

Installation Instructions

Welcome to high5@home

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Introduction

Thank you very much for choosing "high5@home". We are sure that you have made a good choice and will enjoy this product!

Please read the operating instructions carefully before use to ensure trouble-free operation.

With the purchase of the BWO Systems AG «high5@home» you acquired the current, safest access solution on the market with the highest quality and efficiency.

Installing the software becomes a breeze with our app for your device (mobile phone or tablet). Additional to the access of the "high5@home" app, you receive a sensor case "reader for your key (your hand)" as well as a "small computer", called the "Controller", which manages and stores the accesses and users.

The advantage over other access solutions is literally in your hands. "high5@home" uses your unique hand- vein structure as a key that cannot be copied. With the infrared camera, included in the sensor case, you can save up to 30 different people and store them as authorized persons in the "Controller" via our app.

Please note that our palm-vein structure continues to change up to the age of eight years. Afterwards it remains the same, age independent. Therefore, it is possible that children under the age of eight whose hand-vein-recording is older may not be recognized immediately. This means that they must try several times to open the "Door". A new palm-vein-registration of the kids' hand improves recognition.

The benefits of palm-vein biometrics are both increased security due to extremely high counterfeit protection and the contactless and variable use. Not to mention the fact that you will never lose your keys again, because you do not need them anymore.

The operating instructions show step by step how to prepare our solution and use it via app. For proper installation, we recommend that you obtain advice from an electrician or security-systems installer or let them do the installation.

Areas of Application

The "high5@home" solution can be used up to four of the following applications:

- Entrance door
- Garage
- Mailbox
- Vault
- · Wine cellar
- · Shoe cabinets
- Fitness room
- Others

The "high5@home" solution is intended for a maximum use of four application areas. An application is, for example, the opening of a door or garage. If you would like to cover several application areas with one system, please contact us. For this purpose, we offer the HighFiveForAccess solution.

Example:

You install the sensor case with the sensor at your car garage. The controller is located in the garage or house and is connected to the following four access points:

- 1. Garage door
- 2. Mailbox
- 3. Fence gate at the entrance to the property/house
- 4. Entrance door to the house

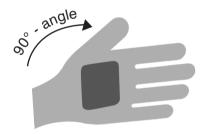
Now you can connect the four different access points to the respective hand position as follows:



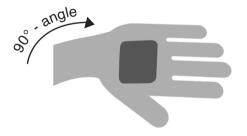
 Garage door opens via: right hand (finger pointing upwards)



3. Door at the entrance to the property / house opens via: **left hand** (fingers pointing upwards)



Mailbox opens via: right hand (fingers pointing to the right)



4. Entrance door to the house opens: via **left hand** (fingers pointing to the right)

To use the four different «keys», you must also create four users in the app for the respective accesses - e.g. «Susanne garage», «Susanne front door», «Susanne mailbox» and «Susanne fence door» (see «System configuration» on page 12).

Package contents



1) 1 x Controller

Stores and processes users' data. The controller is a small "computer" that switches the lock and should always be placed in a protected area (inside the house, behind the fence, in the safe, in a cabinet, etc.). The controller sends a signal to the electric lock that releases the lock. This impulse is transmitted by an electric cable to the release mechanism.



2) 1 x Sensor

Reads the palm-vein structure and sends the appropriate result encrypted to the controller for processing.



3) 1 x USB cable (5m)

For the power and data supply of the sensor (see «Connector pin assignment» page 25).



4) 1 x LED cable (5m)

To control the visual and acoustic signaling on the sensor (see «Pin assignment» page 25).



5) **App**

The high5@home app can be downloaded from the respective app store.

Hardware installation

Follow the instructions below to set up your «high5@home» system into operation.

Defects caused by faulty or incorrect installation are excluded from the warranty.

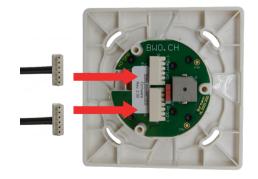
The USB cable must not be interrupted and must continuously connect the sensor to the controller.

Preparation of the sensor case for installation and for connection to the controller

At the sensor case, remove the round, metal mounting plate and turn the sensor case to the back side.



Now take the enclosed cables and plug the white cable ends of the two connecting cables into the corresponding (5-pin or 6-pin) white Molex socket. Push them all the way in until they are firmly seated. (see "Pin assignment") page 25).



Install the mounting plate back on the sensor case.



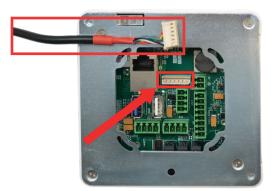
Instructions for connecting the controller to the built-in sensor case

(Please make sure that the controller is screwed onto the mounting plate. The mounting plate is mounted on an inlet box in the protected area before installation. Details on the controller can be found at: www.high5athome.de in the "Tutorials" section).

Now take the controller and place it on its closed side so that the open side is visible. Connect the USB cable to the blue USB socket inside the controller.



Connect the LED cable (signaling cable for the LED lights on the sensor) to the controller at the white socket.



Connect the supplied power cable (2-pin plug) to the electrical connection of the controller.



Your wiring should look like this:

Three cables are now plugged into the controller. Two of these go to the sensor case and one to the 12-volt power supply.



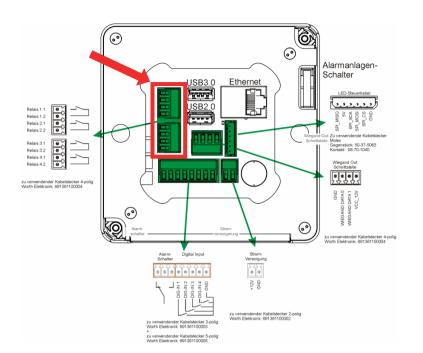
Now wire the relay(s) to your door circuit. For this you need a power cable, which transmits the impulse to the door / gate etc. This cable is usually supplied with the door and it is a low-voltage cable.

Important: The lock or "latch" in the door leaf or door frame must be supplied with power!

The relay itself does not supply power.

A tip for experts! The controller is supplied with 12 volt power. If the lock requires a voltage of 12 volts, current can be diverted directly to the relay from the power cable leading into the controller. This requires appropriate electrical knowledge and the right accessories.

IMPORTANT!!! The power supply to the controller must not be interrupted! Please consult your electrician regarding the power supply of electronic doors and garage doors and any other entries.



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Connect the power cable of the controller to the power supply.



Finally, to get your system up and running, connect the controller to the power supply.

- Plug the power supply into the socketoutlet (220V).
- The sensor case should now light up and beep to confirm.

Setup the controller via "high5@home" app

Via charging cable

Connect your phone with your smartphone charging cable (USB to Lightning, USB-C, Mini USB, etc.) and the controller. The USB plug is connected to a free USB slot on the controller.



Via bluetooth (optional)

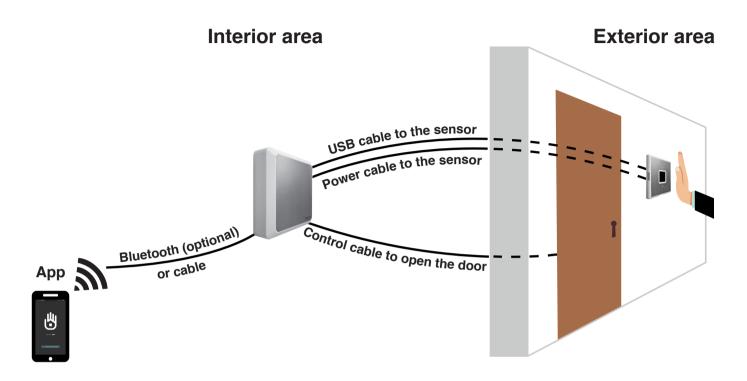
An alternative for a wireless connection can be found in the use of a USB "bluetooth dongle", which you can buy from BWO Systems AG in the store (www.high5athome.de).

The "bluetooth dongle" is then connected to the white USB port instead of the cable on the controller's circuit board and is also no longer removed. A reboot of the controller must be performed after the "bluetooth dongle" has been plugged in subsequently.



BWO USB-bluetooth-dongle

Implementation diagram



System configuration

Follow the instructions below to configure your "high5@home" application.

Preparation on your smartphone / tablet

 The "high5@home" app requires a current Android v5 / iPhone v10 smartphone operating system or higher.

Installing the application

Download the app from the respective store and install it on your smartphone / tablet.

Launch the application

When using the controller, the app automatically connects to the controller (if a USB cable is used for connection) - A bluetooth dongle for wireless operation can be purchased separately and connects the controller to the app via bluetooth.

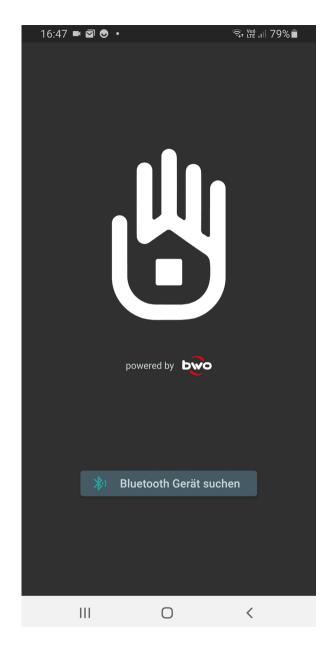
If you use more than one controller with bluetooth dongle, then the correct controller / dongle must be selected. You will find the respective "name" on the bluetooth dongle itself.

When using the USB cable you will not see a dongle when starting the app.

First access with the smartphone

When accessing the controller for the first time with an unknown smartphone, the smartphone must first be registered on the controller.

To do this, you must enter the serial number of the controller when prompted by the app. This registers the connected smartphone as a known device on the controller.



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Create a new user

Switch to the user administration

The users are created first, so that their hand can be assigned to them later as a key.

- 1. Click the Plus button to create a new user.
- 2. Enter a name

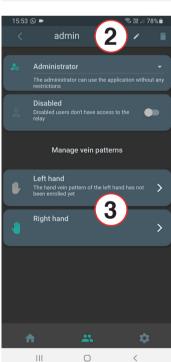
For example "admin" or "DHL driver Michael". If a user is to manage four different accesses with the controller, a hand position for each specific access must be created (see "Areas of application", page 3).

If several relays are assigned to a single handposition, they are all operated at the same time.

Capture vein-pattern

3. Tap the respective hand icon of the user and record the desired palm vein pattern (see also "Hand enrollment", page 15).





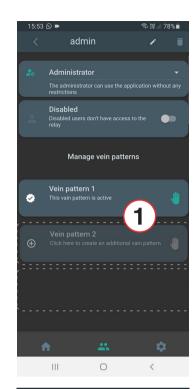
Hand enrollment

1. Tap the desired hand vein pattern that is to be detected. (You have the possibility, if a person is not always recognized well, capture a 2nd or 3rd palm vein pattern of the same hand. However, this should only be done for persons who definitely have regular rejections during recognition. Normally, only one palm vein pattern per hand should be read in).

2. Hold your hand over the sensor and follow the instructions.

If you would like to use two further accesses, as described in "Areas of application", then capture the hand, but this time in a 90° angled position.

(The icon of the hand in the app makes no difference for a capture and can be used as desired - it is only to be understood as a symbol).

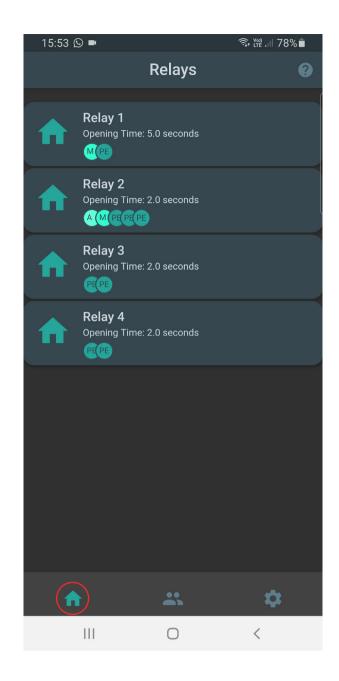




Assign a relay

Use the respective relay button to assign the desired access via controller. (The respective relay is connected with a cable to the desired access).

To do this, please switch to the circuit management (house icon).

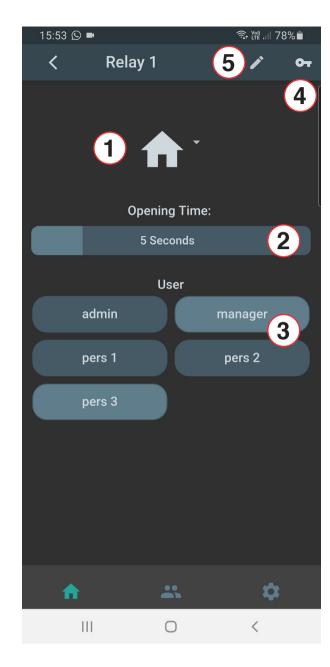


Make settings on the relay

- 1. Select icon.
- 2. Define switching time. The switching time determines how long the lock receives an opening signal (impulse) for actual opening up to 30 seconds.

(IMPORTANT!!! Please read the operating instructions of your installed lock for the required impulse time – it is possible that your lock is not designed for continuous loading, it might be damaged and no longer function properly if you supply it with power too long).

- 3. Grant access-rights (users that were previously created are displayed as buttons). If a user button is dark, the user is assigned. Light colored users are not assigned to the relay and therefore have no access.
- 4. Switch relay directly (with the key icon the selected relay can be switched directly, according to the switching time).
- 5. Edit name (to do this, tap the pencil icon and change the name of the relay).



Determine an administrator. Optional, but recommended

After registering and assigning users to accesses, it is advisable to assign an administrator to the app and the controller. This administrator can then open the app and, for example, create and manage new users / people (e.g., remove them from the app or deactivate certain users) and define user administrators.

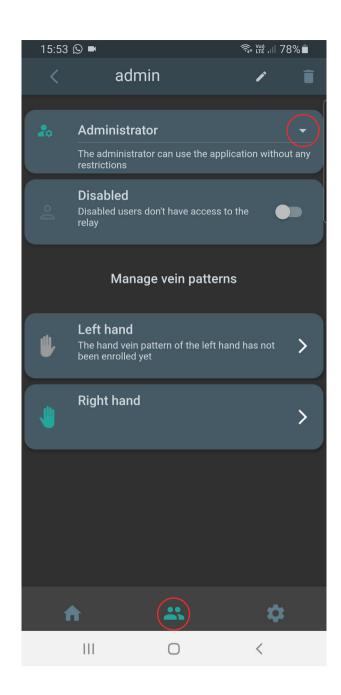
Access to the app has (after installation)

- anyone whose hand has been recorded if no administrator has been defined. Therefore, it is important to define an administrator who manages the user assignments.
- the person, who is recognized as an administrator or user administrator by the controller via the sensor. Even if they are disabled.

The controller also allows access to the app when:

- · No palm vein patterns are captured.
- The identified user was not recognized as an admin, but there is no other admin either.
- the recording can be assigned to multiple users, at least one of whom is an admin.

To do this, switch to the user administration and press the desired user. Select the role Administrator.



Determine a user manager. Optional

A user manager can control a relay to which he is assigned to.

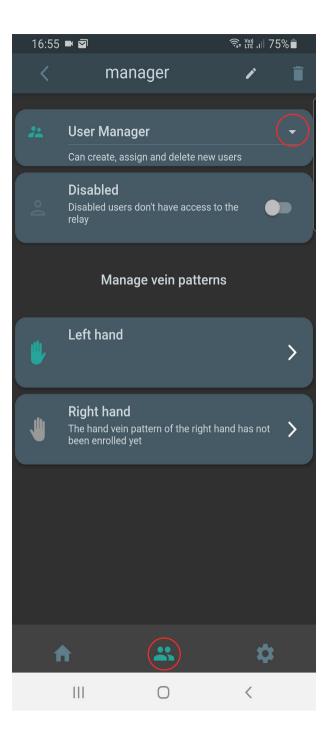
A user manager is allowed to:

- assign people to a relay.
- change the attributes of the relay.
- capture people.
- create new persons.
- edit people.
- · switch a relay directly via app.
- see only those relays he is assigned to.

A user manager is not allowed to:

- · assign roles to people.
- enroll and edit persons who are not exclusively assigned to such relays he is assigned to.
- disable persons assigned to other relays he is not assigned to.
- execute system commands.

To do this, switch to the user administration and tap the desired user. Select the role User administrator.



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Manage settings

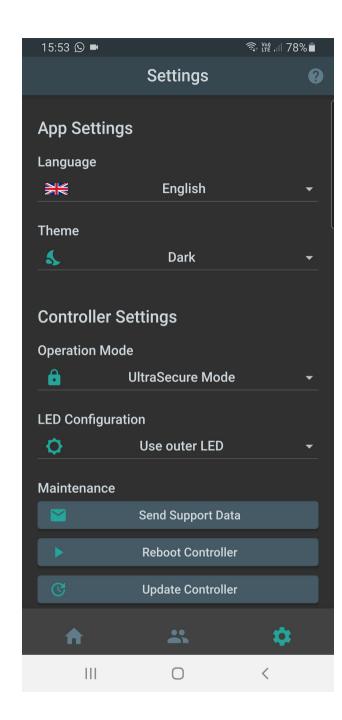
- Change language (German / English)
- Change theme (Dark / Light)
- Change the Operating Mode (UltraSecure Mode / Performance Mode) Attention: When changing the Operating Mode, any existing palm vein patterns are deleted.

UltraSecure Mode: Security ↑
Comfort ↓

Performance Mode: Security ↓
Comfort ↑

- LED configuration (outer or inner LED is on)
- Send Support Data (The log file of the controller is loaded and can be sent as .log file to our support. This requires a mail program on the smartphone).
- Reboot Controller
- Update Controller (Checking the controller software. If a newer version is available, the controller software is automatically updated upon confirmation.
- Updates should only be performed using the smartphone charging cable).
 Note: The controller software is

Note: The controller software is not the controller firmware.



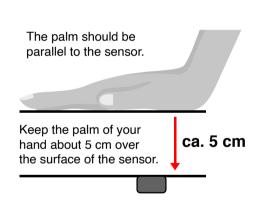
Personal notes

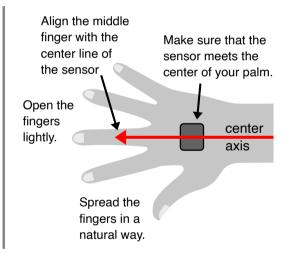
Operation of the palm vein sensor / alignment of the hand

Place the hand flat and relaxed on a flat surface (e.g. table) and hold it over the sensor. Make sure that the sensor meets the center of your palm. See illustration:



Distance to sensor





Usage of the sensor

Hold your hand over the sensor. If the hand is positioned correctly, the LEDs lamp(s)will signal "green". In addition a beep sounds. For further color codes, see «Meaning of the color codes» on page 23.

Appendix

Meaning of the color codes

The sensor has LED lights on each side and displays different colors when a hand approaches the sensor.

Colors during identification:

- Red: The user was not clearly identified.
- Green: The user could be clearly recognized.
- Blue: There are no pre-recorded palm vein patterns available.
- O White: The user has been recognised but is disabled.



Otherwise

- Purple: The controller is not connected to any device and ready for a new connection via bluetooth.
 - This color lights up after an error-free start of the system.
 - The LED turns off as soon as any user holds their hand over the sensor. This does not change anything to the state of the controller; a connection is also possible with the LED switched off.
 - This color also appears when an existing connection with a smartphone is disconnected.
- o White: The bluetooth connection was successful from the controllers' point of view.
- Flashes in green and yellow: A software or firmware update is being performed.
- Constantly yellow: The device is shutting down or being restarted.

Application

When using the "high5@home" solution, the controller always switches all configured accesses to "open" in parallel. It is not possible to program a delay. This means, for example, that the garage door cannot be opened first and then the front door after about two minutes. What you can set, however, is how long the garage door and the entrance door should remain open.

For example: If it takes about 15 seconds to get from the garage to the entrance, then you can open / switch the circuit for 15 seconds and have enough time to get into the house. (Attention! Please check if your lock can withstand a continuous load).

For a separate access, e.g. to the house, an additional "high5@home" solution is recommended, which controls e.g. the access to the house and possibly other elements in the house.

The distance between the controller and the sensor must not exceed five meters.

Pin assignment

The plugs supplied must be connected to the cables as follows.

Sensor cable (USB)

The USB-A cable and the 5-pin Molex connector are required:

(from left to right, holes are visible)

• Red	Plug contact 1
○ White	Plug contact 2
Green	Plug contact 3
Empty	Plug contact 4
Black	Plug contact 5



Cable for LED and sound

The cable with the 5 wires and both 6-pin Molex connectors are required.

(from left to right, holes are visible)

Empty	Plug contact 1
Red	Plug contact 2
Yellow	Plug contact 3
Green	Plug contact 4
○ White	Plug contact 5
Black	Plug contact 6
l	

Both plugs are wired the same way.







high5@home