



en **OPERATING INSTRUCTIONS**

English

Translation of the original instructions - ID 172/494/0/331

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General

ekey biometric systems GmbH operates a quality management system in compliance with EN ISO 9001:2008 and is certified accordingly.

Note

These instructions form a component of the product. Ensure that they are stored in a safe place. Please contact your dealer for further information about the product.

Product liability and limitation of liability

Safe operation and function of the devices can be impaired in the following situations. Liability due to malfunctioning is transferred to the operator/user in such cases:

- The system devices are not installed, used, maintained and cleaned in accordance with the instructions.
- The system devices are not used within the scope of proper use.
- Unauthorized modifications are carried out on the system devices by the operator.

These operating instructions are not subject to updating. Subject to optical and technical modifications, any liability for errors and misprints is excluded.

Warranty and manufacturer's warranty

Our general terms and conditions apply as valid at the date of purchase. See <http://www.ekey.net>.

ekey biometric systems GmbH provides a 24-month warranty for material or processing defects. This warranty is only valid in the country where the product was purchased. The product may only be used with original ekey spare parts and accessories.

Notices, symbols and abbreviations



NOTICE

Denotes additional information and useful tips.



DANGER





Denotes imminent danger which could lead to death or serious injuries.



ATTENTION

Denotes possible property damage which cannot result in injuries.

Symbols:

1.	Step-by-step instructions
	Reference to sections of this manual
	Reference to the mounting instructions
	Reference to the wiring diagram
□	Listing without specified order, 1st level
<u>Displayed</u> <u>value</u>	Displayed values
<i>ekey home</i> <i>FS OM</i>	Product names
MENU ITEM	Menu items
	Buttons

Abbreviations and terminology:

AR	arte
FAR	False Acceptance Rate
FRR	False Rejection Rate
FS	Finger scanner
IN	integra
CP	Control panel

Fingerprint The biometric information extracted from the fingerprint

Safety information

DANGER

All *ekey home* devices are to be operated with safety extra-low voltage (SELV). Only use power supplies rated protection class 2 according to VDE 0140-1. Failure to do so will result in life-threatening danger due to electric shock. Only certified electricians are authorized to carry out the electrical installation!



Life-threatening danger resulting from electricity

Mount the control panel in a safe internal area. This prevents tampering from the outside.

Safety against tampering

Product description

System overview

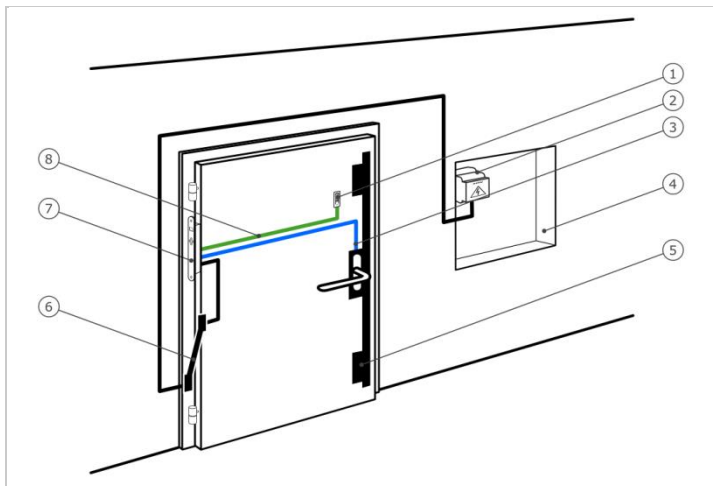


Fig. 1: Overview of the system

- 1 Finger scanner
- 2 Power supply
- 3 Connection from control panel to motorized lock
- 4 Distributor
- 5 Motorized lock
- 6 Cable transfer
- 7 Control panel
- 8 Connecting cable from finger scanner to control panel

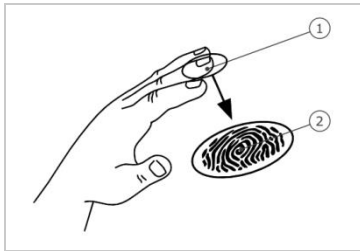
Scope of delivery

- Finger scanner
- Control panel
- Operating instructions, mounting instructions, wiring diagram;
- Optional: matching accessories (cable transfer, power supply, connecting cable, covers, etc.).

Proper use and area of application

This product is a finger scan access control system. The system is comprised of a finger scanner and control panel. It is available in various makeups and component combinations. It detects the characteristics of the fingerprint contours, compares them to the stored fingerprint image and opens in the event of a match.

The system is primarily designed for opening house doors, apartment doors and garage doors in homes, businesses and limited industrial areas.



- 1 Front phalanx
- 2 Fingerprint

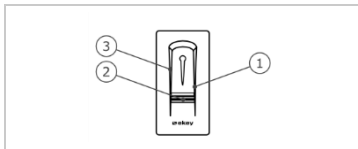
Fig. 2: Fingerprint

The finger scanner detects the fingerprint by means of a line sensor. The control panel processes it. It then compares the result with the stored fingerprint image. The finger scanner only works correctly and reliably with the front phalanx print. Swipe your finger steadily and evenly over the sensor in the correct position.

Finger scanner controls

Control	Function
Finger swipe area	Store fingerprints by 'swiping the finger' evenly downwards over the sensor.

Table 1: Finger scanner controls







- 1 Right guiding edge
- 2 Sensor
- 3 Left guiding edge

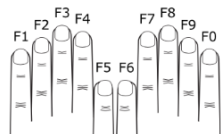
Fig. 3: Finger swipe area

Correct operation of the finger scanner

Incorrect operation will impair the function of the finger scanner.

Step	Figure	Description
1st		Hold your finger straight, place it centrally between the guiding edges. Do not twist the finger.
2nd		Place the joint of the front phalanx directly onto the sensor. Place your finger flat onto the finger swipe area.
3rd		Stretch out the neighbouring fingers.
4th		Move your finger evenly downwards over the sensor. Move the whole hand simultaneously. Swipe the front phalanx fully over the sensor in order to achieve optimal results. The movement takes approx. 1 second.

General hints for achieving a good-quality fingerprint image



- Recommended finger numbering:
- The index, middle and ring fingers work best. The thumb and little finger work marginally or not at all.
- If the fingers are frequently wet, save the images with wet fingers.
- Children's fingerprints work from approx. 5 years of age.

Optical signals on the finger scanner



The 3 LEDs on the finger scanner signal the operating status and function of the overall system.

Fig. 4: Optical signals on the finger scanner

Control panels are available in 2 relay variants. You can only operate 1 finger scanner per control panel.



Product name	<i>ekey home CP IN plus 1</i>	<i>ekey home CP IN plus 2</i>
Figure		
Mounting types	Can be integrated, 1 relay, 1 input	Can be integrated, 2 relays, 1 input

Table 2: Control panel variants

Function of the control panel

The control panel is the actuator of the system. It serves to switch one or two relays.

Control panel controls

Controls	Function
Seven-segment display and 4 buttons	Programming and configuring, relay control.

Table 3: Control panel controls

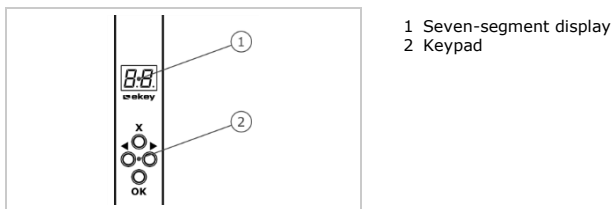


Fig. 5: Overview of the *ekey home CP IN plus*
















Button				
Description	OK	Arrow pointing to the left	Arrow pointing to the right	ESC
Function	Save values, jump to the next menu level.	Navigate in the menu, set values.	Navigate in the menu, set values.	Leave a menu level, cancel input.

Table 4: Control panel programming buttons

Menu items

The control panel offers various menu items:

	Enroll user	Stores users and fingers.
	Delete user	Deletes all data for a user.
	Security code	Sets the security code.
	Information	Displays the serial and version number.
	Reset	Resets to default settings.
	Relay time	Changes the relay switching times.
	LED intensity	Sets the LED brightness.
	Test mode	Activates the test mode for commissioning.
	Demo mode	Executes demo mode.
	Input	Sets the digital input.
	Update	Performs an update.

Technical specifications

Description	Unit	Value
Supply	VDC	5
Power input	W	Heating off: 1 Heating on: 3
Temperature range	°C	-25 to +70
Sensor	Type/ppi	Line, 500
Protection class	IP	54 (front side)
Speed	s	1-2
Operational lifetime	Finger scans	approx. 10 million

Table 5: Technical specifications: *ekey home finger scanners*

Description	Unit	Value
Supply	VDC	8-24
Power input	W	1
Relays	Quantity	1 (2)
Switching capacity	VDC/A	42/2
Temperature range	°C	-20 to +70
Protection class	IP	20
Memory	Fingerprints	99
Security	FAR/FRR	1:10,000,000/1:100
Digital input	Quantity	1

Table 6: Technical specifications: *ekey home control panel IN 1 (2) plus*

Installation and commissioning

ATTENTION





Mount and cable the product correctly before connecting power. Failure to do so will create a risk of possible property damage! Do not connect the power supply beforehand!

Mount the system in accordance with the supplied mounting instructions.



Cable the system in accordance with the supplied wiring diagram.



Step	Action	Display
1st	Ensure safe installation of the devices. Close the covers.	
2nd	Connect the power supply to the mains.	 <p>1 point flashes on the display: Normal mode.</p>
3rd		 <p>The finger scanner lights up blue: Normal mode.</p>

The devices have now been implemented and are in normal mode.

Entering the security code

Entering the security code grants you access to the main menu. The default code is 99. Change the code immediately after commissioning.



See Changing the security code, page 10.

The system is in normal mode.

Step	Action	Description	Display
1st		Press OK .	9.8
2nd		Press < or > to select the first digit of the code.	9.8
3rd		Press OK .	99
4th		Press < or > to select the second digit of the code.	99
5th		Press OK .	EO

The system displays the main menu. It automatically switches back to normal mode if you do not press a button within 90 s.

Changing the security code

The security code can be changed via the main menu. To get to the main menu, enter the security code.



See Entering the security code, page 10.

The system displays the main menu.

Step	Action	Description	Display
1st		Press < or > until SC is displayed.	5.2
2nd		Press OK .	0.8
3rd		Press < or > to select the first digit of the new code. E.g. <u>2</u> .	2.8
4th		Press OK .	20
5th		Press < or > to select the second digit of the new code. E.g. <u>5</u> .	25
6th		Press OK .	0H

The new security code is saved. The system is in normal mode.

The switching time for each individual relay can be set anywhere between 1 and 99 s. By default, the switching time is set to 3 s. When the time is set to 0], the relay operates as a switch: the relay changes its switching status when a finger is detected and it remains in that status until another finger is detected.

NOTICE



When controlling an alarm system with relay time = 0] a power failure or reset (when an unrecognized finger is swiped over the finger scanner 10 times in a row) will deactivate the alarm system.

The relay switching times are set via the main menu. To get to the main menu, enter the security code.



See Entering the security code, page 10.

The system displays the main menu.

Step	Action	Description	Display
1st		Press [←] or [→] until <u>rt</u> is displayed.	rt
2nd		Press [OK].	01
3rd		Press [←] or [→] to select the relay number. Relay selection is available on control panels with more than one relay.	02
4th		Press [OK].	03
5th		Press [←] or [→] to set the relay switching time. E.g. <u>10</u> .	10
6th		Press [OK].	04

The relay switching times are saved. The system is in normal mode.

Test mode tests the overall system (tG) and the lock after it has been installed in the door (tS). It switches the relay(s) on and off and checks the electrical connections to the motorized lock.

Performing test mode














Testing the overall system

The test of the overall system is performed via the main menu. To get to the main menu, enter the security code.



See Entering the security code, page 10.

The system displays the main menu.

Step	Action	Description	Display
1st		Press  or  until tE is displayed	
2nd		Press OK .	
3rd		Press OK .	
4th		Swipe any finger over the sensor. Relay 1 switches for 3 s.	 The finger scanner lights up green.
		Relay 2 switches for 3 s.	 The finger scanner lights up orange.
5th		Press ESC 3 times.	

The entire system has been tested. The system is in normal mode.



Testing the lock

You can switch the relays individually. The test of the lock is performed via the main menu. To get to the main menu, enter the security code.



See Entering the security code, page 10.

The system displays the main menu.

Step	Action	Description	Display
1st		Press  or  until tE is displayed.	
2nd		Press OK .	
3rd		Press  or  until tS is displayed.	
4th		Press OK .	
5th		Press OK . Relay 1 switches for 3 s.	
6th		Press  or  until o2 is displayed.	
7th		Press OK . Relay 2 switches for 3 s.	
8th		Press ESC 3 times.	

The relays have been tested. The system is in normal mode.

This function defines the brightness of the status LEDs on the finger scanner when in idle mode.

The LED brightness is set via the main menu. To get to the main menu, enter the security code.

See Entering the security code, page 10.



The system displays the main menu.

Step	Action	Description	Display
1st		Press or until <u>LE</u> is displayed.	
2nd		Press .	
3rd		Press or to select the desired LED brightness. E.g. <u>2</u> . <u>0</u> = LED off <u>1</u> = LED dimmed <u>2</u> = LED on	
4th		Press .	

The LED brightness is saved. The system is in normal mode.

The digital input of the control panel enables the following functions:

Remote opening of relay 1

The input functions as a remote opener for relay 1. In this case, the relay switches the defined relay switching time or for as long as the input is enabled (e.g. request-to-exit button, permanent opening).

Alarm status indication

The LEDs on the finger scanner indicate for 30 seconds the digital input status when an authorized finger is swiped over the sensor. If the digital input is enabled, the LEDs light up red. If the digital input is disabled, the LEDs light up green. A digital input status change within these 30 seconds is also indicated by the LEDs. This enables you to see that the alarm system is still appropriately sensitive, for example.

Alarm control for relay 1













Relay 1 cannot be switched if the input is enabled (e.g. entrance blocking while the alarm system is enabled). The LEDs on the finger scanner indicate for 30 seconds the digital input status when an authorized finger is swiped over the sensor while the input is enabled. The LEDs light up red for 30 seconds.

The digital input is set via the main menu. To get to the main menu, enter the security code.

See Entering the security code, page 10.



The system displays the main menu.

Step	Action	Description	Display
1st		Press  or  until <u>IP</u> is displayed.	
2nd		Press <u>OK</u> .	
3rd		Press  or  to select the desired function: Fr = Remote opening of relay 1; A = Alarm status indication; Ar = Alarm control for relay 1. E.g. <u>A</u> .	
4th		Press <u>OK</u> .	

The digital input has been set. The system is in the main menu.

Storing fingers

The system enables a maximum of 99 fingerprints to be enrolled.

Storing fingerprints allows you to do the following:

- Assign a memory space to a user.
- Assign a number to the finger (F1, F2, ..., F9, F0).
- Assign a relay to the finger on the *ekey home CP IN plus 2*.
- Enroll the fingers.



NOTICE











- Store at least 2 fingers – one from each hand.
- Create a list of users.
















Fingers are stored via the main menu. To get to the main menu, enter the security code.









See Entering the security code, page 10

The system displays the main menu.

Step	Action	Description	Display
1st		Press  or  until <u>Eu</u> is displayed.	
2nd		Press <u>OK</u> .	
3rd		Press  or  to select the user number. If the user has already saved a finger, a point lights up on the right.	

Step	Action	Description	Display
4th		Press OK .	
5th		Press < or > to select the finger number. If there is already a finger saved under this finger number, a point lights up on the right. The finger can be overwritten.	
6th		Press OK .	
7th		Press < or > to select the relay. od = double relay (relay 1 + 2). Relay selection is available on control panels with more than one relay.	
8th		Press OK . The control panel is ready for finger enrollment.	
9th		Swipe the finger over the sensor. Repeat this step at least twice. Between each individual finger swipe, the finger scanner lights up orange if finger enrollment is not complete.	 The finger scanner lights up orange.
			 The finger scanner lights up green.
			 The finger scanner lights up green on the left.
			 The finger scanner lights up red.







Step	Action	Description	Display
		The quality of the fingerprint image is acceptable. However, it may be possible to improve the quality by swiping the finger again. Press OK if you want to end the enrollment process.	-
		The quality of the fingerprint image is poor or the finger was not recognized. Swipe the finger over the sensor again.	-
10th	No action required.	-	  The finger scanner lights up blue.
11th	No action required.	To enroll more fingers or users, start again from step 1.	-

The fingerprints are stored. The system is in normal mode.

Use

Opening a door

The primary purpose of the product is to open doors. The system is in normal mode.

Step	Action	Description	Display
1st		Swipe a stored finger over the sensor.	 The finger scanner lights up green.  The finger scanner lights up red.
		The finger was not recognized. Repeat step 1.	-
2nd	No action required.	The door opens.	 The finger scanner lights up blue.

The system is in normal mode.

Deleting a user

Deleting a user will delete all fingerprints stored under their user number. It is not possible to delete individual fingerprints from a user.

Users are deleted via the main menu. To get to the main menu, enter the security code.

See Entering the security code, page 10.



The system displays the main menu.

Step	Action	Description	Display
1st		Press or until <u>du</u> is displayed.	
2nd		Press .	
3rd		Press or to select the user number. E.g. <u>3</u> .	
4th		Press .	

The user has been deleted. The system is in normal mode.

Demo mode makes it possible to attract the attention of visitors to trade fairs and in exhibition halls by means of finger scanner LEDs lighting up or flashing and relays switching.

Demo mode

Demo mode is executed via the main menu. To get to the main menu, enter the security code.

See Entering the security code, page 10.



Step	Action	Description	Display
1st		Press or until <u>dE</u> is displayed.	
2nd		Press .	
3rd		Press or to select the desired demo variant: <u>dL</u> = demo LEDs; <u>dr</u> = demo relays. E.g. <u>dr</u> . The LEDs light up and flash, and the relays switch.	
4th		Press .	

Demo mode has been executed. The system displays the main menu.

Calling the serial and version numbers

The serial (**Sn**) and version (**Us**) numbers of the control panel (**Cu**) and finger scanner (**Fs**) are called via the main menu. To get to the main menu, enter the security code.



See Entering the security code, page 10.

The system displays the main menu.

Step	Action	Description	Display
1st		Press or until In is displayed.	In
2nd		Press OK .	Sn
Sn:	No action required.	Go to step 3.	-
Vn:		Press .	Us
3rd		Press OK .	Cu
4th		Press OK . The serial or version number of the control panel is displayed.	80 01
5th		Press 6 or 3 times until you have read the entire serial or version number.	-
6th		Press ESC to return to the screen for selecting the serial or version number.	Cu
7th		Press .	Fs
8th		Press OK . The serial or version number of the finger scanner is displayed.	80 06
9th		Press 6 or 3 times until you have read the entire serial or version number.	-
10th		Press ESC three times to return to the main menu.	In

The serial or version number has been displayed. The system displays the main menu.



The system is reset to its default settings.

Settings are reset to the default via the main menu. To get to the main menu, enter the security code.

NOTICE

- All fingerprints are deleted irretrievably.
- The security code is set to 99.
- The control panel and finger scanner are no longer coupled together.
- The relay switching times are set to 3 s.



See Entering the security code, page 10.







The system displays the main menu.

Step	Action	Description	Display
1st		Press or until rr is displayed.	
2nd		Press OK .	
3rd		Press or to select the first digit of your code. E.g. 9 .	
4th		Press OK .	
5th		Press or to select the second digit of your code. E.g. 9 .	
6th		Press OK .	

The settings have been reset to the default and are in normal mode.

We are working to constantly improve our products and add new functionalities. Correspondingly, updates are made available for the finger scanner and control panel software. More information about this can be obtained from your dealer.

Error displays and troubleshooting

Display	Meaning	Remedy
	No data connection to the finger scanner.	Check the wiring and the power supply.
	99 fingerprints have been saved. The memory is full.	Delete some fingerprints.
	An incorrect security code has been entered 3 times. The system is locked for 30 minutes.	After 30 minutes, enter the correct code. The 30-minute lock will only count down if the power supply and data connection are present throughout.
	The finger scanner lights up red.	The finger was not recognized. Swipe the finger over the sensor again.
	The finger scanner flashes orange.	No bus connection to the control panel. Check the wiring or implement the device.
	The finger scanner flashes red/green.	The sensor of the finger scanner is soiled or broken. Clean the sensor.

If these suggestions fail to solve the problem, the system must be returned to ekey biometric systems GmbH to be checked. Please ship the equipment in suitable packaging. Improper packaging can lead to the warranty being voided.

Maintenance

The system is largely maintenance-free. The sensor surface is essentially self-cleaning due to repeated use (swiping of fingers). However, if the finger scanner becomes soiled, clean it with a damp (not wet), non-abrasive cloth. Q-tips, microfiber cloths, and glasses-cleaning cloths are suitable for this purpose. Cotton-containing materials, paper towels, tissues, kitchen sponges, damp dish towels, and kitchen roll are not suitable. Use clean water without adding detergent. Treat the sensor surface with care.

Disposal

Pursuant to Directive 2002/96/EC of the European Parliament and Council of 27 January 2003 on the sale, return and environmentally friendly disposal of electrical and electronic equipment (WEEE) supplied after 13/08/2005, electrical and electronic equipment is to be recycled and may not be disposed of with household waste. As disposal regulations within the EU can differ from country to country, please contact your dealer for further information as necessary.



Declaration of conformity

ekey biometric systems GmbH hereby declares that the product conforms to the relevant provisions of the Electromagnetic Compatibility Directive 2004/108/EC of the European Union. The complete text of the declaration of conformity can be downloaded from <http://www.ekey.net/downloads>.

Copyright

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