is identical for the ekey home CP IN and the ekey home CP WM. The ekey home CP DRM is the more recent model featuring an LCD display. In addition, the state of the relay outputs is indicated via LEDs.

The ekey home control panels are the actuator units within the ekey home system. The finger scanner transmits to the control panel which relay output has to be activated. This action is then executed on the respective control panel. In addition, the system configuration is another important task of the ekey home control panel. The respective settings (e.g. fingerprint enrollment, relay switching time, etc.) are defined via the push buttons and the display.

*The ekey home CP should **always** be mounted in a secured area (indoors). If you mount the control panel outdoors, where anybody can have access to it, then unauthorized people could easily unlock the door!*

8.2 OPERATION

8.2.1 EKEY HOME CP IN AND EKEY HOME CP WM

8.2.1.1 OPERATING THE BUTTONS
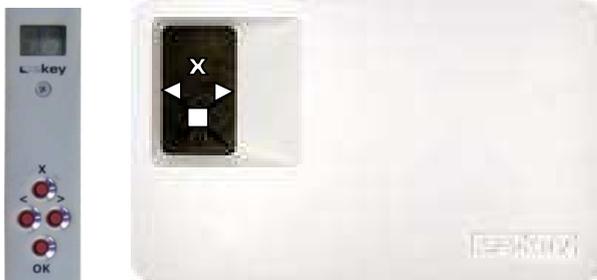
Four buttons are used for the operation:

■ **= OK** button: is used to enter the menu and to confirm entries.

< and **>** buttons: are used to change the values on the display or for navigating in the programming
◄   ►   menu (see diagram in section 8.2.1.5)

ESC button (**X**):   is used to cancel the current entry.

8.2.1.2 MAIN MENU

Menu item	Display	
Normal mode	(flashing dot)	.
Enrol user	(**E**nroll **u**ser)	Eu
Delete user	(**d**elete **u**ser)	du
Set the security code	(**S**ecurity **c**ode)	Sc
Serial and version number	(**In**formation)	In
Reset to factory settings		rr
Change relay switching times	(**R**elay **t**ime)	rt

8.2.1.3 OPTICAL SIGNALS

Displays from the menu navigation are not described here.

Display	Information	Description
	Both dots are lit up	The terminal is new or has been reset to factory settings. The link with the fingerprint scanner is not active.
	Left dot flashing	Normal mode, everything is functioning properly.
	"**Nu**" - Need Update	This terminal requires a firmware update. This display also appears during updating.
	„**E0**"- Error code	There is no connection to the finger scanner, or the energy supply to the system has been interrupted. The system will be rebooted.
	„**E1**"-Error code	99 fingerprints have already been registered. No more fingerprints can be registered. Where necessary delete existing fingerprints in order to record new ones.

E2.	„**E2**"-Error code	30min lock after the security code has been entered incorrectly three times. Wait 30 minutes before entering the security code again.
E3.	„**E3**"-Error code	Devices connected incorrectly. Connect the devices again, as one of the devices has been manipulated.
B.1. to **99.**	Displays a number between "**1**" and "**99**" and the dot on the right is lit up.	Shows the user number of the recognized fingerprint.
44. to **B.0**	Control panel counts down from „**44**" to „**0**"	State when connected to live current, with no connection having been created to the finger scanner. If the control panel does not switch to normal mode after a few seconds, but continues to count down, the physical connection (cable) with the finger scanner is not intact and has to be checked / corrected.

8.2.1.4   INITIALIZING THE DEVICES

CAUTION! The electrical connection of the system can only be carried out by a specialist!!!
Before you connect the systems to the mains, make sure that both the mounting and the wiring have been done correctly.

You may only manipulate the electric connections after having separated the system from the mains!

You will find mounting and wiring instructions in sections 7.4 and 7.5.

CONNECTION BETWEEN CONTROL PANEL AND FINGER SCANNER
When the devices are connected to the power supply, the control panel display starts to count down until a connection has been created with the finger scanner. Afterwards two red dots appear. During this time the status display on the finger scanner lights up red. Once the boot procedure has been completed, the status display begins to flash orange. Now the initialization can be started.

If the counter does not stop on the control panel and you are not taken to the language settings, please double check the RS485 bus connection (clamp 1 and 2). Alternatively, please check whether the finger scanner is properly powered (LED blinking or illuminated).
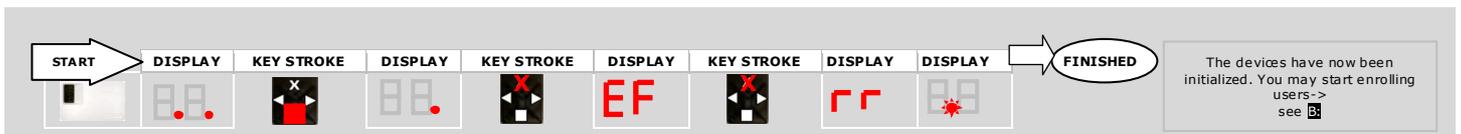
1.) Press the **OK** button
2.) Press the **ESC** button. "EF" appears on the display, which stands for "Enroll Finger".
3.) A) *Initialization after having replaced the control panel*
    If it was necessary to replace the control panel because it was defective, then fingers had already been recorded in the ekey home finger scanner. In order not to have them deleted, a pre-recorded finger may now be swiped over the sensor, and the initialization process is started without deleting any data.
   B) *New installation*
    If this is a new system (new installation), press the **ESC** button once again.
    The system now initializes. All the fingers recorded previously on the finger scanner will be deleted.
4.) The initialization process runs completely automatically, in the course of which the devices are connected with each other. This connection is meant to prevent unauthorized people gaining access in case of an improper finger scanner replacement.

8.2.1.5 OVERVIEW OF THE PROGRAMMING MENU OF THE CONTROL PANEL

You can access lower menu levels by pressing the **OK** button. You can move back up by pressing the **ESC** button. You can navigate by pressing the left **<** and right **>** buttons. You can choose a particular option by pressing **OK**.

Keypad on

ekey home CP WM

and

ekey home CP IN

> **OK** = ■ : to enter the menu and to confirm entries
>
> **><** or ◀▶ : to navigate in the menu or to select values during setup and finger enrollment
>
> **X = ESC**: to cancel the current entry

. Flashing dot
Normal mode

. 0..99
Enter safety code

| **Eu** Enroll user | **du** delete user | **Sc** Set Security code | **In** Information | **rr** Factory settings | **rt** Set relay impulse |

1..99
Select user #

1..99
Select user #
See section 8.2.1.8

0..99
Enter security code
See section 8.2.1.9

0..99
Enter security code
See section 8.2.1.12

o1...o3
Select relay

F1..F9,F10
Select finger #

0..99
Define relay switching time
See section 8.2.1.11

o1...o3; od
Select relay
See section 8.2.1.7

Sn
Serial #

US
Version

Cu Control panel

FS Finger scanner
See section 8.2.1.10

Cu Control panel

FS Finger scanner

8.2.1.6   ENTERING THE SECURITY CODE

The security code allows you to avoid system manipulations by unauthorized people. Since the control panel is to be mounted in a secure area, an unauthorized person will have to get access to this secured area first. This security code can then be described as an additional hurdle.

⚠️ After **3** incorrect attempts, the device is blocked for **30 minutes** and the control panel display shows error code E2. If the control panel is disconnected from the mains, the counter resets itself once is has been re-connected to the mains.

The factory default setting for this code is „**99**". Change this code as soon as you have started up the system to any 2-digit code of your choice.

START	DISPLAY	KEY STROKE	DISPLAY + SETTING	KEY STROKE	DISPLAY+ SETTING	KEY STROKE	DISPLAY	FINISHED
	8.8		9.		99.		Eu	
			Set security code DIGIT 1		Set security code DIGIT 2			
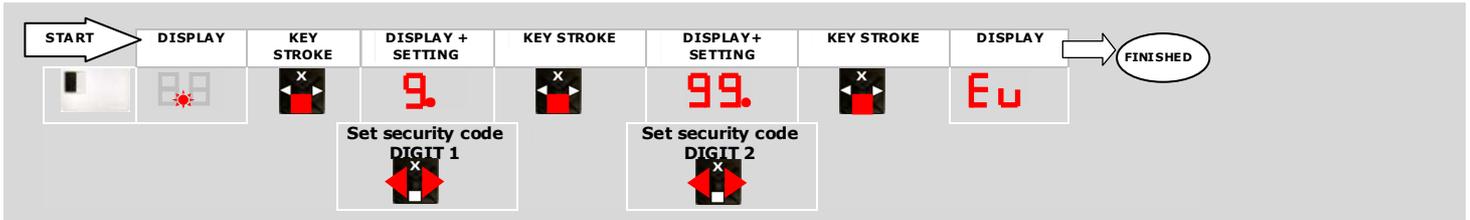
1.) Press the **OK** button on the control panel.
2.) Enter the left digit of the security code using the **< a**nd **>** buttons (factory setting is 9)
3.) Press the **OK** button.
4.) Enter the right digit of the security code using the **< a**nd **>** buttons (factory setting is 9)
5.) Press the **OK** button.

The display shows „**Eu**" (Enroll user).

8.2.1.7   ENROLLING A FINGERPRINT IN THE SYSTEM

In ekey home a maximum of 99 fingerprints can be enrolled. These 99 fingerprints can be assigned to 99 user IDs. You can for example
- administrate 11 users, each one enrolling 9 fingerprints or
- administrate 99 users, each one enrolling only 1 fingerprint or
- opt for any other mixed setup.

Generally speaking, we recommend to:
- save at least 2 fingerprints per user (ideally from different hands)
- use index and middle fingers. From an ergonomic point of view, they are best suited for proper operation resulting in the highest level of recognition.
- avoid using thumbs and little fingers.
- create a user list assigning the user ID to a user name. You can find a template in the accompanying DVD.
- stick to the suggested numbering of the respective fingerprints (see below).

🛑 **Before adding a fingerprint into the system, please read through section 7.2 "Operating the finger scanners", or watch the movie on proper use on the accompanying DVD. Using the finger scanner properly is essential for a stable operation, and this in turn starts during the fingerprint enrollment. Properly recorded fingerprints will simply work better!**
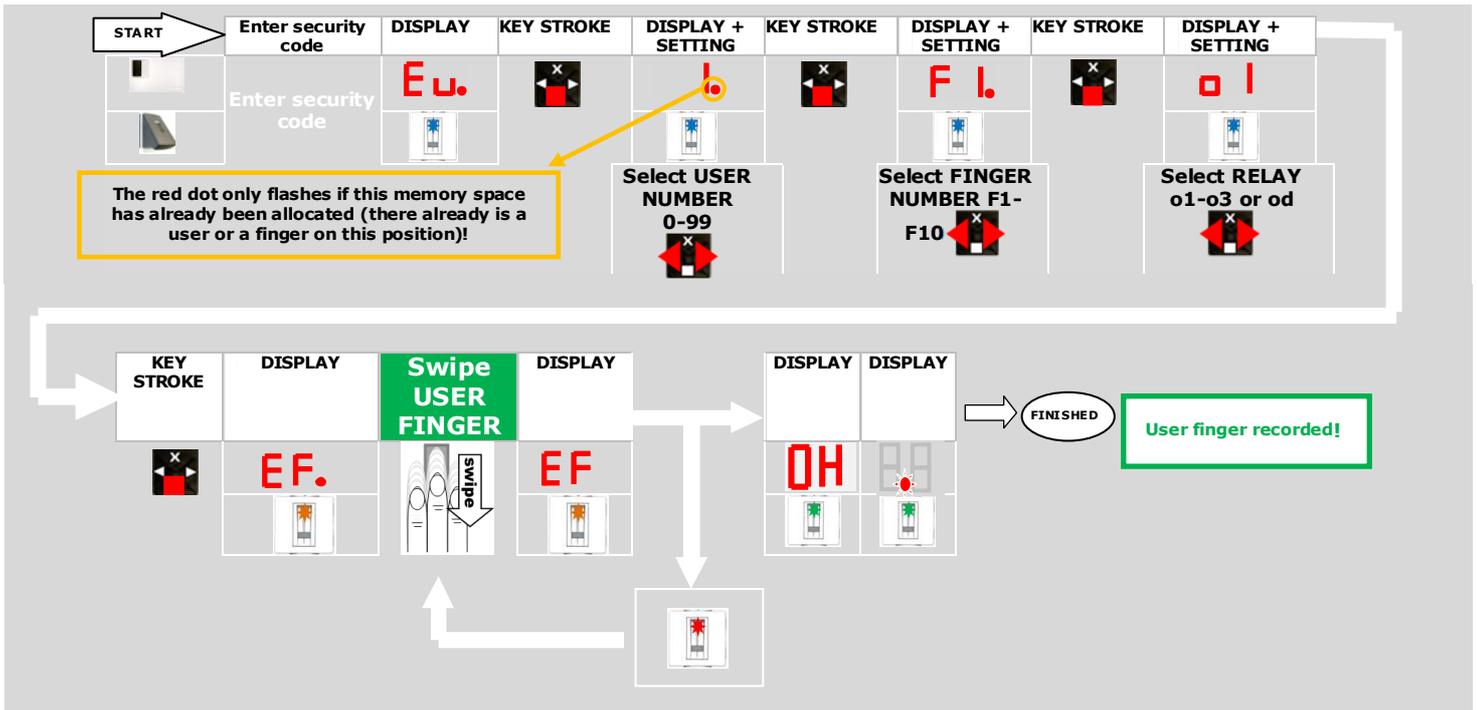
1.) First, enter the security code as per section 8.2.1.6:
2.) When the display shows "Eu", press the **OK** button.
3.) Select the user: The display shows the number "1". If this user number is already in use, this is signalized by a lighted dot next to the number. For example: „**1.**". Set the desired user number using the < and > button.
4.) Press the **OK** button.
5.) Select the finger: On the display "**F1**" stands for finger 1 = small finger on the left hand. Please begin counting with the little finger on the left hand.
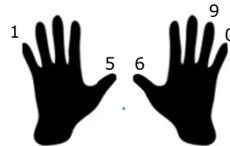
The little finger on the right hand is number 10 (= setting "F0" on the display). If a finger number has already been allocated, then this is also signalized with a dot next to the number. For example set the index finger on the right hand as "F7". If the finger has already been recorded, then you will see a flashing dot beside the finger number, e.g. „F1**.**". You may still record the finger however if you wish to do so. The preceding finger will then be automatically overwritten.

6.) Press the **OK** button.
7.) ⚠️ Consider step 7 only if you have an ekey home control panel with more than 1 relay:
    - ekey home CP IN 2
    - ekey home CP WM 3

You can now determine which relay is meant to be controlled by the previously selected fingerprint. "o1" on the display signalizes that at the moment the first relay (the motor lock) is selected (standard setting).

    - **"o1"** …   Relay 1
    - **"o2"**…   Relay 2
    - **"o3"**…   Relay 3
    - **"od"**…   **Double relay function**: Relay **1** and relay **2** switch simultaneously with one finger swipe only. Both relays switch according to the set relay switching times (e.g. relay 1 3 seconds and relay 2 6 seconds).

Use the **<** and **>** buttons to select the relay to be controlled.
8.) Press the **OK** button.

Once „**EF**" appears on the display, you have 60 seconds time to swipe your finger, starting at the top knuckle downwards, over the sensor. The finger scanner status LED lights up **orange** = operation mode Enrollment. The device is waiting for a finger to enroll.
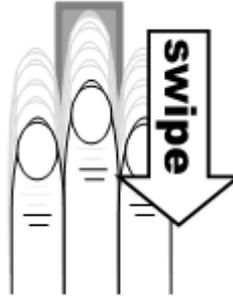
The fingerprint should be recorded in the manner described in section 7.2. The finger scanner possesses a (LED) status display, which signalizes using two different colors, after you have swiped your finger over the sensor, if the enrollment was successful or not:

Red: The finger could **not** be scanned successfully,
Please repeat the enrollment process. Read section xxx before doing so.
Watch the movie on the DVD.

Green: The finger has been succesfully recorded (scanned). The enrollment was successful Enter the user name on the user list, which you maybe have on paper, at the corresponding place.

8.2.1.8   DELETING A USER

The "DELETE USER" (du) function always relates to all of the user´s data. It is NOT possible to delete individual fingers. If a user is deleted, all his recorded fingers will be irrecoverably deleted.

D: DELETE USER (du)								
START	ENTER SECURITY CODE	DISPLAY + SETTING	KEY STROKE	DISPLAY + SETTING	KEY STROKE	DISPLAY	DISPLAY	FINISHED
	SEE B:	du		I.		OH		The selected user has been deleted!
		Select MENU ITEM du		Select USER NUMBER				
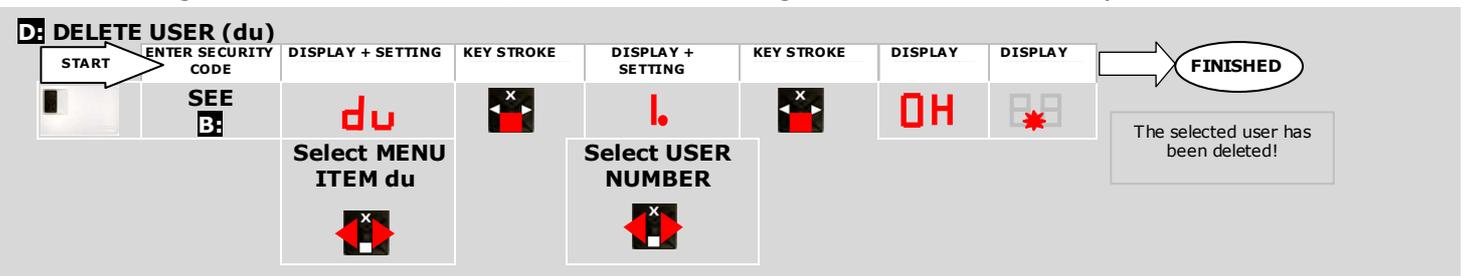
1.) Look up in the handwritten user list the user number which you wish to delete.
2.) First enter the security code as per 8.2.1.6
3.) Press the **>** button several times until "du" (delete user) is displayed.
4.) Press the **OK** button.
5.) Use the **<** and **>** buttons to select the desired user number to be deleted from the system.
6.) Press the **OK** button.
7.) **"OK"** is then shown on the display for a short time. The device then returns to normal mode.

8.2.1.9   SETTING A NEW SECURITY CODE

Please be aware that the device cannot be operated further without setting a new security code. If you enter a new security code, then you will always need this code in the future in order to make changes (finger enrollment, delete user, etc.) in your ekey home system.

F: CHANGING THE SECURITY CODE (Sc)										
START	ENTER SECURITY CODE	DISPLAY + SETTING	KEY STROKE	DISPLAY + SETTING	KEY STROKE	DISPLAY + SETTING	KEY STROKE	DISPLAY	DISPLAY	FINISHED
	SEE B:	Sc		0.		90.		OH		
		Select MENU ITEM Sc		NEW CODE DIGIT 1		NEW CODE DIGIT 2				
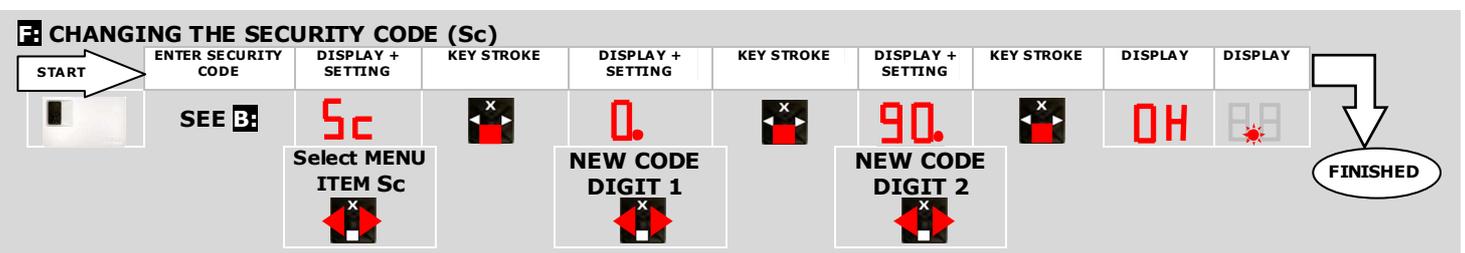
2.) Press the **>** button until **"Sc"** is displayed
3.) Press the **OK** button
4.) Enter the left digit of the new security code using the **<** and **>** buttons
5.) Press the **OK** button
6.) Enter the right digit of the new security code using the **<** and **>** buttons
7.) Press the **OK** button
8.) **"OK"** is displayed for a short time. The device then returns to normal mode
9.) Memorize your security code, or write it down and keep it in a safe place, separately from the ekey home control panel.

8.2.1.10 ACCESSING SERIAL NUMBER AND VERSION NUMBER

The serial number and the version number of the components of your ekey home system,
- ekey home CP and
- ekey home FS

can also be accessed via the 7-segment display. Two digits of the number are displayed at a time. This is especially important for integra models, as their parts are built-in and the labels are usually hardly or no longer visible.

The serial number corresponds to the serial number of the device and therefore allows you to determine the date of production and the hardware model. The version number corresponds to the update version of the software. You will only need both these numbers if you are in contact with our technical support team in order to solve a problem you are facing.

8.1.1.10.1 ACCESSING THE SERIAL NUMBER

1.) First enter the security code as per section 8.2.1.6
2.) Press the **>** button, until **"In"** is displayed
3.) Press the **OK** button
4.) Use the **<** and **>** buttons to select the option „Sn" for serial number
5.) Press the **OK** button
6.) Use the **<** and **>** buttons, to select which device you wish to view the serial number of:

- "FS"…. Finger Scanner
- "CU"…. Control Panel

7.) Press the **OK** button
8.) Now you will be able to see the first two digits of the serial number. By pressing the **>** button you can view the remaining digits. The serial number is 14 digits long.
9.) By pressing the **OK** button you return to the first two digits of the serial number. If you press the **ESC** button once you have reached the last two digits the display moves up a level in the navigation.

8.1.1.10.2 ACCESSING THE VERSION NUMBER

1.) First enter the security code as per section 8.2.1.6
2.) Press the **>** button, until **"In"** is displayed
3.) Press the **OK** button
4.) Use the **<** and **>** buttons to select the option „US" for version number
5.) Press the **OK** button
6.) Use the **<** and **>** buttons, to select which device you wish to view the version number of:

- "FS"…. Finger Scanner
- "CP"…. Control Panel

7.) Press the **OK** button
8.) Now you will be able to see the first two digits of the version number. By pressing the **>** button you can view the remaining digits. The serial number is 8 digits long.
- By pressing the **OK** button you return to the first two digits of the version number.
- If you press the **ESC** button once you have reached the last two digits the display moves up a level in the navigation.

8.2.1.11 CHANGING THE RELAY SWITCHING TIMES

The switching impulse times of the individual relays can be variably adjusted from **1**s to **99**s. This enables you to adjust the duration of the opening impulse of the door according to your application.
All the relays on your ekey home control panel are preset at **3**s impulse duration.

Special feature relay time 0
If the value 0 is assigned to a relay in this menu, then a special function is active. In this case the relay is bi-stable. This means that when a finger is recognized, the relay changes to its switched state and remains there until another finger is recognized. That relay thereby works as a switch and does not emit an impulse.

If there is a power cut or a RESET on the ekey home FS or the ekey home CP due to a trouble signal in this operating mode (relay permanently closed), then the relay always restarts in idle state once the power supply has been reconnected (or after the reset). Contact NO = open!!

If you operate for instance an alarm system via relay permanent status (relay time = 0), then a power cut could deactivate the alarm system! You can also provoke a reset by swiping 10 times in a row an unknown finger over the finger scanner! Therefore keep in mind that this feature has limitations!!
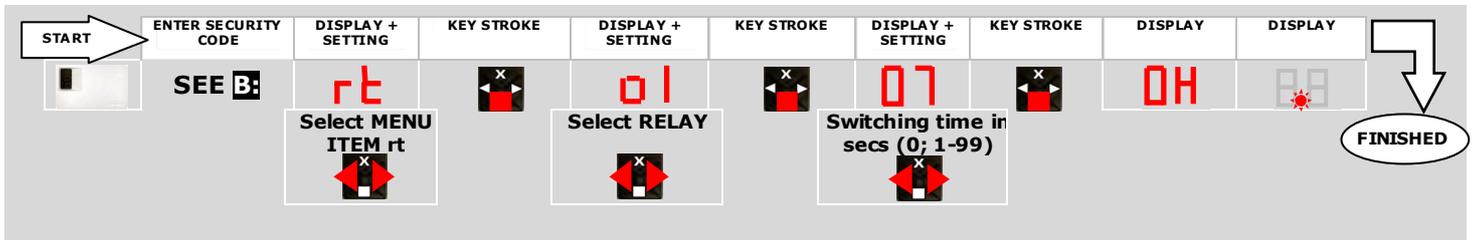
1.) First enter the security code as per section 8.2.1.6
2.) Press the **>** button until "rt" is displayed
3.) Press the **OK** button
4.) ⚠Only proceed with step 4 if you have an ekey home control panel with more than 1 relay:
- ekey home CP IN 2
- ekey home CP WM 3

Use the **<** and **>** buttons to select **"o1", "o2", "o3"** for the desired relay (NOT on ekey home CP WM 1 and ekey home CP IN 1, as they only have one relay available!)
5.) Press the **OK** button
6.) Use the **<** and **>** buttons to set the desired duration of the switching impulse
0 = special feature „Switch"
1 = 1 sec
2 = 2 secs
.
.
99 = 99 secs
7.) Press the **OK** button
8.) **"OK"** will appear on the display for a short time. The device then returns to normal mode.

The duration of the impulse or the switching feature has therefore been set for the selected relay. Repeat this procedure for each relay, the impulse duration of which you wish to change.

8.2.1.12 RESETTING TO FACTORY SETTINGS

STOP **If you carry out this procedure, then all the saved data will be irrecoverably deleted!**

If you reset the device to its factory settings, all the user data (user fingers) in the memory are deleted. The security code is reset to the standard value of 99, the control panel and the finger scanner are disconnected, and the relay switching times are set for all the relays at 3s.

START	ENTER SECURITY CODE	DISPLAY + SETTING	KEY STROKE	DISPLAY + SETTING	KEY STROKE	DISPLAY + SETTING	KEY STROKE	DISPLAY	DISPLAY
■	SEE B:	**rr** Select MENU ITEM rr	x	**9.** Security code DIGIT 1	x	**99.** Security code DIGIT 2	x	**rr** Your device has now been reset to its factory settings!	**8.8.** FINISHED
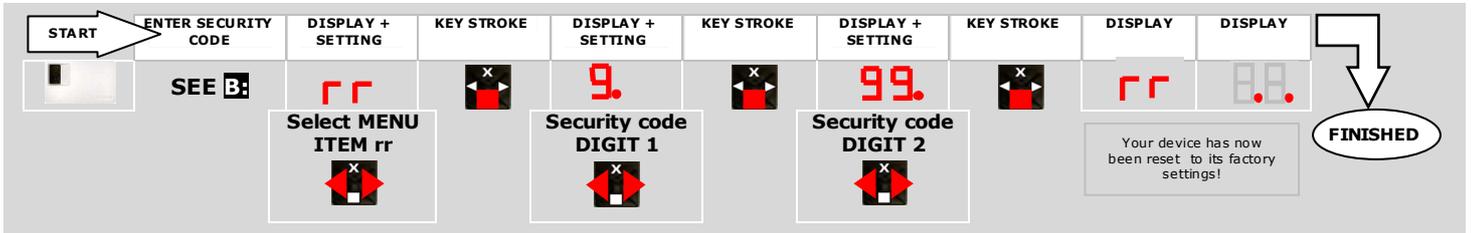
1.) First enter the security code as per section 8.2.1.6.
2.) Press the **>** button until "rr" is displayed
3.) Press the **OK** button
4.) Enter the left digit of the security code using the **<** and **>** buttons
5.) Press the **OK** button
6.) Enter the right digit of the security code using the **<** and **>** buttons
7.) Press the **OK** button
8.) After a couple of seconds, "rr" is displayed and then two red dots appear on the display. The LED on the finger scanner flashes orange. The device is now reset to its factory settings (= as when it was delivered).

To start operating the device again, proceed from section 8.2.1.4. You must re-initialize the devices.

8.2.2 EKEY HOME CP DRM 1 (2)

8.2.2.1 CONTROLS

The *ekey home CP DRM* has 4 buttons and an LCD display for system operation and programming. It also features a sliding switch to switch on and off the bus termination, as well as 1 respectively 2 LEDs for relay status and digital input signaling.
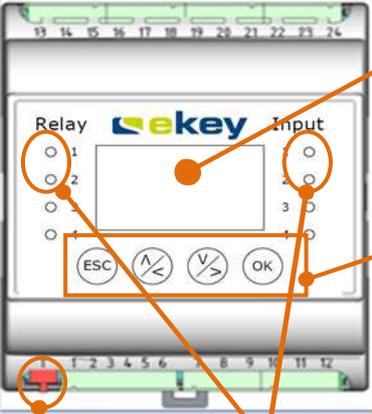
LCD display on *ekey home CP DRM*	
	Displays information related to the programming procedure on the *ekey home CP DRM*.
Button functions and assignment; symbols for keystrokes	
OK	Allows you to enter the menu and to confirm your entries
∧/< ∨/>	Allows you to change the values displayed and to navigate in the *ekey home CP DRM* menu
ESC	Allows you to cancel the current entry

Sliding switch for bus termination

Status LEDs for relays and digital inputs

⚠️ *The ekey home CP DRM is optimized for its electric consumption. For this reason, the LCD display is deactivated automatically after approx. 2 minutes. This way, the energy consumption is reduced significantly. To make any system changes, please press any key to reactivate the display.*

Signaling of the relay and input state
The *ekey home CP DRM* features one respectively two status LEDs monitoring
- the relay switching status. This LED is implemented in green color. The LED is illuminated when the relay output is switched actively, i.e. contact NO = closed
- the status of the digital input. This LED is implemented in red color and illuminated when the electric resistance between the input pins is smaller 1kΩ ist (= external push button is closed). The LED is for sure not illuminated if the resistance is >50kΩ (push button open).

Green LED for RELAY status ◄———— ————► Red LED for INPUT status
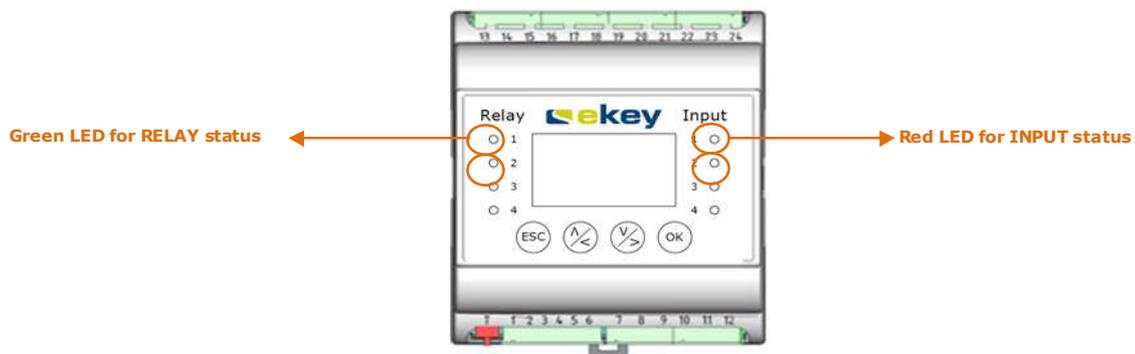
8.2.2.2   MAIN MENU

The main menu items and thus the most important programming steps are

Enroll user	– add new user and enroll the corresponding fingerprints
Delete user	– delete all data of a certain user
Logging	**-** displays the last 50 accesses
Security code	– change the security code to enter the menu
Change relay	
Switching time	– change the switching time of the relay output
Reset	– reset to factory settings
Test mode	– test mode for simplified commissioning
LED intensity	**-** sets the intensity of the status LED on the finger scanner

8.2.2.3   INITIAL OPERATION

Before you connect the system to the mains, make sure that both the mounting and the wiring have been done correctly.

You may only manipulate the electric connections after having separated the system from the mains!
CAUTION! The electrical connection of the system can only be carried out by a specialist!!!

CONNECTION BETWEEN CONTROL PANEL AND FINGER SCANNER
When the devices are connected to the power supply, the language selection is displayed on the *ekey home CP DRM.* Once the boot procedure on the *ekey home FS* has been completed, the status LED of the finger scanner begins flashing in orange or blue colour.

Now the initialization can be started.
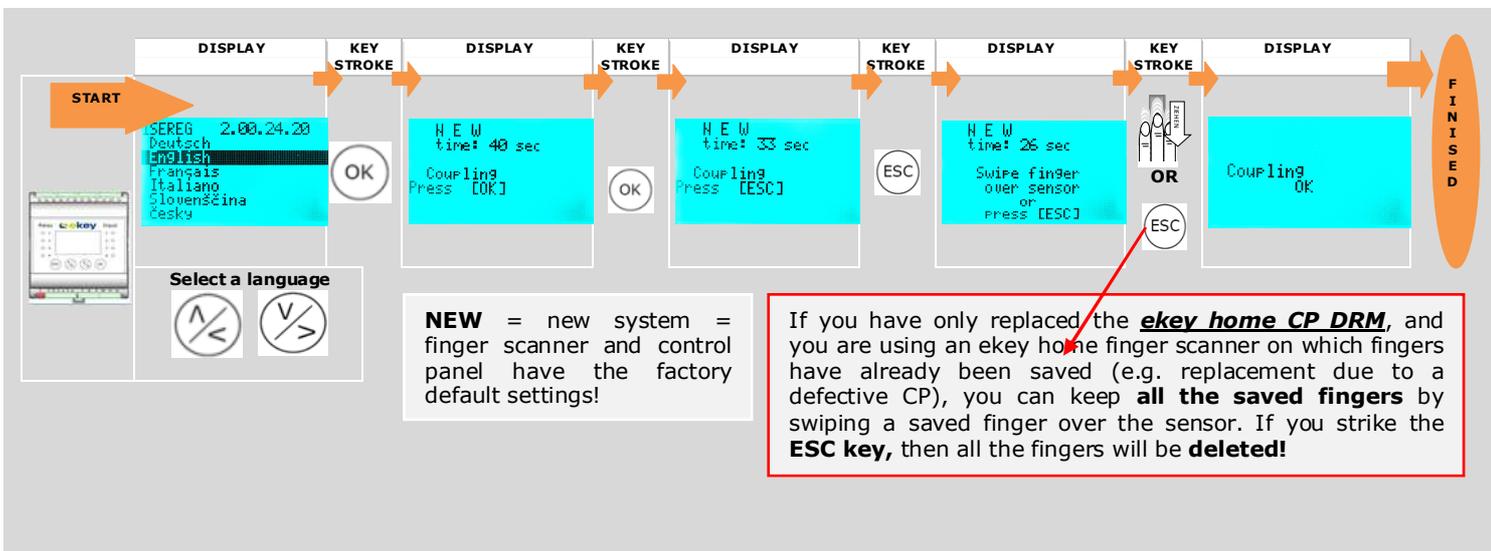
1.) Select a language using the ⊗ ⊗ buttons. It is now that you must define the language! After the initialization has been concluded, you CANNOT change the selected language anymore (except if you reset the system).

2.) Press the ⊙ button. A time counter is displayed, which counts from 45 seconds to 0. You will be asked to press the [OK] button.

```
N E W
time: 40 sec

Coupling
Press [OK]
```
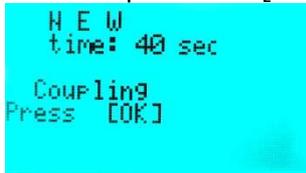
3.) Press ⊙. Now you will be asked to press the [ESC] button.

```
N E W
time: 33 sec

Coupling
Press [ESC]
```

4.) Now press ⊙.

```
N E W
time: 26 sec

Swipe finger
over sensor
or
Press [ESC]
```

5.) You now have 2 possibilities:
   A) *Initialization after having replaced the control panel*

   If it was necessary to replace the control panel because it was defective, then fingers had already been recorded in the *ekey home finger scanner*. In order not to have them deleted, a pre-recorded finger may now be swiped over the sensor, and the initialization process is started without deleting any data.

   B) *New installation*

   If this is a new system (new installation), press the ⊙ button once again.

   The system now initializes. All the fingers recorded previously on the finger scanner will be deleted.

6.) "Initializing OK " is then displayed for 1-5s. The control panel and the finger scanner have now been coupled.

```
Coupling
OK
```
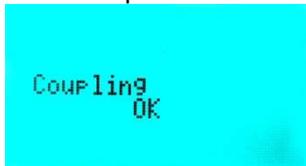
7.) Now the 14-digit serial number and the 4-digit software version number of the *ekey home CP DRM* and of the *ekey home FS* (finger scanner) are displayed. The initialization procedure has now been concluded.

System OK: means that the communication connection between the *ekey home FS* and the *ekey home CP DRM* is working properly.

```
System ok          99
SE: 80134305120308
    2.0.24.20
FS: 80131049110508
    6.2.10.11
Security code: --
```

- Number of fingers which can still be enrolled
- ekey home CP DRM serial number
- ekey home CP DRM software version
- ekey home FS serial number
- ekey home FS software version

You can now start setting up the system and entering user data.

8.2.2.4 ENTERING THE SECURITY CODE

The security code allows you to avoid system manipulations by unauthorized people. However, the control panel is normally mounted within the secured area (electric control cabinet), so for an unauthorized person to try to manipulate the system, must this person already be within this secured area. This security code is an additional hurdle, which the unauthorized person should override.

⚠️ *After **3** incorrect attempts, the device is blocked for **30 minutes** and the control panel display shows „Locked for 30 min". If the control panel is disconnected from the mains, the counter resets itself once is has been re-connected to the mains. In addition, the system has to be in the "System OK" status (finger scanner and control panel are connected to each other). If this is not the case, the lock will **not** expire!*
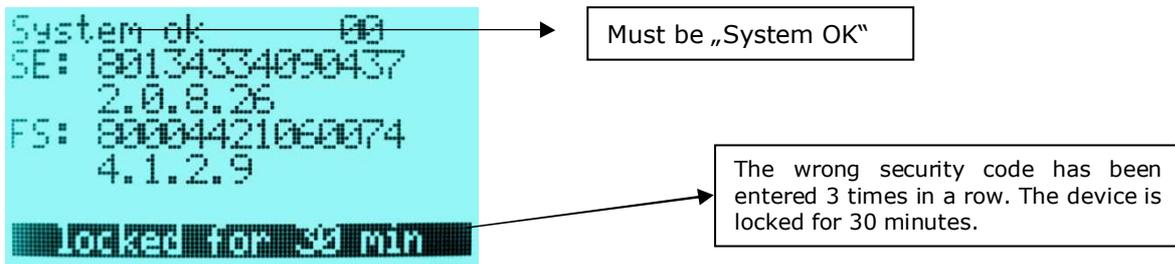
Must be „System OK"

The wrong security code has been entered 3 times in a row. The device is locked for 30 minutes.

The factory default setting for this code is „**99**". Change this code as soon as you have started up the system to any 2-digit code of your choice.
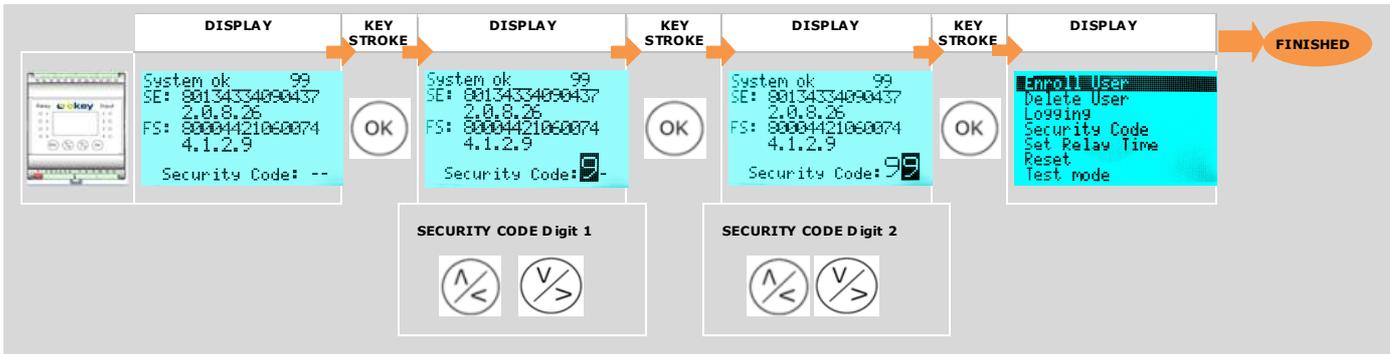
1.) Press the (ok) button on the control panel.
2.) Enter the left digit of the "security code" using the (∧<) (∨>) buttons.
3.) Press the (ok) button.
4.) Enter the right digit of the "security code" using the (∧<) (∨>) buttons.
5.) Press the (ok) button.
6.) The LCD display now shows the main menu. You may proceed with changes in the system.

8.2.2.5 ENROLLING A FINGERPRINT IN THE SYSTEM

In ekey home a maximum of **99** fingerprints can be enrolled. These 99 fingerprints can be assigned to 99 user IDs. You can thus for example
- administrate 11 users, each one enrolling 9 fingerprints or
- administrate 99 users, each one enrolling only 1 fingerprint or
- opt for any other mixed setup.

If you have already enrolled 99 fingerprints and you attempt to add the 100th, the following error message will be displayed on the LCD:
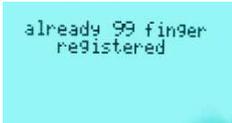
Generally speaking, we recommend to:

- save at least 2 fingerprints per user (ideally from different hands)
- use index and middle fingers. From an ergonomic point of view, they are best suited for proper operation resulting in the highest level of recognition.
- avoid using thumbs and little fingers.
- stick to the suggested numbering of the respective fingerprints (see below).

STOP

Before adding a fingerprint into the system, please read through section 7.2 "Operating the finger scanners", or watch the movie on proper use on the accompanying DVD. Using the finger scanner properly is essential for a stable operation, and this in turn starts during the fingerprint enrollment. Properly recorded fingerprints will simply work better!

Repeat this step until the complete user name has been entered (9 digits)

START	DISPLAY	Enter security code	DISPLAY	KEY STROKE	DISPLAY Enter user name	KEY STROKE	DISPLAY Enter user name	KEY STROKE

The numbers show which fingers have already been used for this user and which relay switches:
1 … Relay 1
2 … Relay 2 (only for *ekey home CP DRM 2*)
D … Double relay (only for *ekey home CP DRM 2*)

Select user number

Use the buttons to go to the User names and

Set digits 1 to 9 of the user name

DISPLAY Select finger	KEY STROKE	DISPLAY Select relay	KEY STROKE	DISPLAY	SWIPE FINGER OVER SENSOR	DISPLAY green…Finger enrolled!	DISPLAY

only for *ekey home CP DRM 2*

Select finger

Select relay

swipe

red… Finger rejected!

Try it again

The finger has been enrolled!
Now you can enroll additional fingers or jump back by striking the

ESC key

to main menu.

FINISHED

1.) First, enter the security code as per section 8.2.2.4
2.) Select "Enroll user" in the main menu.


```
Enroll User
Delete User
Logging
Security Code
Set Relay Time
Reset
Test mode
```

3.) Press the (OK) button.

4.) Select the user: This is what the user / finger matrix looks like:

The numbers show that these fingers for the corresponding user have already been allocated and which relay switches for each finger:
1 … Relay 1
2 … Relay 2 (only for *ekey home CP DRM 2*)
D … Double relay (*only for ekey home CP DRM 2*)

User number

Each individual user is indexed through the user number. On the right hand side, beside the user number, you can check if any finger has been saved for this one user. The numbers 1, 2 or D indicate

- that for this user, this one finger has been allocated
- which relay switches for this finger and
- via the location of the dash which finger this is.
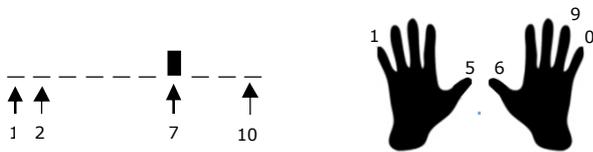
Begin counting with the little finger on the left hand. In the example above, finger #7 has been already enrolled. If you use our finger counting method, then finger #7 is the right index finger.

Select the desired user number for which you wish to enroll a finger using the ⊘⊘ buttons.

5.) Press the (OK) button.

6.) Set the user name

Navigate with the ⊘ button to the user name and press the (OK) button.

You can now use set each letter of the user name by using the ⊘ ⊘ buttons. Press the (OK) button to save the setting and go to the next menu item. You can thus define a meaningful name for each user.


```
MUSTERMAN
le small finger
le ring finger
le middle finger
le index finger
le thumb
ri thumb
```

Once you have confirmed the setting of the 9 letters of the user name by pressing (OK), then this is the saved name for this user. In our example, the user is called "MUSTERMAN".

7.) Now using the ⊗ ⊗ buttons, select the finger to be enrolled:

          This finger has already been enrolled
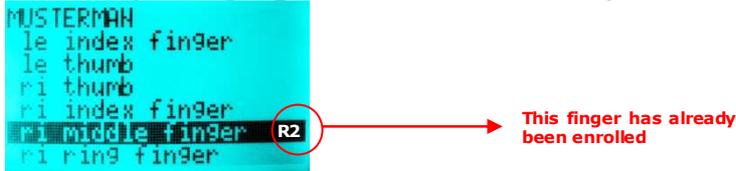
"R2" beside the finger means that this finger has already been enrolled and that it has been allocated to relay 2. You can however still select this finger and enroll it anew. The preceding finger image will then be automatically overwritten.

Usually the index and the middle fingers are the best ones for scanning!
The small finger and the thumb should be avoided, or only used in case of emergency.
Always enroll at least 2 fingers, preferably 1 finger of each hand!

Select the desired finger using the ⊗⊗ buttons.

8.) Press the (OK) button.

9.) Define which relay should switch.
For your *ekey home* system to open the right door, you must allocate a relay to the selected finger. Later on, in normal operation mode, each time you will swipe your finger over the sensor, then the allocated relay will switch.

This feature does not exist in the *ekey home CP DRM 1* system, since it only has one relay, which is allocated automatically.
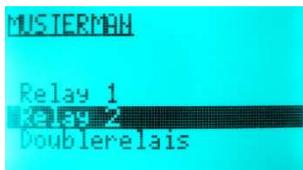
    ⊾ Relay 1 … if the enrolled finger is recognized in normal operation mode, then relay 1 switches
    ⊾ Relay 2 … if the enrolled finger is recognized in normal operation mode, then relay 2 switches
    ⊾ Double relay … if the enrolled finger is recognized in normal operation mode, then both relay 1 and 2 switch.
In each one of these 3 options, the effective relay times are those which have been previously set (see section **Fehler! Verweisquelle konnte nicht gefunden werden.**)

Select the desired relay with the ⊗⊗ buttons.

10.) After having selected the relay, press the (OK) button.

11.) You will now see a message on the display, asking you to swipe your finger over the sensor or cancel the finger enrollment by pressing the (ESC) button.
You now have 60 seconds to swipe your finger, starting at the top knuckle downwards, over the sensor. The finger scanner status LED lights up **orange**= „operation mode Enrollment" = The device is waiting for a finger to enroll.

If you press (ESC), the finger enrollment will be canceled, without any finger having been enrolled, and you will be back to the finger overview.
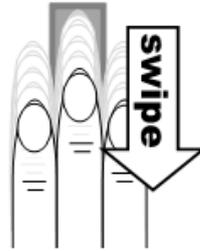
The fingerprint should be recorded in the manner described in section 7.2. The finger scanner features a (LED) status display, which signalizes using two different colors, after you have swiped your finger over the sensor, if the enrollment was successful or not:

Red: The finger could **not** be scanned successfully,
Please repeat the enrollment process. Read section 7.2 before doing so.
Watch the movie on the DVD.

Green: The finger has succesfully enrolled (scanned). The enrollment was successful.

„Enrollment OK" will be displayed for approx. 1 sec on the control panel, if the finger has been enrolled with success. After that the finger list shows up again. You will then see the relay number beside the finger description, meaning that it has been enrolled successfully.

The finger has been enrolled.

12.) You have now concluded the finger enrollment. You may now enroll other fingers, or go back to the main menu by pressing (ESC).

8.2.2.6 DELETING A USER

The „DELETE USER" (du) function always relates to all of the user´s data. It is NOT possible to delete individual fingers. If a user is deleted, all his recorded fingers will be irrecoverably deleted.
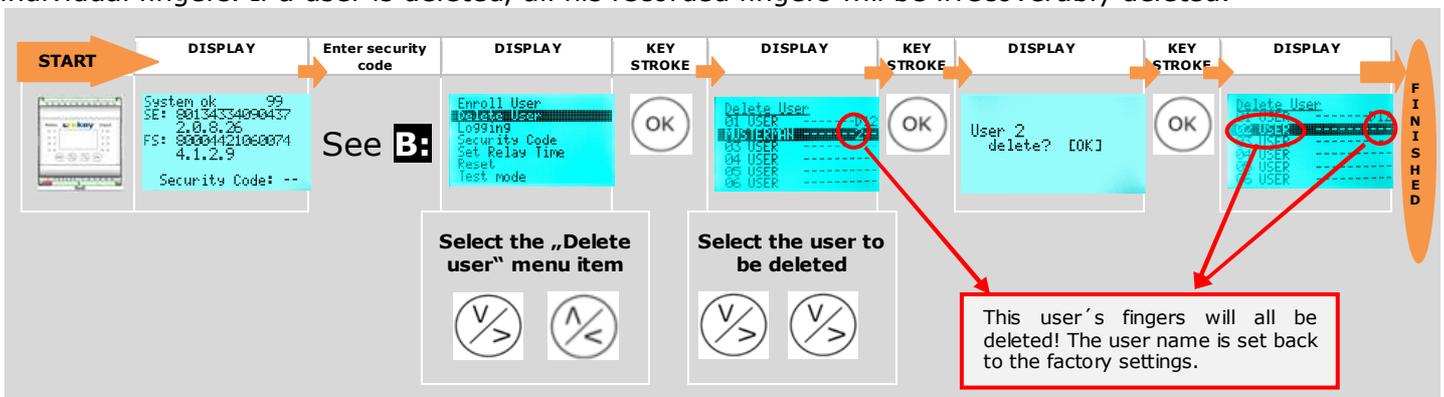
1.) First enter the security code as per 8.2.2.4.
2.) Select "Delete user" in the main menu using the ⊗⊘ buttons.
3.) Press the (OK) button.
4.) Select the user number which is to be deleted from the system using the ⊗⊘ buttons.

5.) Press the (OK) button.

6.) You will then be asked if you really wish to delete this user´s fingers.
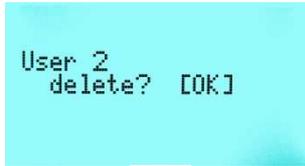
Press the (OK) button to delete all the fingers as well as the user name. Press the (ESC) button to cancel the delete process.

7.) The relay numbers indicating the enrolled fingers for that one user disappear. This user number can therefore be used for another new user.

The relay numbers and the user name beside "02USER" have disappeared. All the enrolled fingers have been deleted.

It is not possible to delete individual fingers! You can only delete all the user´s enrolled fingers.

8.) You can now delete other users or go back to the main menu by pressing (ESC).

8.2.2.7 SETTING A NEW SECURITY CODE

Please be aware that the device cannot be operated further without entering the security code. If you enter a new security code, then you will always need this code in the future in order to make changes (finger enrollment, delete user, etc.) in your ekey home system.
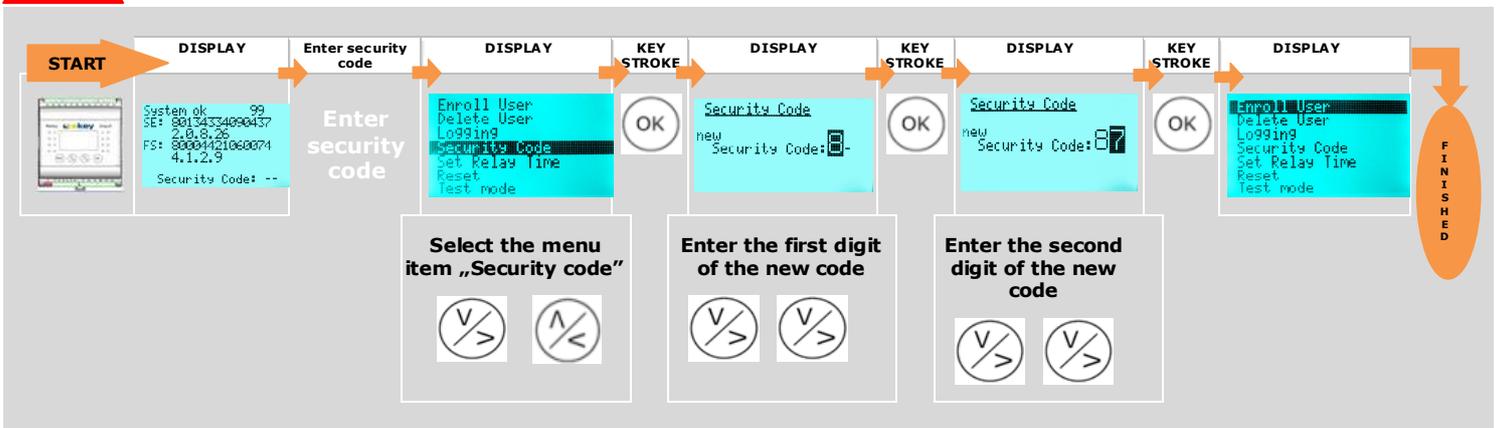
1.) First enter the current security code as per section 8.2.2.4.
2.) Select "Security code" in the main menu using the buttons.
3.) Press the (OK) button.
4.) Enter the left digit (decade digit) of the new security code using the buttons.
5.) Press the (OK) button.
6.) Enter the right digit (unit digit) of the new security code using the buttons.
7.) Press the (OK) button.
8.) The system returns automatically to the main menu.
9.) Memorize your security code, or write it down and keep it in a safe place, separately from the *ekey home CP DRM.*

Your security code is now enabled. Each time you wish to make entries in the system (enroll or delete users, change the relay switching times, …), you need to enter this security code.

8.2.2.8 CHANGING THE RELAY SWITCHING TIMES

The switching impulse times of the individual relays can be variably adjusted from **0.5**s to **99.0**s with intervals of 0.5s. This enables you to adjust the duration of the opening impulse of the door according to your application. The relay on your _ekey home CP DRM_ is preset at **3**s impulse duration.

Special feature relay time 00.0
If the value **00.0** is assigned to a relay in this menu, then a special function is enabled. In this case the relay output will toggle. Once a finger is recognized, the relay changes to its switched status and remains there until another finger is recognized. That relay thereby works as a switch and does not emit an impulse.

⚠️ _If there is a power cut or a RESET on the_ ekey home FS _or on the_ ekey home CP _due to a trouble signal in this operating mode (relay permanently closed), then the relay always restarts in the status you selected once the power supply has been reconnected (or after the reset). With the ZnR … status after reset flag, you define:_
-… **the relay always stays open after a reset or power cut**
I … the relay takes after the reset of power cut the same state again as the one it had before.
The ZnR flag can only be modified if relay time 00.0 has been previously selected!
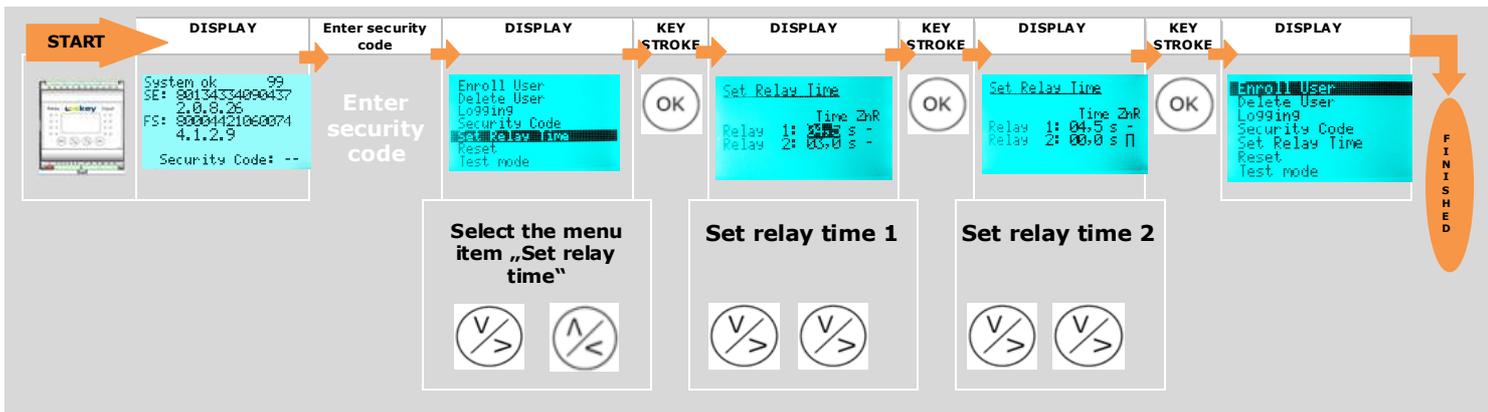
1.) First enter the security code as per section 8.2.2.4.
2.) Select "Set relay time" in the main menu using the ⌄⌃ buttons.

3.) Press the (OK) button.
4.) Set the relay time for relay 1.
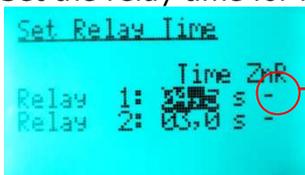
ZnR ... status after reset; Can only be modified if relay time 00.00 (toggle mode) has been selected.

Set the relay time using the ⌄⌃ buttons. The switching impulse times of the individual relays can be variably adjusted from 00.5s to 99.0s with intervals of 0.5s. Relay time 00.0 enables a special feature, where the relay toggles (switch mode).

5.) Press the (OK) button.
6.) Set the relay time for relay 2.

This relay time can only be set for the *ekey home CP DRM 2*.

ZnR ... status after reset; Can only be modified if relay time 00.00 (toggle mode) has been selected.

7.) Press the (OK) button.
8.) You now are back to the main menu.

The duration of the impulse or the switching feature has thus been defined for the selected relay.

8.2.2.9   RESETTING TO FACTORY SETTINGS

STOP *If you carry out this procedure, then all the saved data will be irrecoverably deleted!*

If you reset the device to its factory settings, all the user data (user fingers) in the memory are deleted. The security code is reset to the standard value of 99, the control panel and the finger scanner are disconnected from each other, and the relay switching times are set for all the relays at 3s.
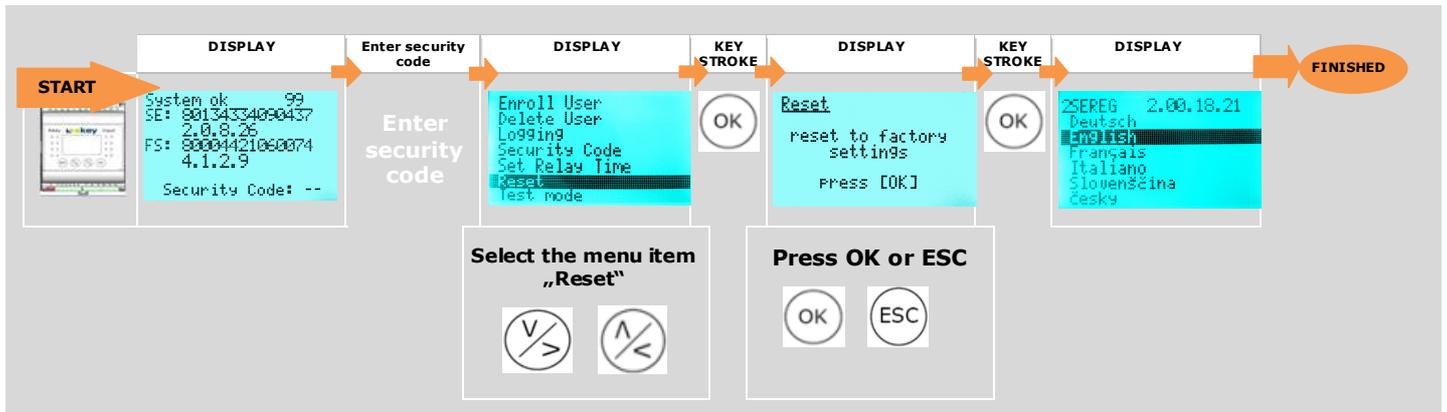
1.) First enter the security code as per section 8.2.2.4.
2.) Select "Reset" in the main menu using the buttons.
3.) Press the (OK) button.
4.) A message appears on the display, asking you if you are sure you want to execute a RESET.
- If you press the (OK) button, the reset will be done.
- If you press the (ESC) button, you will cancel this action and go back to the main menu.
5.) After pressing (OK), the procedure will take a couple of seconds. The system will reset all the settings and delete all the enrolled fingers. At the end of the RESET procedure, you will be asked on the *ekey home CP DRM* display to select a language, and the ekey home finger scanner lights up orange.

Proceed from section 8.2.2.3 in order to set up your system anew from the factory settings.

8.2.2.10 TEST MODE

The test mode has been particularly designed to run functional tests after the initial installation and for trouble shooting the system in combination with a suitable locking system. In this mode, you can manually activate the relay output via the menu of the *ekey home CP DRM*. This way, you can verify in a simple manner if the locking system has been wired properly.
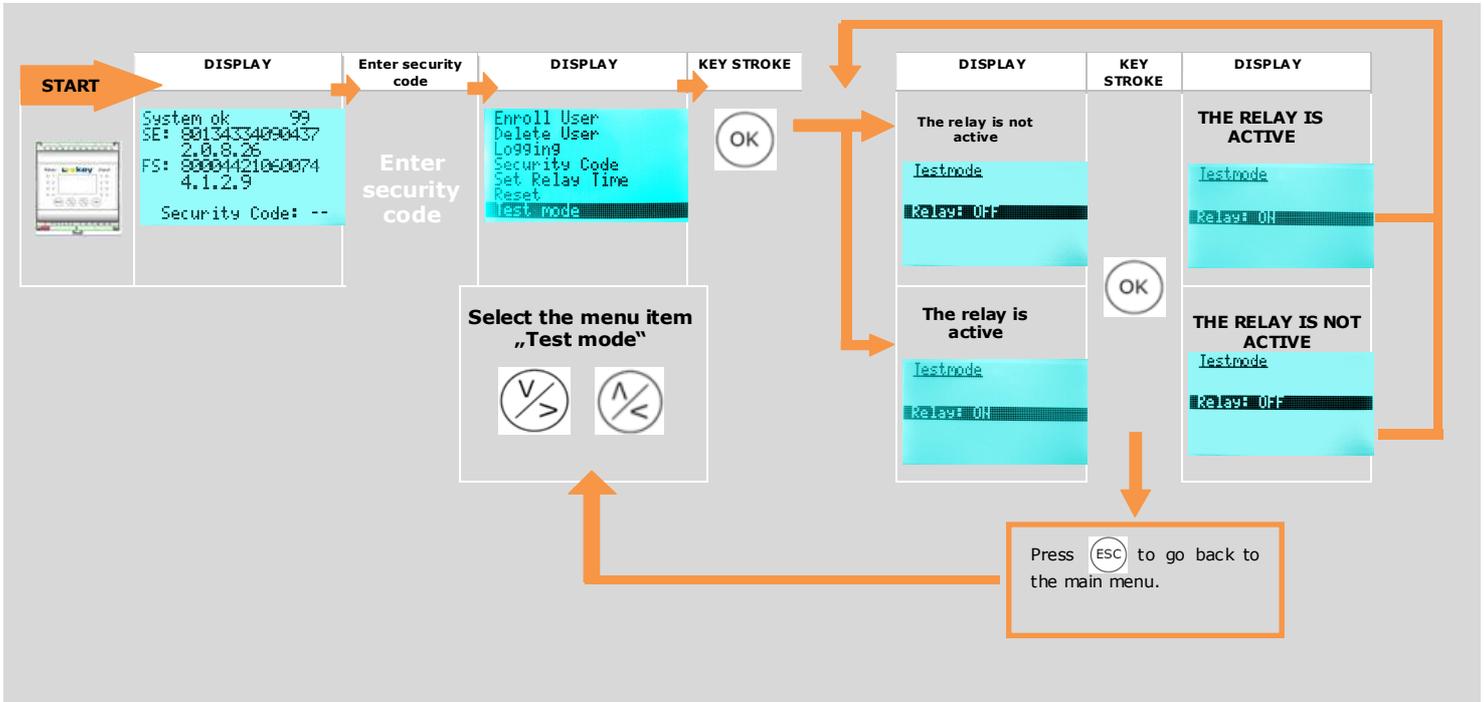
1.) First enter the current security code as per section 8.2.2.4.
2.) Select "Test Mode" in the main menu using the ⊘ ⊘ buttons.
3.) Press the (OK) button.
4.) Depending on the current operating mode of the *ekey home CP DRM* relay, you can either activate or deactivate the relay output. Please use the (OK) button for this purpose. Pressing the (OK) button will switch the relay output.
5.) Press the (ESC) button to exit the test mode and return to the main menu. While returning from the test mode, the relay output is deactivated.

8.2.2.11 LED INTENSITY

The *ekey home CP DRM* allows you to define the LED intensity of the status LED on the finger scanners in idle mode. The status LED is always preset on „On" (factory setting) and lights up blue with maximum intensity. Some customers however wish to have it dimmed or even switched off, so that the finger scanner beside the front door does not attract too much attention.
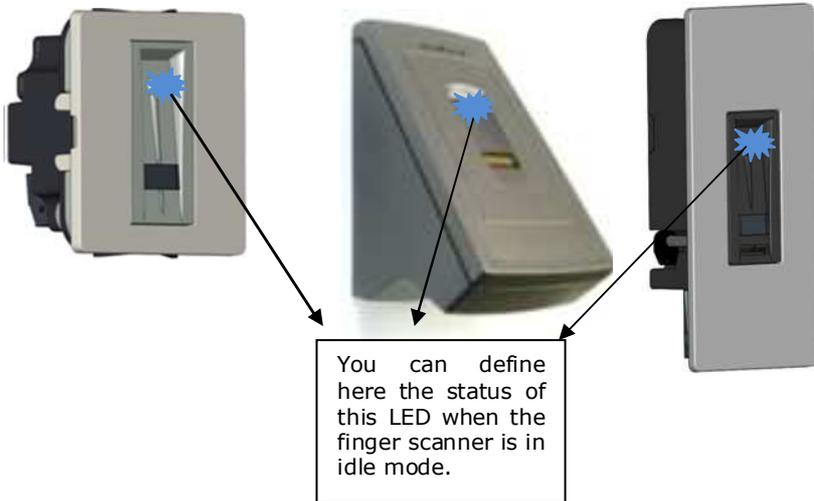
3 different statuses can be set:

- **LED on** … The LED lights up with full intensity (factory setting).
- **LED dimmed** … The LED is dimmed.
- **LED off** … The LED is off.

You can define here the status of this LED when the finger scanner is in idle mode.
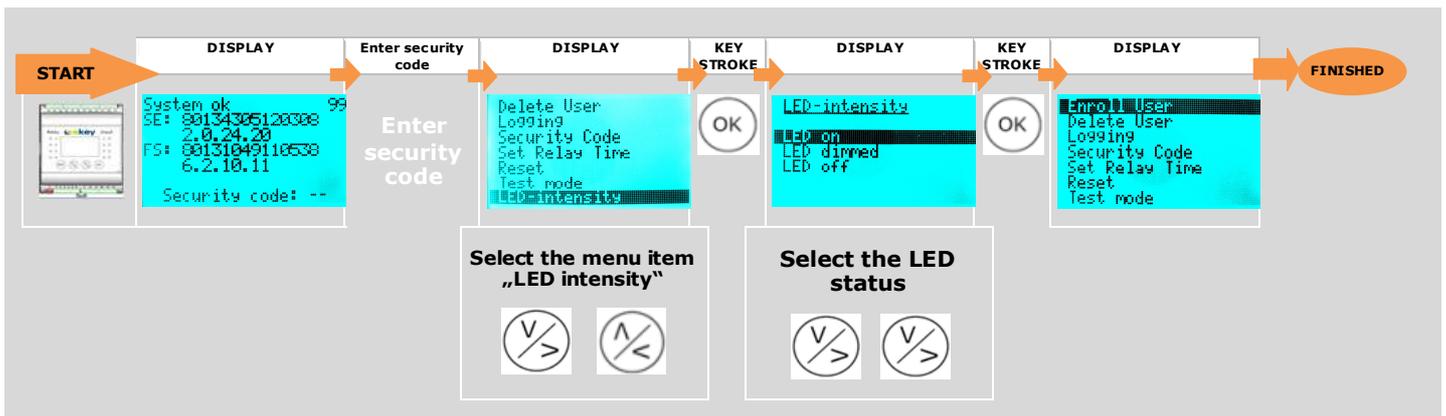
1.) First enter the current security code as per section 8.2.2.4.
2.) Select „LED intensity" in the main menu using the ⊗ ⊗ buttons.

3.) Press the (OK) button.

4.) Now select the LED status of the status LED on the finger scanner in idle mode using the ⊗ ⊗ buttons.
5.) Press the (OK) button.

   The status of the status LED on the finger scanner will be changed immediately to the one you selected and you will go back to the main menu.

8.2.2.12 LOGGING

The _ekey home CP DRM_ logs the last 50 accesses. Both the user name and the switched relay will be displayed on a list.
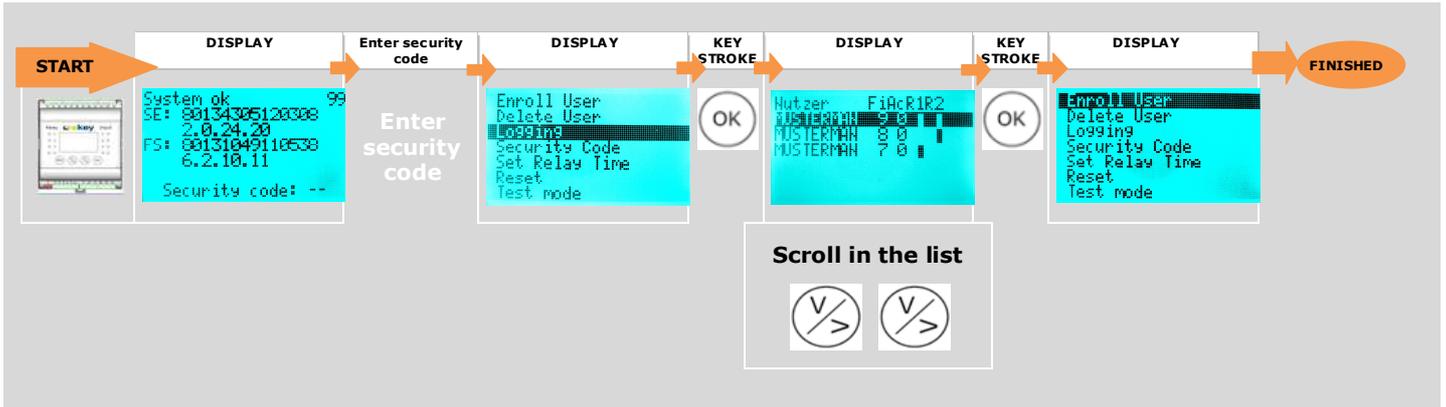
1.) First enter the current security code as per section 8.2.2.4.
2.) Select „Logging" in the main menu using the ⊗⊗ buttons.

3.) Press the (OK) button.

The list with the last 50 accesses will now be displayed. They are ranked chronologically, beginning with the latest one. Here is all the information you can have access to:
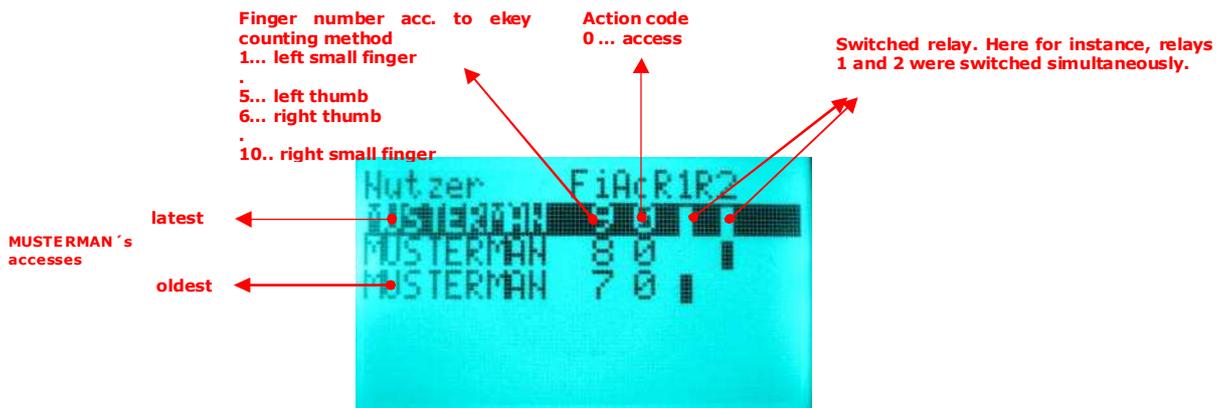
You can scroll through the list using the ⊗⊗ buttons.

4.) Press the (OK) button and you will go back automatically to the main menu.

8.2.3 ELECTRIC CONNECTION

You can find further details such as the
- pin configuration
- wiring sketches

either on the wiring diagram supplied with the product, or on the DVD (.pdf file).

8.2.4 MOUNTING

You can find further information to be supplied either on the ekey mounting instructions supplied with the product, or on the DVD (.pdf file).

9. Other features

Software update
The flawless operation of your ekey home products is essentially guaranteed thanks to the high quality of the software implemented on the devices. Since ekey is permanently improving its products and providing them with new features, ekey offers you the possibility of updating your "ekey home" products. That is to say, you can, as long as ekey makes it available on the homepage, update the software of your ekey devices (ekey home finger scanner and ekey home control panel) with a *software update kit* to the latest available firmware version.

Contact your ekey partner for more details!

10. Trouble-shooting

Error	CP display	FS display	Cause	Solution
Finger enrollment				
Finger enrollment is not working			1. The finger was not swiped evenly over the sensor starting at the top knuckle. 2. The finger was swiped with too little or too much pressure over the sensor. 3. The finger was swiped too fast or too slowly over the sensor. 4. The finger is being swiped at an incorrect angle. 5. The finger does not have enough features to be detected (due to wear).	1. Swipe your finger naturally/evenly over the sensor without any stops, starting at the top knuckle. 2. Swipe the finger gently, but not too carefully over the sensor. 3. Swipe the finger at a medium speed and at the correct angle over the sensor (see section 7.2**Fehler! Textmarke nicht definiert.**). 4. Use a different finger.
A finger that has already been enrolled is no longer recognized.			1. During the enrollment, another part of the finger surface was captured. 2. The recording of the finger was not carried out properly. 3. The finger was incorrectly swiped over the sensor.	1. Re-enroll the fingerprint in the system and pay attention to swiping your finger evenly. 2. See "Finger enrollment is not working" – perfect recording guarantees good recognition. 3. See section 7.2.
ekey home CP IN and ekey home CP WM				
The status dot on the control panel is not blinking			No power supply	1. Check the power supply, where necessary check the fuses
Two dots are lit up on the display of the control panel			No or defective device coupling	Re-connect (couple) the devices (See section 8.2.1.4 Initializing the devices)
Error code „E0" on the display, then the countdown starts from 45			1. No bus connection to the finger scanner. 2. The power supply to the system has been interrupted. The system will be restarted.	1. Check the 4-core connection cable between finger scanner and control panel. Pay special attention to clamp 1 and 2. 2. Check the power supply on clamp 3 and 4, it must be at least 8V. 3. Wait until the start process has finished.
Error code „E1" on the display			99 fingerprints have already been registered.	No more fingerprints can be registered. Where necessary delete existing fingerprints in order to record new ones.
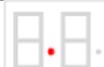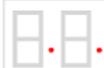
Error code „E2" on the display	**E.2.**	The wrong security code has been entered three times. Device is locked for 30 minutes.	Wait 30 minutes before entering the security code again. The system has to be permanently powered within those 30 min!
Error code „E3" on the display	**E.3.**	Device connected/coupled incorrectly	Re-couple the devices = initialize devices. One of the devices has been manipulated.

ekey home CP DRM

The initialization process (= commissioning) cannot be carried out.	N E W time: 40 sec initializing press [OK]	The control panel cannot reach the finger scanner, no data exchange possible.	Check, whether the finger scanner is connected to the mains (status LED has to blink in orange). Check the bus connection (clamp 1 and 2) between the finger scanner and the control panel. Check the device termination (resistor) acc. to the wiring diagram.
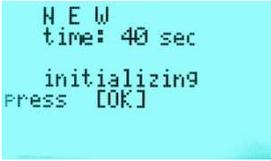
The message „Locked for 30 min" is displayed on the LCD of the CP DRM.	System ok 00
	SE: 80134334090437
	    2.0.8.26
	FS: 80004421060074
	    4.1.2.9
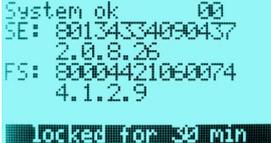	
	locked for 30 min
		The wrong security code has been entered three times in a row.	Wait 30 minutes before entering the security code again. The system has to be permanently powered within those 30 min!

The display of the CP DRM reports offline and the counter decrements from 44 to 0.	offline
	SE: 80134334090437
	    2.0.7.7
	FS: -
	        38
		1. No bus connection to the fingerprint scanner
		2. The power supply to the system has been interrupted. The system will be restarted.
			1. Check the 4-core connection cable between finger scanner and control panel. Pay special attention to clamp 1 and 2.
			2. Check the power supply on clamp 3 and 4, it must be at least 8V.
			3. Wait until the start process has been concluded.
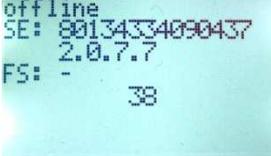
The display reports during enrollment „Already 99 fingers registered"	already 99 finger registered	99 fingerprints have already been registered. You cannot enroll more than 99 fingerprints.	Try to delete inactive users.
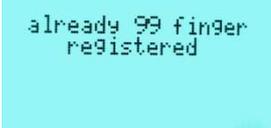
ekey home finger scanner

The green LED on the finger scanner signalizes that the finger has been positively recognized, but the relay does not switch.		Wrong device allocation (coupling). Access will not be granted since one of the two devices has been exchanged.	Re-couple the devices. One of the devices has been manipulated. Reset the system to factory settings before re-initializing them (see section 8.2.1.12)
The status LED of the finger scanner is blinking red/green.		The sensor might have been damaged or may not be working correctly.	Contact the technical support department. Please have the serial number of the product ready (to be found below the barcode label). See page 4 for contact details.

11. Maintenance

11.1 CARE

Generally speaking, your system does not require any maintenance. Apart from cleaning the sensor surface occasionally when it is dirty, you are not required to do anything.

11.2 CLEANING

Care of the sensor area
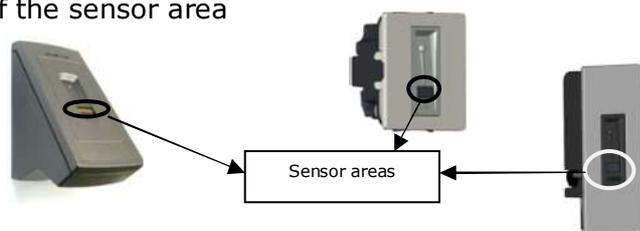
The sensor area of the finger scanner is the most important element of your ekey home system and needs to be taken care of accordingly in order to function reliably and durably.
The sensor area is self-cleaning, since fingers are being swept regularly over it, and therefore needs no special maintenance. If the finger scanner still becomes dirty, wipe the sensor with a damp (not wet), non-scratch or non-abrasive cloth. Use normal water without any cleaning agents. Be particularly careful when cleaning the surface of the sensor. Do not rub on the sensor area or exert pressure on it.

12. Disposal

In the event of a disposal of the product, please note the relevant legal provisions. **Information on the disposal of electrical and electronic equipment in the European Community:**

Within the European Union the disposal of electrical devices is governed by national regulations based on EU Directive 2002/96/EC on Waste Electrical and Electronic Equipment (WEEE). All equipment delivered after August 13th, 2005 must not be disposed of with municipal or household waste anymore. To document this, they are marked with the following symbol

Since the disposal requirements vary from one EU country to country, please contact your supplier for further details in case of need.

13. Technical Data

The technical specification for each product (*ekey home finger scanner* and *ekey home control panel*) can be found in the respective data sheets on the CD-ROM.

14. Accessories

ekey supplies a wide range of accessories for its biometric systems. Please contact either your ekey partner, your ekey installer or ekey itself for accessories such as:
- power supplies
- pre-configured cables
- in-wall sets and mounting aids
- design elements
- milling samples
- etc.

15. Declarations of conformity

The declaration of conformity for each product (*ekey home finger scanner* and *ekey home control panel*) can be found in the "Declarations of conformity" folder on the DVD.

16. ekey branch offices

Austria
ekey biometric systems GmbH
Lunzerstraße 89, A-4030 Linz
Phone: +43 732 890 500 2000
Fax: +43 732 890 500 2002
Technical support: +43 732 890 500 1000
E-mail: office@ekey.net

Germany
ekey biometric systems Deutschland GmbH
Liebigstraße 18, D-61130 Nidderau
Phone: +49 (6187) 90696-0
Fax: +49 (6187) 90696-20
Technical support: +49 6187 90696 28
E-mail: deutschland@ekey.net

Switzerland | Liechtenstein
ekey biometric systems Est.
Landstrasse 79, FL-9490 Vaduz
Phone: +423 235 08 80
Fax: +423 235 08 81
Technical support: +42 3 235 0880
E-mail: schweiz@ekey.net

Slovenia
ekey biometric systems d.o.o.
Vodovodna cesta 99, SI-1000 Ljubljana
Phone: +386 1 5309 489
Fax: +386 1 5309 493
Technical support: +386 1 5309 495
E-mail: podpora@ekey.si