



RKDOORSYSTEMS

ekey Home Operating Instructions





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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

This manual forms a component of the product. Ensure that it is 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 machine 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.
-  Unauthorised 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 excluded.

Warranty and manufacturer's warranty

Our general terms and conditions apply as valid at the date of purchase. See 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.	



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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
Displayed value	Displayed values
<i>ekey home FS OM</i>	Product names
MENU ITEM	Menu items
	Buttons

Abbreviations and terms:

WM	Wall-mounted
FAR	False Acceptance Rate
FRR	False Rejection Rate
FS	Finger scanner
IN	integra
CP	Control panel
OM	Outlet-mounted
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 authorised 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



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Product description

System overview

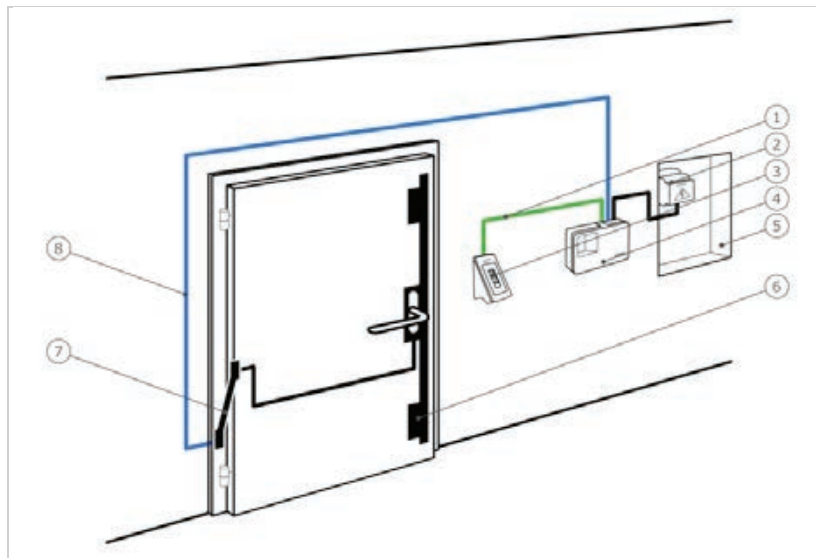


Fig. 1: Overview of the system

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

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.

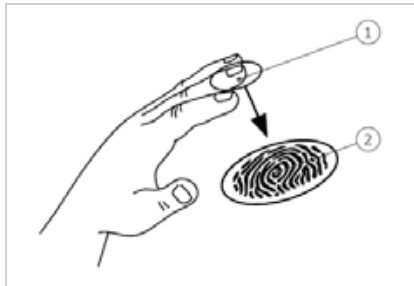
The system is primarily designed for opening house doors, apartment doors and garage doors in homes, businesses and limited industrial areas.



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Function of the finger scanner

Finger scanner



- 1 Front phalanx
- 2 Fingerprint

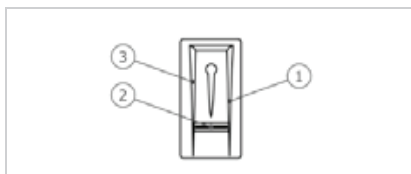
Fig. 2: Fingerprint

The finger scanner detects the fingerprint by means of a line sensor and subsequently 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

Controls	Function
Finger swiping	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 swiping

Correct operation of the finger scanner

Incorrect operation will impair the function of the finger scanner.

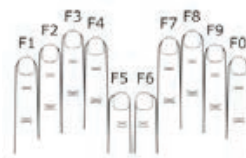
Step	Figure	Description
1.		Hold your finger straight, place it centrally between the guiding edges. Do not twist the finger.
2.		Place the joint of the front phalanx directly onto the sensor. Place your finger flat onto the finger swipe area.



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Step	Figure	Description
3.		Stretch out the neighbouring fingers.
4.		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

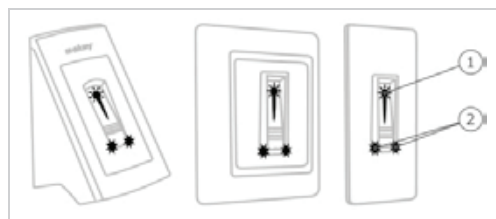


- Recommended finger numbering:
- The index, middle and ring fingers work best. The thumb and little finger work marginally or not at all.
- If the fingers are frequently wet, save the images with wet fingers.
- Children's fingerprints work from approx. 5 years of age.

Optical signals on the finger scanner

There are 2 types of LEDs:

- Status LED for operating status;
- Function LED for indicating the function of the overall system.



- 1 Status LED
- 2 Function LED

Fig. 4: Optical signals on the finger scanner

Control panels

The control panels are available in 2 makeups, each with 2 relay variants. You can only operate 1 finger scanner per control panel. Any finger scanner works with every control panel.



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Product name	<i>ekey home CP WM 1</i>	<i>ekey home CP WM 3</i>	<i>ekey home CP IN 1</i>	<i>ekey home CP IN 2</i>
Figure				
Mounting type	Wall mounting, 1 relay	Wall mounting, 3 relays	Can be integrated, 1 relay, 1 input	Can be integrated, 2 relays, 1 input

Table 2: Control panel makeups and variants

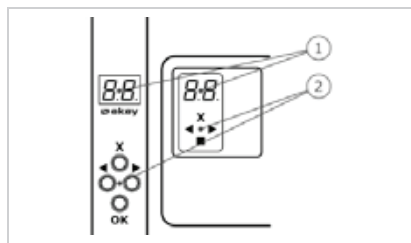
Function of the control panel

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

Control panel controls

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

Table 3: Control panel controls



- 1 Seven-segment display
- 2 Keypad

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





Button				
Designation	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



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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.

Technical specifications

Designation	Unit	Value
Supply	VAC/VDC	WM, IN: 8-24; OM: 12-24
Power input	W	Heating off: 1 Heating on: 3
Temperature range	°C	WM, IN: -25 to +70 OM: -20 to +70
Memory	Fingerprints	99
Safety	FAR FRR	1:10,000,000 1:100
Protection class	IP	WM, IN: 54 (front side) OM: 33/43/64 (depending on installation)
Speed	s	1-4
Operational lifetime	Finger scans	approx. 10 million

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



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Designation	Unit	Value	
		<i>ekey home CP WM</i>	<i>ekey home CP IN</i>
Supply	VAC/VDC	9-12	8-24
Power input	W	approx. 1	approx. 1
Relays	Quantity	1 (3)	1 (2)
Switching capacity	VAC/A VDC/A	42/2	42/2
Temperature range	°C	-20 to +70	-20 to +70
Protection class	IP	20	20
Digital inputs	Quantity	-	1 (potential free)

Table 6: Technical specifications: *ekey home control panel WM/IN*



Installation

ATTENTION

Mount and cable the product correctly before connecting power.
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
1.	Ensure safe installation of the devices. Close the covers.	-
2.	Connect the power supply to the mains.	 2 points light up on the display: Default setting.
3.	No action required.	 Status LED flashes orange: Default setting.



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

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

Changing the security code

See Entering the security code, page 10.



The system displays the main menu.

Step	Action	Description	Display
1.		Press < or > until SC is displayed.	5.8
2.		Press OK .	0.8
3.		Press < or > to select the first digit of the new security code. E.g. 2 .	2.8
4.		Press OK .	20.
5.		Press < or > to select the second digit of the new security code. E.g. 5 .	25.
6.		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.

Setting relay switching times



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NOTICE

When controlling an alarm system with relay time = 0 a power failure or reset (when an unrecognised 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
1.		Press or until rt is displayed.	
2.		Press OK .	
3.		Press or to select the relay number. Relay selection is available on control panels with more than one relay.	
4.		Press OK .	
5.		Press or to set the relay switching time. E.g. 10 .	
6.		Press OK .	

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

Storing fingers

The system enables a maximum of 99 fingers 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 WM 3* and the *ekey home CP IN 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.



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Step	Action	Description	Display
1.		Press or until <u>Eu</u> is displayed.	
2.		Press <u>OK</u> .	
3.		Press or to select the user number. If the user has already saved a finger, a point lights up on the right.	
4.		Press <u>OK</u> .	
5.		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.	
6.		Press <u>OK</u> .	
7.		Press or to select the relay. <u>od</u> = double relay (relay 1 + 2). Relay selection is available on control panels with more than one relay.	
8.		Press <u>OK</u> . The control panel is ready for finger enrollment.	

 Status LED lights up orange



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Step	Action	Description	Display
9.		Swipe the finger over the sensor. Repeat this step at least twice.	Status LED lights up green/All LEDs light up green.
			Status LED and left-hand function LED light up green.
			Status LED lights up red/All LEDs light up red.
			Status LED lights up green, function LEDs light up red.
			Status LED lights up green, left-hand function LED lights up red.
	or	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 recognised. Swipe the finger over the sensor again.	-
10.	No action required.	-	 Status LED lights up blue.
11.	No action required.	To enroll more fingers or users, start again from step 1.	-

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



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Use

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

Opening a door

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

The system is in normal mode.

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

Deleting users

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
1.		Press or until <u>du</u> is displayed.	
2.		Press .	
3.		Press or to select the user number. E.g. <u>3</u> .	
4.		Press .	

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

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.

Calling the serial and version numbers

See Entering the security code, page 10.





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Step	Action	Description	Display
1.		Press or until <u>In</u> is displayed.	
2.		Press .	
Sn:	No action required.	Go to step 3.	-
Vn:		Press .	
3.		Press .	
4.		Press . The serial or version number of the control panel is displayed.	
5.		Press 6 or 3 times until you have read the entire serial or version number.	-
6.		Press to return to the screen for selecting the serial or version number.	
7.		Press .	
8.		Press . The serial or version number of the finger scanner is displayed.	
9.		Press 6 or 3 times until you have read the entire serial or version number.	-
10.		Press three times to return to the main menu.	

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

The system will be 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.

Resetting the system to default settings



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.



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

You can now recommission the system.

See Implementing devices and establishing normal mode, page 10.



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.



Updating the software

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 security code. The 30-minute lock will only count down if the power supply and data connection are present throughout.
	Incorrect device coupling	Perform the coupling process again. One of the devices has been tampered with.
	Need update	The control panel requires a firmware update.



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Display	Meaning	Remedy
 Status LED lights up red.	The finger was not recognised.	Swipe the finger over the sensor again.
 Status LED flashes orange.	No bus connection to the control panel.	Check the wiring or implement the device.

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. Use clean water without adding detergent. Treat the sensor surface with care.

Dismantling and 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>.

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Step	Action	Description	Display
4.		Press	Status LEDs are off. The status LEDs light up red.
		The admin code was not recognised. The system was not reset. Enter the admin code from the beginning again.	-
5.	No action required.	-	Status LEDs flash yellow alternately.
6.	No action required.	-	The upper status LED flashes green.

The code pad has been reset to its default settings. The system is in normal mode.

Via the control panel

Resetting to the default settings is only possible with the *ekey home CP mini 1* and is initiated via the control panel. This can only be undertaken for the *ekey home CP micro 1* at the factory.

Step	Action	Description	Display
1.		Press and hold the button with the operating rod for at least 4 seconds.	Status LEDs are off.
2.	No action required.	-	Status LEDs flash yellow alternately.
3.	No action required.	-	The upper status LED flashes red.

The control panel and the code pad have been reset to the default settings. You can now recommission the system.



See Implementing devices and establishing normal mode, page 8.







Updating the software

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Error displays and troubleshooting

Display	Meaning	Remedy
 The status LEDs light up red.	The user code was not recognised.	Enter the user code on the keypad again.
 The status LEDs light up red.	The numbers in the required user code are all the same. E.g.: 1111, 3333.	Enter a new user code containing at least one number that is different from the others. E.g.: 1115, 3733.
 The status LEDs light up red.	The required user code is too short or too long. E.g.: 321, 987654321.	Enter a new user code with a minimum of 4 digits and a maximum of 8 digits. E.g.: 4321, 87654321.
 The status LEDs light up red.	An error occurred when entering menu items or values.	Carefully read the description of the required function again.
 The status LED lights up red on the right.	An incorrect user code has been entered 3 times. 1-minute or 15-minute system lock.	After the 1-minute or 15-minute lock, enter a correct user code. The 1-minute or 15-minute lock will only count down if the power supply and data connection are present throughout.
 Status LEDs flash yellow alternately.	No bus connection to the control panel.	Check the wiring or implement the device.

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.

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