

## BioKey - IR Modus with Remote Control

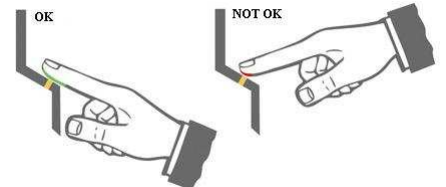
### Technical Data

Dimensions:	44x75x29 mm
Fingerprint Sensor: without Latentfinger	ATMEL Fingerchip™, Swipe Sensor
Operating Voltage:	> 2 Mio. Usings
Power consumption:	8 ~ 24V DC
Relay:	about 1 W
Operating Temperature:	24V DC 500 mA (max)
Storage Temperature:	-20 ~ +85 °C
Humidity:	-25 ~ +85 °C
IP Class:	< 95 % relative humidity
ESD Performance:	IP56 (Outdoor)
Speicherkapazität:	16kV
Fingerprint Enrollment (Time):	< 150 Fingerprints
Fingerprint Matching (Time):	about 1 sec
False Rejection Rate (FRR):	about 10 msec/Matching
False Acceptance Rate (FAR):	about 0,5%
Declaration of Conformity (CE):	0,00001~0,000001 (by FRR 0,5%) after EU-Guideline 2002/95/EG



### Instructions:

1. If the cabling is correct at least the blue LED lights up continuously.
2. **We recommend washing the hands before enrolling master/userfingers.**
3. After each sequence of recording a finger (dragging a finger over the sensor) **compulsorily** wait for a while (~3s) until the corresponding LED lights up to indicate that you can drag the next finger over the sensor.
4. Userfingers are those fingers meant for opening the door. Masterfingers are those fingers by which userfingers can be enrolled. In the delivery default condition (all 3 LEDs light up) **the first 3 enrolled fingers are automatically the masterfingers. Masterfingers should never be enrolled as userfingers.**
5. Dragging the fingers over the sensor – Tips
  - Drag your fingers uniformly and only with gentle pressure.
  - Make sure to drag as much as possible a large area of the finger lines over the sensor cell (see figure below).
6. Which finger should you use?
  - Fingertips with scars/injuries are unsuitable as userfingers; use therefore an alternative finger.
  - At least two fingers (each three times) per person should be enrolled. In case of an injury or bandage on a finger use the "stand-by finger" freely. Totally, up to 150 fingers can be enrolled.
  - If the number of persons is small it is worthwhile to start with more fingers per person, because most users tend to settle down to a preferred finger for identification only after a considerable time.





**Abbreviations and keyboard functions:**

- MF = Masterfinger
- E** = **Enroll**
- R1 = Relay1                      R2 = Relay2
- D** = **Delete**
- DA** = **Delete All (deletes all, including masterfingers)**
- H = Security (High), M = Security (Medium), L = Security (Low)
- RT = Relay switching time
- B = Block (to block IDs)
- UB = Unblock (to unblock IDs)

**I. All functions at a glance (MF = Masterfinger)**

- ❖ We recommend washing the hands before enrolling master/userfingers.
- ❖ When using for the first time or after a power outage wait for about 3 minutes until the fingerprint sensor has reached the optimal temperature.

Function	Description	Procedure
Enroll masterfinger	To define administrative fingers	Delivery condition → Enroll 3x masterfinger
Enroll userfinger for Relay 1 and Relay 2	To scan userfingers, together with an ID	MF → <b>E</b> → ID → <b>OK</b> → Scan userfinger ..... → MF
Identification		Scan userfinger
Delete a userfinger	To delete individually through the ID	MF → <b>D</b> → ID → <b>OK</b> → MF
Delete all fingers (Reset)	To reset to initial status	MF → <b>DA</b> → MF
Set the security level	Security (high, corresponds to a 5-digit PIN code)	MF → <b>H</b> → <b>OK</b>
Set the security level	Security (medium, corresponds to a 4-digit PIN code)	MF → <b>M</b> → <b>OK</b>
Set the security level	Security (low, corresponds to a 3-digit PIN code)	MF → <b>L</b> → <b>OK</b>
Set the connecting time for Relay 1	Relay switching time: 1 s to 65 s	MF → <b>RT</b> → <b>R1</b> → digit(s) → <b>OK</b>
Set the connecting time for Relay 2	Relay switching time: 1 s to 65 s	MF → <b>RT</b> → <b>R2</b> → digit(s) → <b>OK</b>
Block IDs	Temporary blocking of users (e.g. guests)	MF → <b>B</b> → ID → <b>OK</b>
Unblock IDs	Unblocking users	MF → <b>UB</b> → ID → <b>OK</b>
Check ID	To check if an ID already exists	<b>OK</b> → ID → <b>OK</b>
Unblock the terminal	Exit the blocking mode	Drag 2x directly consecutively an enrolled finger (master or userfinger) over the sensor
Enroll userfinger for Relay 1	To scan userfinger, together with an ID for only Relay 1	MF → <b>E</b> → ID → <b>R1</b> → <b>OK</b> → Scan userfinger → MF
Enroll userfinger for Relay 2	To scan userfinger, together with an ID for only Relay 2	MF → <b>E</b> → ID → <b>R2</b> → <b>OK</b> → Scan userfinger → MF

## II. All functions in detail

### 1. Enroll masterfingers

(3 x masterfinger: 3-times the **same** or three different fingers)

The device must be initialized (red + green + blue LEDs light up continuously, otherwise see §5.)

- ✓ Drag the first masterfinger over the sensor, blue LED flashes for approx. 3 secs; wait, red + green LEDs go off briefly and light up again continuously.
- ✓ Drag the second masterfinger over the sensor, blue LED flashes for approx. 3 secs; wait, red + green LEDs go off briefly and light up again continuously.
- ✓ Drag the third masterfinger over the sensor, blue LED flashes for approx. 3 secs; wait, green LED lights up briefly on and off.
- ✓ When all 3 masterfingers are enrolled, the device will be ready for operation (only the blue LED lights up). Now, userfingers can be enrolled.
  - If during the enrolling operation a finger has been dragged but not accepted as masterfinger, then, the red + green LEDs continue to be on. In that case, repeat the operation to enroll the masterfinger. Timeout: 60 secs. Between each enrolling operation for masterfingers do not wait for more than 60 secs; otherwise the enrolling operation must be repeated.

### 2. Enroll userfingers together with an ID number

(Masterfingers must not be enrolled as userfingers.)

- ✓ The enrolling mode for userfingers is activated by **reading in a masterfinger**.
  - Red and green LEDs flash briefly.
- ✓ Press the **E** (Enrollment) button (below right) on the remote control.
- ✓ Enter an **ID** between 1 and 150 over the remote control.
- ✓ Press **OK** to confirm.
  - If the finger to be enrolled is to switch only one relay, press **R1** for Relay 1 or **R2** for Relay 2, before confirming with OK. If **none** of the relay buttons are operated, then **both relays** are switched automatically.
- ✓ Enrolling **one or more** userfingers (dragging over the sensor)
  - If the enrolling operation is successful the green LED lights up; if the quality is inadequate the red LED lights up. We recommend **enrolling individual userfingers 3-times** in order to optimize the rate of recognition. All fingers will be stored under the entered ID.
- ✓ The enrolling operation is completed by **reading in a masterfinger once again**.
  - Red and green LEDs light up briefly; it is possible to store several persons under one ID. But be forewarned that in the delete mode all those fingerprints will be deleted which are stored under a single ID.
  - If the enrolling operation is not completed within 10 secs after the last enrollment of a finger, the operation will be canceled without storing the previously enrolled fingers.

### 3. Identification

- ✓ Drag a userfinger over the sensor.
  - The green LED lights up if the finger is identified and the relay is switched on. The red LED lights up if the finger is not identified.

### 4. Delete individual userfingers

- ✓ The delete mode for userfingers is activated by **reading in a masterfinger**.
  - Red and green LEDs flash briefly.
- ✓ Press the **D** (Delete) button (below left) on the remote control.
  - Green LED flashes.
- ✓ Enter the **ID** of the userfinger to be deleted.
- ✓ Press **OK** to confirm.
  - Green LED flashes.
- ✓ The delete operation is completed by **reading in a masterfinger once again**.
  - Red and green LEDs flash briefly.

## 5. Delete all fingers (including masterfingers)

- ✓ Press the "Delete" button on the internal unit (Control Unit) for several seconds.
- ✓ The initial status is restored, and on the external unit the red + green + blue LEDs light up continuously.
- **Note:** There is another way to delete all fingers on the external unit (fingerprint reader). For this, the masterfinger must be dragged totally **3-times** consecutively over the sensor. After reading in the masterfinger 2-times the red LED starts flashing to indicate that the delete mode is being initialized. After dragging the masterfinger for the third time the delete operation is launched. The green LED begins to flash to indicate this. Finally, the device goes into the delivery default condition.
- **Note:** There is yet another way to delete all fingers (directly in front of the terminal): **Masterfinger->** Press the **DA** button (Delete All) on the remote control -> **Masterfinger**

## 6. Set the security level

- ✓ Press any of the **H/M/L** buttons, depending on your choice
- ✓ Press **OK** to confirm
  - **Button L:** Low security (corresponds to 3-digit PIN-code security)
  - **Button M:** Medium security (corresponds to 4-digit PIN-code security)
  - **Button H:** High security (corresponds to 5-digit PIN-code security)
  - Red and green LEDs flash twice briefly to indicate that the setting is done.
  - The on delivery default security level is set to **M**. The security level can be reconfigured at any time.

## 7. Set the relay switching time

- ✓ Press the **RT** button.
- ✓ Press the **R1** for Relay 1, **R2** for Relay 2 or the buttons **R1** and **R2** consecutively for both relays.
- ✓ Enter the digit(s) for the relay switching time in seconds (1 to 65 seconds)
- ✓ Press **OK** to confirm.
  - In the default delivery condition the switching time for both relays is set to 5 seconds.

## 8. Block IDs (temporary users like guests)

- ✓ Read in a **masterfinger**
- ✓ Press the **B** button
- ✓ Enter **ID**
- ✓ Press **OK** to confirm
  - All fingerprints stored under the entered ID are now blocked and will be rejected.
  - Individual IDs can be temporarily blocked without having to lose the enrolled fingerprints. They can be unblocked again later, and the person concerned need not be present to enroll his/her finger once again.

## 9. Unblock the IDs

- ✓ Read in the **masterfinger**
- ✓ Press the **UB** button.
- ✓ Enter the **ID**.
- ✓ Press **OK** to confirm.
  - All fingerprints of this ID are now unblocked again.

## 10. Blocked mode (Block/Unblock the terminal)

- ✓ **Blocking:** If a finger that has not been enrolled is dragged consecutively for 5-times over the sensor (red LED lights up), the module changes into blocked mode. This is to prevent unauthorized persons from gaining entry through indefinite number of attempts over a period.

- If the device is in blocked mode, this is indicated by the flashing red LED. The blocked mode is initially time-limited; in case of 5 more failed attempts the blocked mode gets extended correspondingly (Blocking intervals: 1 minute, 5 minutes, 30 minutes, 1 hour, thereafter continuous blocking)
- ✓ **Unblocking:** The blocked mode can be prematurely terminated by dragging an enrolled finger (master or userfinger) over the sensor **twice directly consecutively**.

### 11. Check ID (to check if a number/ID is allocated already)

- ✓ Press the **OK** button.
- ✓ Enter the ID to be checked
- ✓ Press the **OK** button again.
  - If the ID has been allocated already, both LEDs (red and green) light up.
  - If the ID is not allocated, only the red LED lights up.

ID	Person (Name)	Description (Thumb Right / Index Finger Lefet .....
1		
2		
3		
4		
5		
ID		
6		
7		
8		
9		
10		
11		
12		
.....		
150		