

# Installation Manual



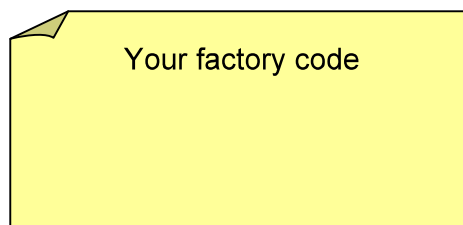


## **GENERAL ADVICE**



- These instructions are intended for trained electricians or specialists in security installations.
- The appropriate local installation specifications, directives and regulations must be followed. This particularly applies for VDE directives and regulations, e.g. German directive for electrical locking systems in doors in escape routes (ElitVTR), DIN VDE 0100, DIN VDE 0160, DIN VDE 0185, DIN VDE 0632.
- A primary side circuit breaker for the power supply circuit of the power supply units and a suitable protective device (fuse) must be provided on site.
- The mains power input and the outgoing power supply cable to the power supply units must be routed separately without fail. When routing the cables, avoid sharp edges and tension in the cables.
- For the operating and installation instructions and maximum permissible output current of the power supply units, refer to the enclosed data sheets.
- With central power supply units that supply several doors, a separate supply cable must be provided for each door. The maximum distance between the door and power supply unit must not exceed 50 m.
- Before starting any installation, repair, service or adjustment work, ensure that no voltage is applied to any of the mains adapters to avoid unintended switch-on.
- In case of any damage, caused by not following the instructions, warranty automatically expires. BKS is not liable for any damage caused by not following the instructions.
- With regard to safety and to product approval (CE), it is not permitted to change or alter the product in any manner without our authorisation.

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## 1 Technical Data

	Version for installation in door	In-wall/on-wall version
		
Dimensions of outside unit (WxHxD)	44x75x29 mm	80.5x80.5x30 mm (55x55x30 mm without frame)
Fingerprint scanner sensor	ATMEL Fingerchip™ line sensor	
Operating voltage	DC 8..24 V	DC 8..30 V, AC 8..12 V
Power consumption	approx. 1 W	1 W, in peaks 3 W
Relay output	via SECUREconnect	AC/DC 24 V, 5.0 A
Operating temperature	-20..+85°C	
Storage temperature	-25..+85°C	
Moisture resistance	up to 95% relative humidity	
IP class	IP 56 (outdoor use)	
Battery for programming device	CR2032	
Template accumulator	150 finger templates / 20 user codes	
Scanning duration template	approx. 1 s	
Identification duration template	approx. 10 ms per comparison	
Incorrect rejection rate (FRR)	approx. 0.5%	
Incorrect acceptance rate (FAR)	between 0.00001 and 0.000001 (with FRR 0.5%)	
CE declaration of conformity	in accordance with EC Directive 2002/95/EC	
Door opening behaviour (only version installed in door)	<p>If the door is opened for longer than 12 s, the sensor module is shut down. If these shutdown periods are brief, the fingerprint scanner sensor reaches its optimum operating temperature within 3 to 5 seconds. If the door has been open continuously for longer than 10 minutes, it takes between 15 and 20 seconds for the fingerprint scanner sensor to reach its optimum operating temperature. In this warm-up phase, the finger may not be detected (rejection with red LED). If this is the case, please drag your finger across the sensor again. The code keypad does not require a warm-up period following a shutdown. The saved fingerprints or door opening user codes (templates) are retained in the event of a power failure.</p>	

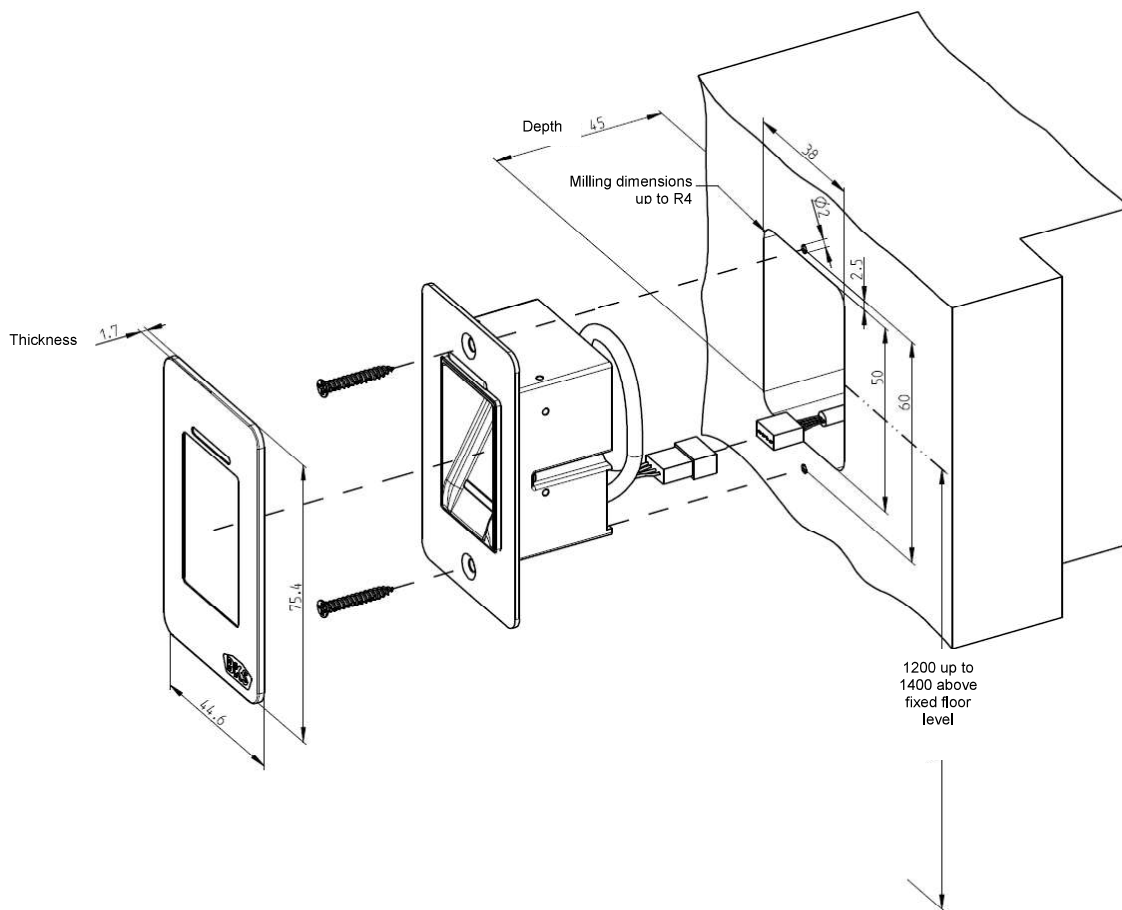
## 2 Version installed in door

### 2.1 Installation in timber/steel doors

In order to install the module, it is necessary to cut out a recess with the dimensions 38 x 50 mm and a depth of 45 mm. The recommended installation height of the module is between 1.2 and 1.4 m above finished floor level.

The connecting cable must be routed within the door leaf (e.g. through suitable grooves) to the installation cutout of the module.

The module is screwed into the door leaf from the front using the 2.2 x 19 screws provided. The decorative closing profile is then glued on. The adhesive strips required for this are on the inside of the closing profile.



## 2.2 Installation in aluminium/plastic doors

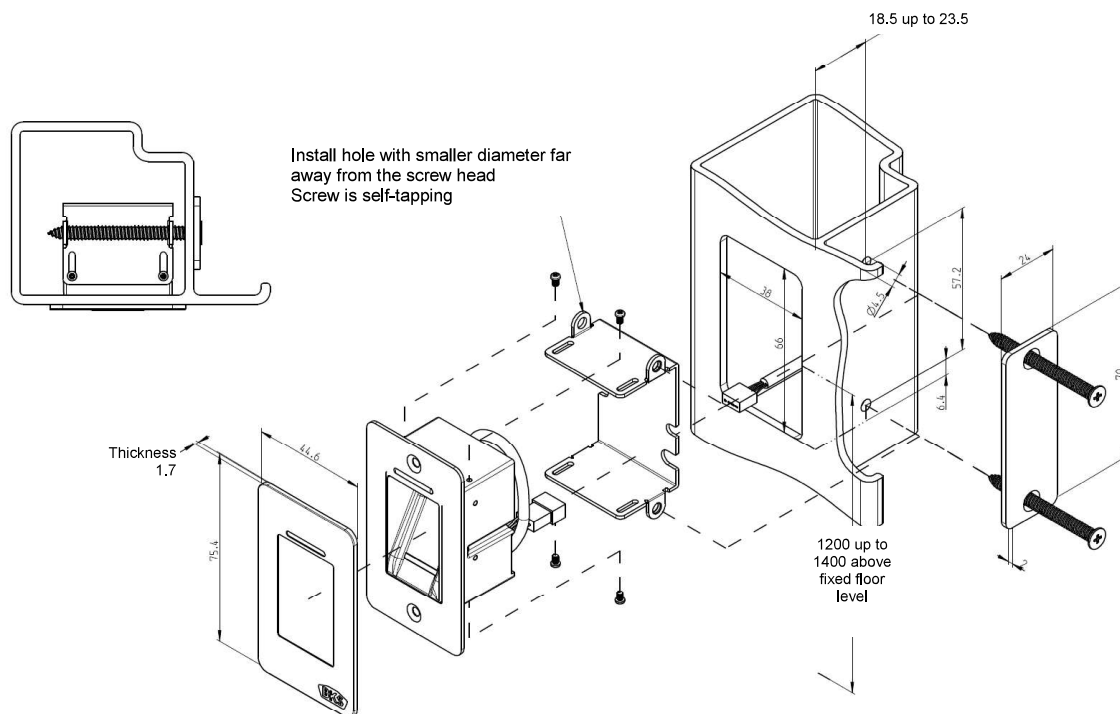
In order to install the module, a cutout with the dimensions 38 x 66 mm and a depth of 45 mm is required. The recommended installation height of the module is between 1.2 and 1.4 m above finished floor level.

The connecting cable must be routed within the profile to the installation cutout for the module.

The module is screwed sideways from the rebate into the profile using the enclosed 3.9 x 50 screws. It may be necessary attach the mounting frame to the module rotated through 180°. The fastening hole with the larger diameter must always face in the direction of the rebate.

The lateral fastening position from the front of the profile can be varied between 18.7 and 25.3 mm via the oblong holes of the fixing bracket.

Finally, glue on the decorative closing profile. The adhesive strips required for this are on the inside of the closing profile.



## 2.3 Installation in combination with Secury (A-opener)

In order to install the module, a cutout with the dimensions 38 x 66 mm and a depth of 45 mm is required. The recommended installation height of the module is between 1.2 and 1.4 m above finished floor level.

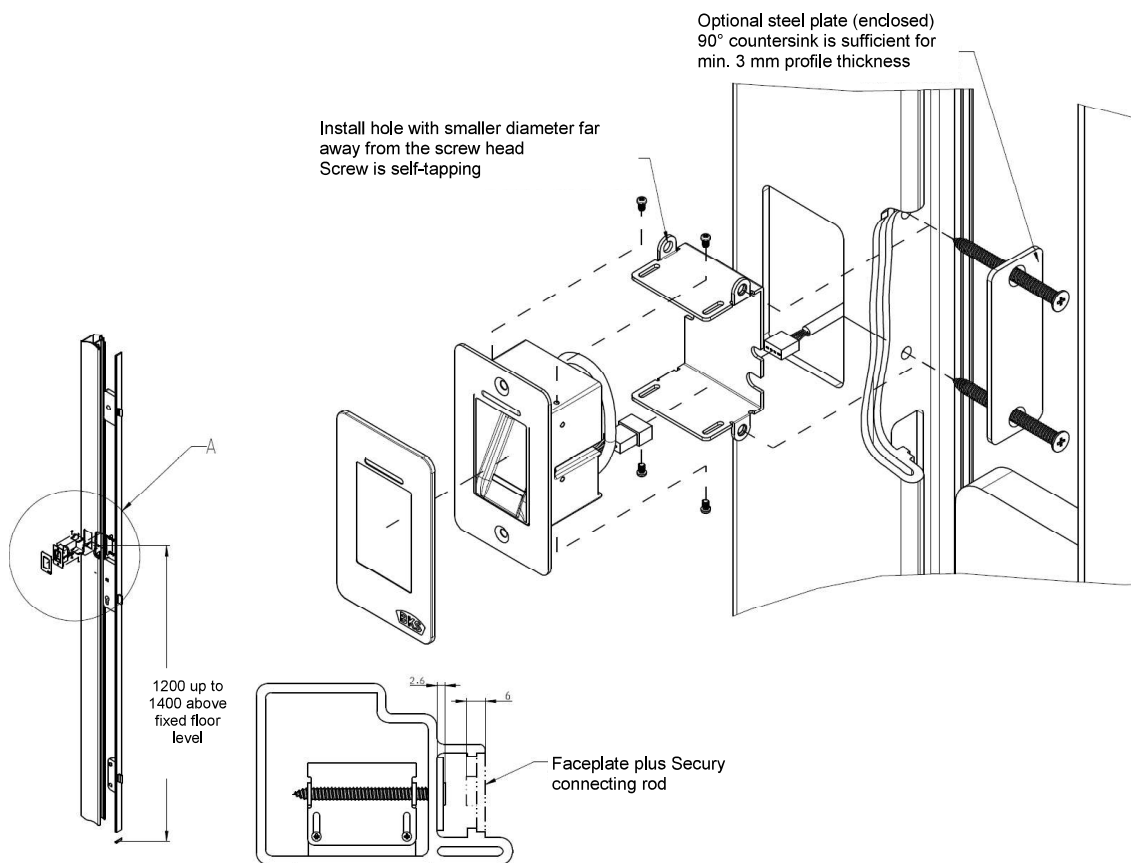
The connecting cable must be routed within the profile to the installation cutout for the module.

The module is screwed sideways from the rebate into the profile using the enclosed 3.9 x 50 screws. It may be necessary attach the mounting frame to the module rotated through 180°. The fastening hole with the larger diameter must always face in the direction of the rebate.

The lateral fastening position from the front of the profile can be varied between 18.7 and 25.3 mm via the oblong holes of the fixing bracket.

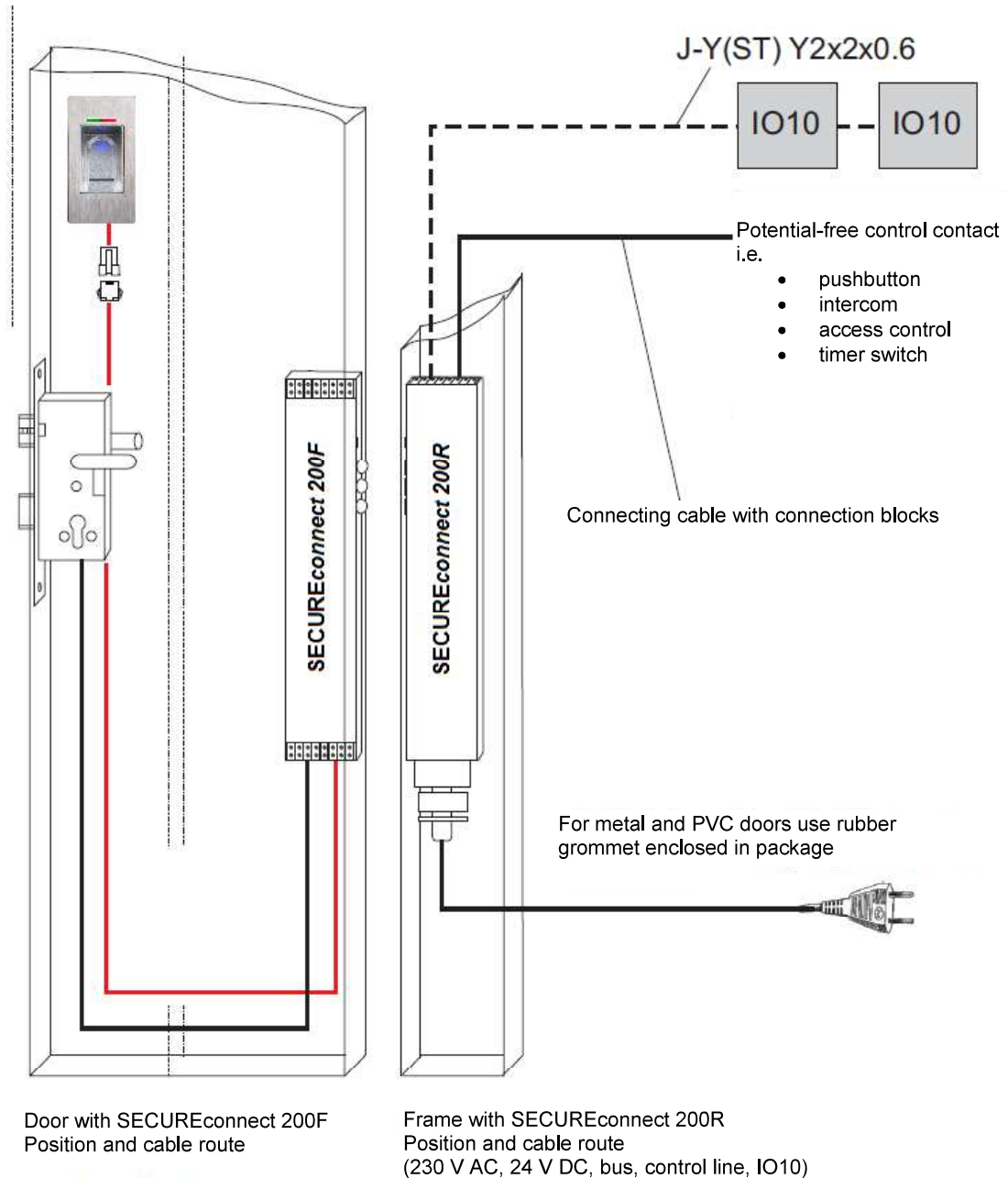
Be careful to ensure that the lateral fastening in the profile groove does not collide with the connecting rod or the Secury attachment points.

Finally, glue on the decorative closing profile. The adhesive strips required for this are on the inside of the closing profile.



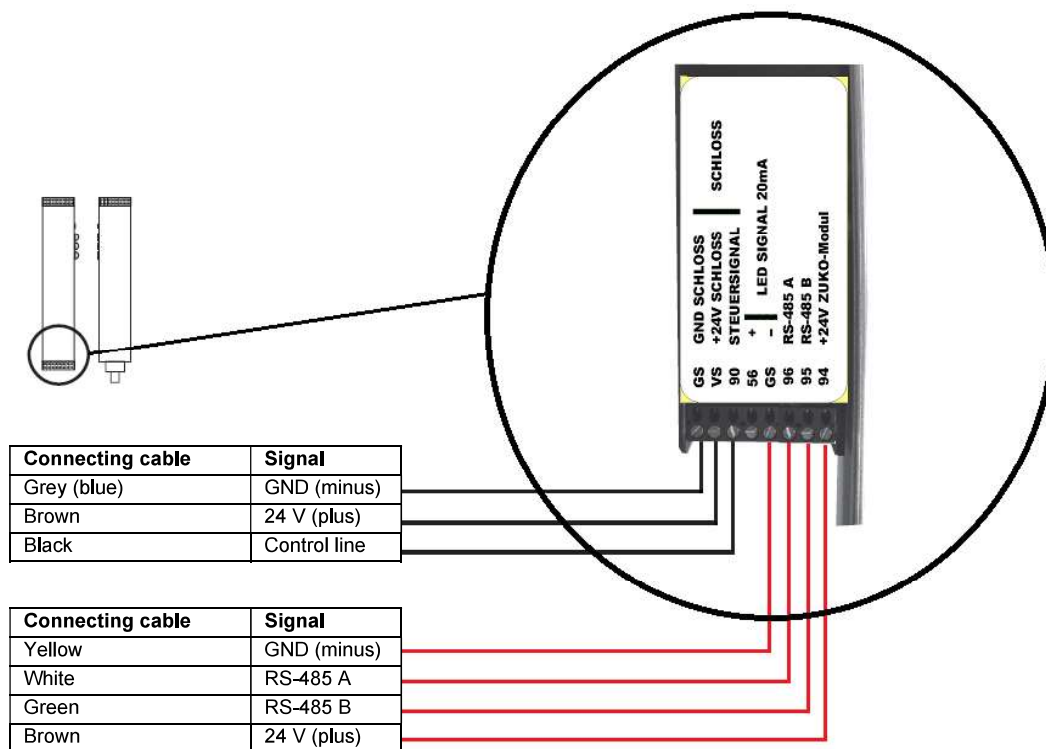
## 2.4 Routing of cable in the door

The connecting cable must be routed to the installation cutout for the module inside the door leaf (e.g. via suitable grooves or inside the profiles).



## 2.5 Cable routing of module

Please use the enclosed system cable to connect the module. The SECUREconnect and the access control module communicate via an encoded bus.



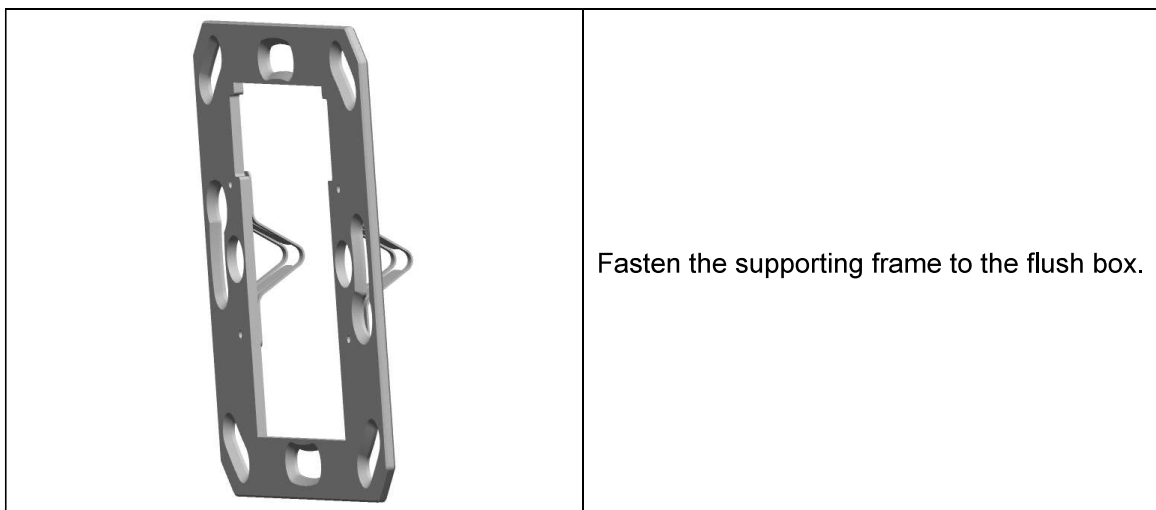
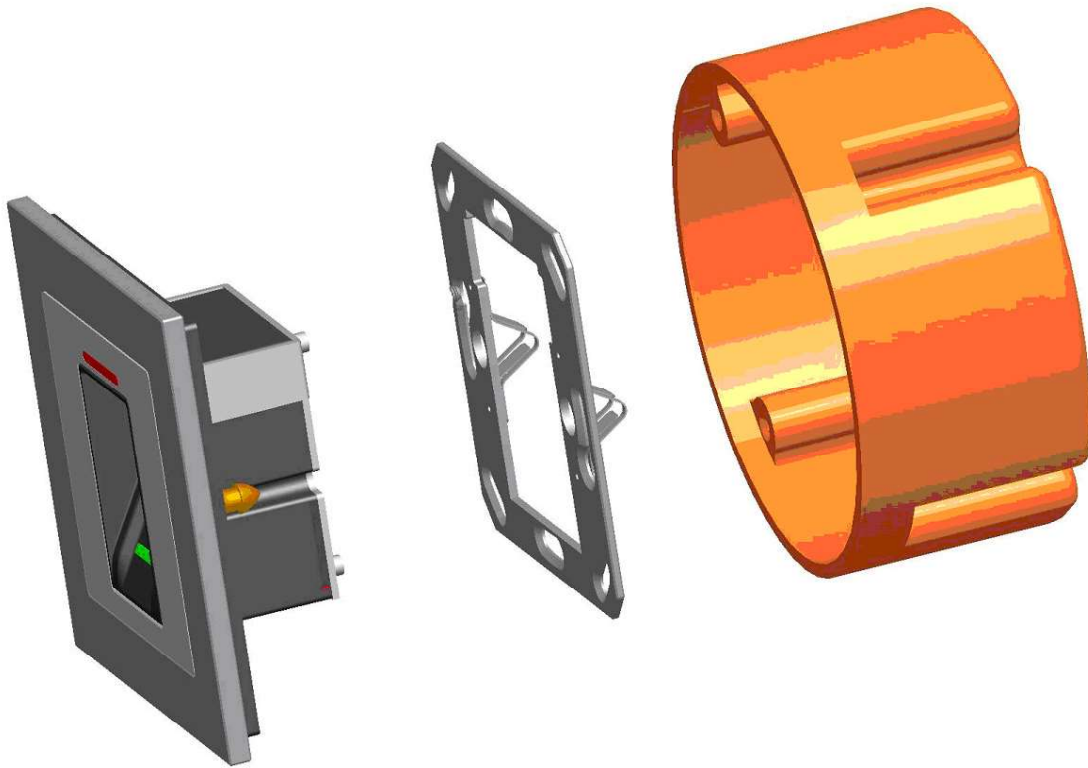
## 2.6 Pairing

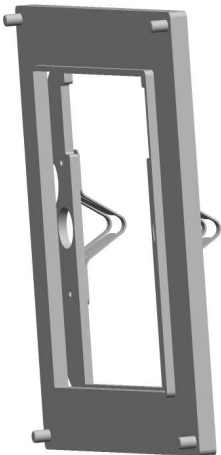
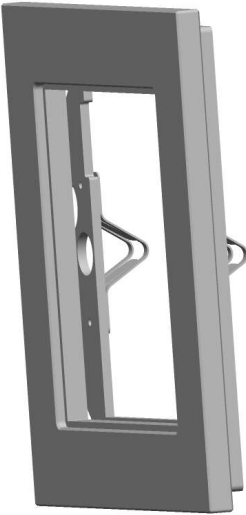
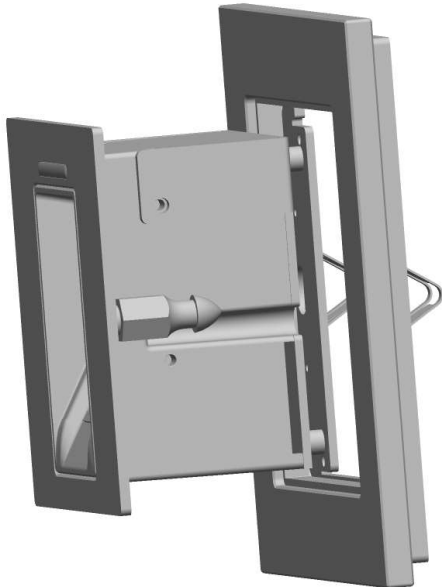
In the version with inbuilt profile the SECUREconnect and access control module are paired automatically. If the hardware is replaced, both components (SECUREconnect and ZUKO module) must be replaced as the pairing cannot be terminated.

### 3 In-wall/on-wall version

#### 3.1 In-wall installation

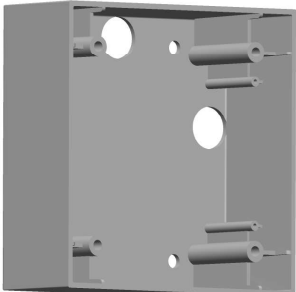
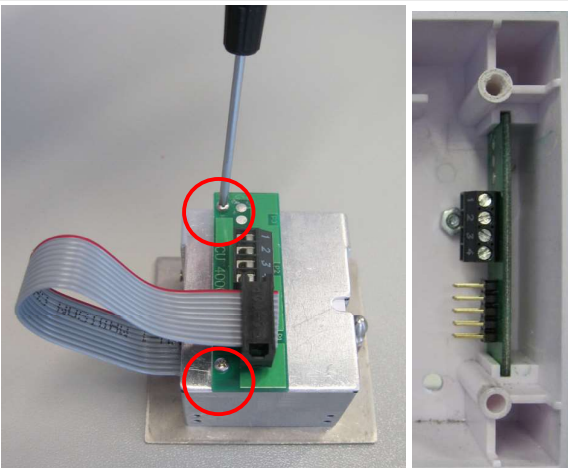

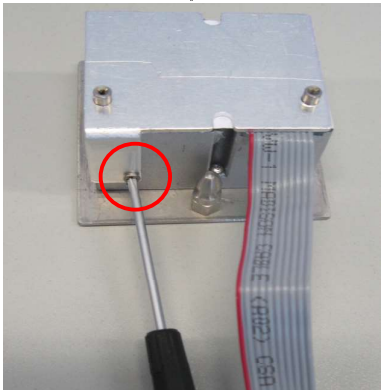
Standard flush boxes are used for the installation. We recommend an installation height of between 1.2 and 1.4 m above finished floor level.

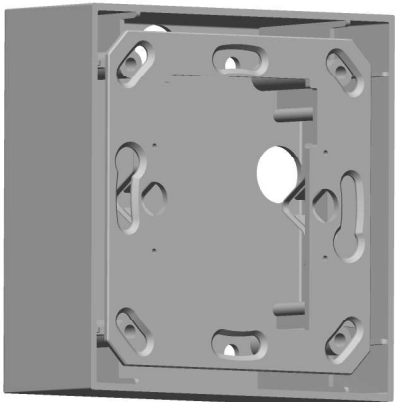
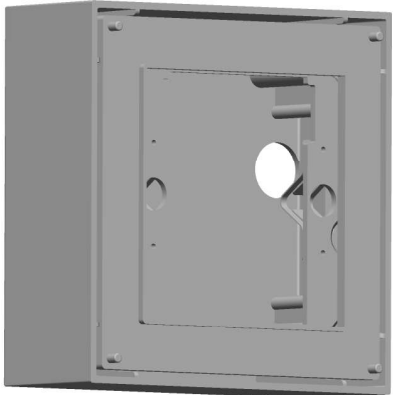
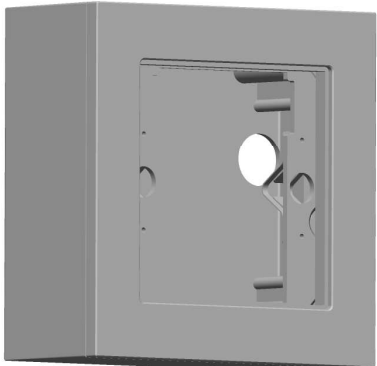
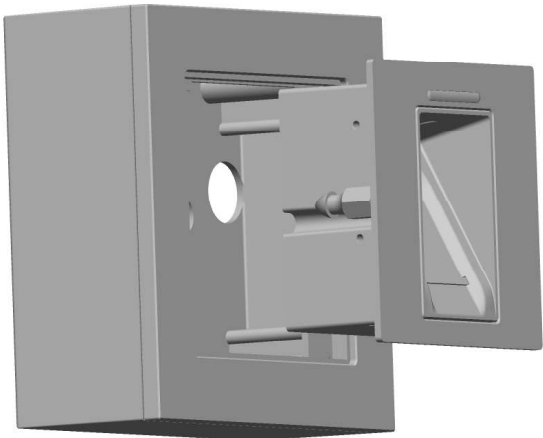
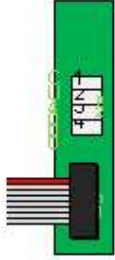


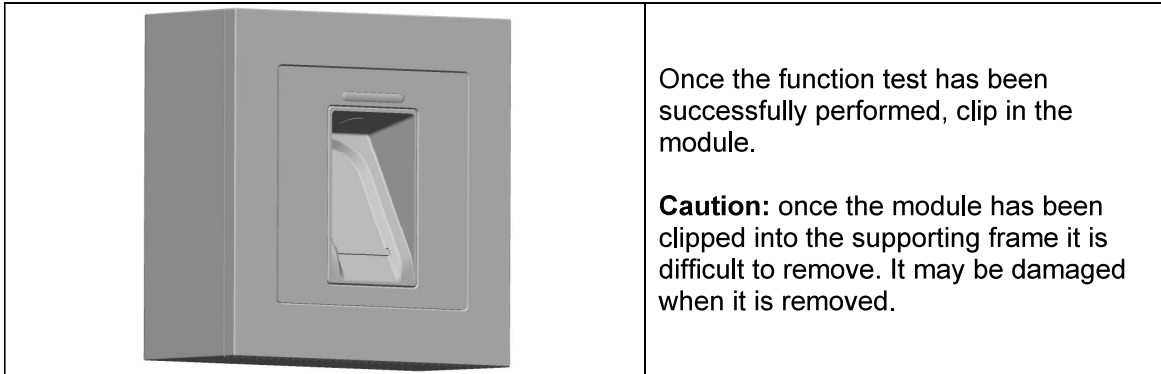
	<p>Plug the plastic spacer frame into the supporting frame.</p>
	<p>Position the stainless steel outer frame on the spacer frame</p>
	<p>Establish the electrical connection with the module and test the function.</p> <p>Finally, clip the module into the retaining tabs provided.</p> <p><b>Caution:</b> once the module has been clipped into the supporting frame, it is extremely difficult to remove. It could be damaged when it is removed.</p>

### 3.2 On-wall installation

We recommend an installation height of between 1.2 and 1.4 m above finished floor level.

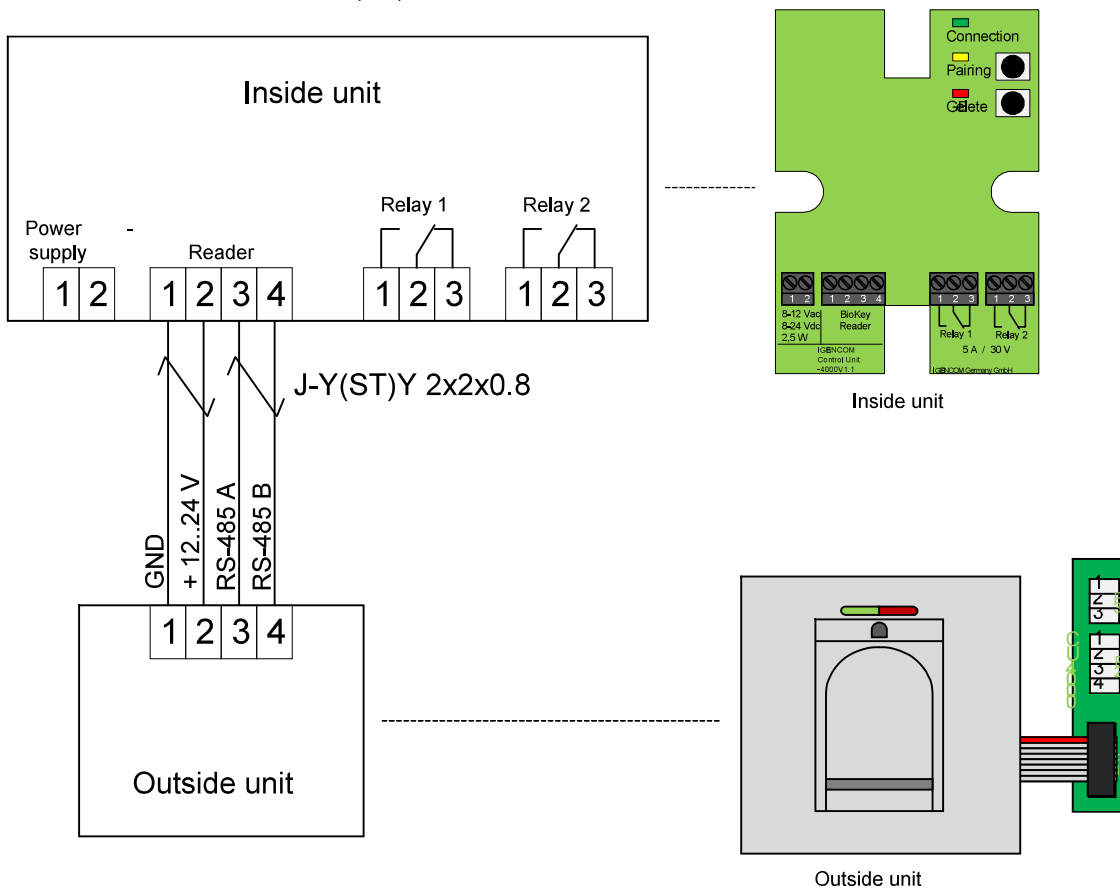
	<p>Fasten the on-wall housing. You can use the enclosed screws (3.5 x 25) and plugs for this.</p>
	<p>Remove the terminal board by undoing the two screws.</p> <p>Push the terminal board into the groove of the on-wall housing that has been prepared for this.</p>
	<p>Connect the supply line to the internal unit accordingly at terminals 1 to 4.</p>
	<p>Remove the back of the housing.</p> <p><b>Note:</b> the module will not fit into the on-wall housing with the back of the housing attached.</p>

	<p>Fasten the supporting frame using the 4 enclosed screws (3.5 x 25).</p>
	<p>Attach the plastic spacer frame.</p>
	<p>Position the stainless steel outer frame on the spacer frame</p>
	<p>Plug the flat ribbon cable of the outside module onto the terminal board.</p>  <p>The red mark on the flat ribbon cable must face in the direction of the terminal clamps.</p>



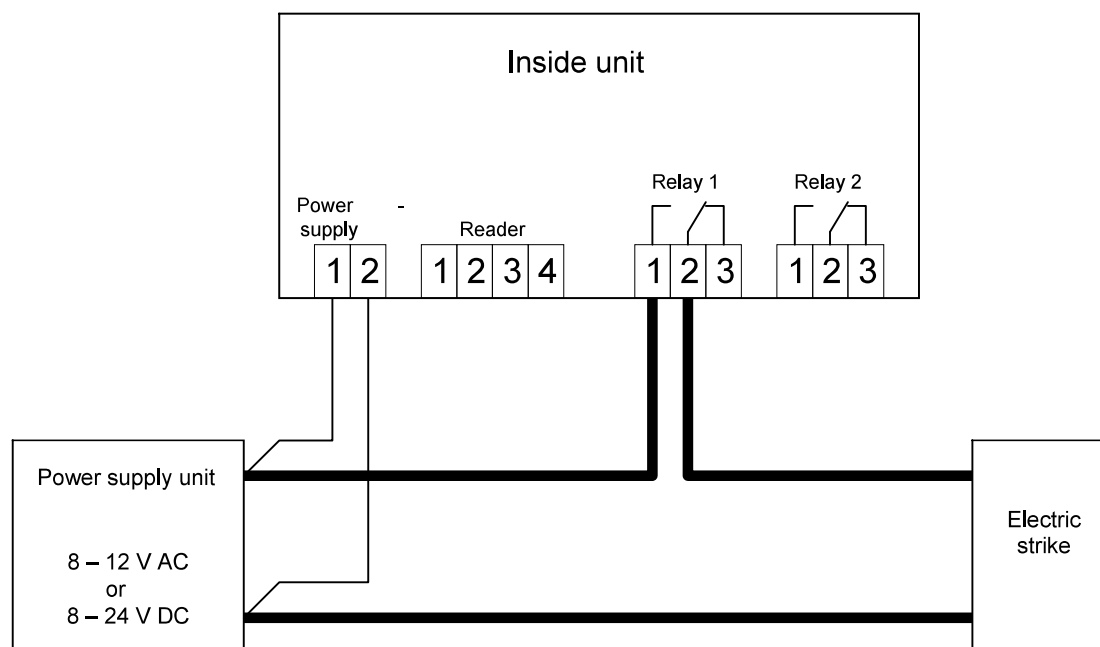
### 3.3 Electrical connection

The inside and outside units communicate via an encoded bus. We recommend you use the telecommunications line J-Y(ST)Y 2x2x0.8 to connect the inside and outside unit

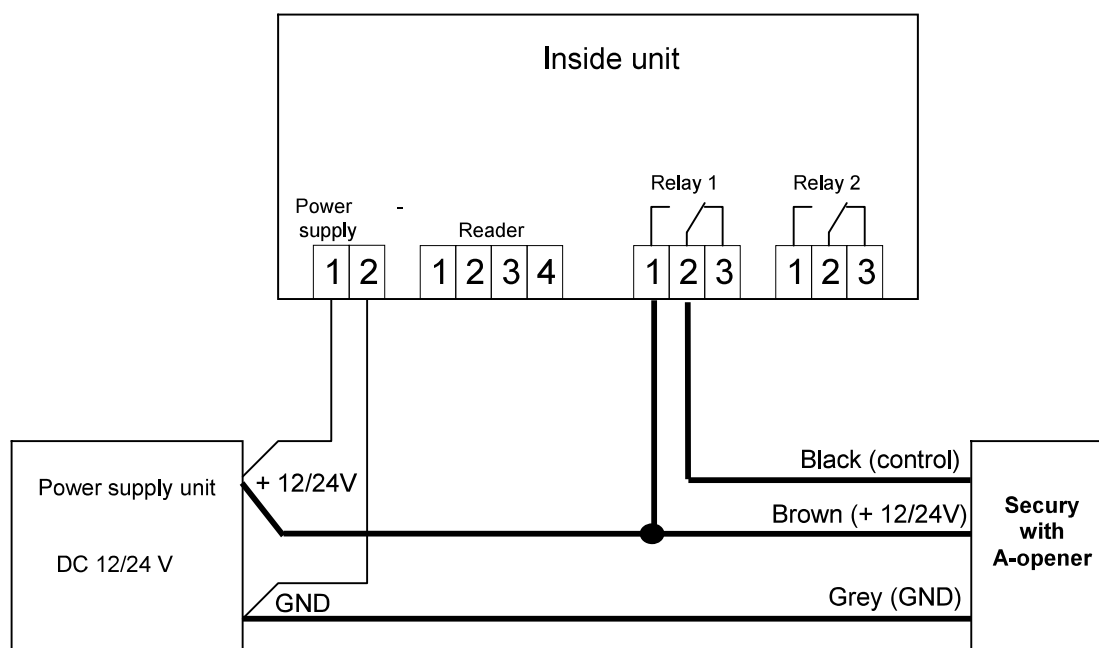


**Note:** when installing on the wall the flat ribbon cable must be correctly inserted (for orientation: **red line**, see drawing).

The inside unit has two relays with potential-free contact. Typical connection examples are shown in the following figures and depend on which version of the electronic opening systems is used (electric strike or motor-driven lock). The connection example for motor-driven locks applies for the GU A-opener.



Connection example for electrical door opener



Connection example for Security with A-opener

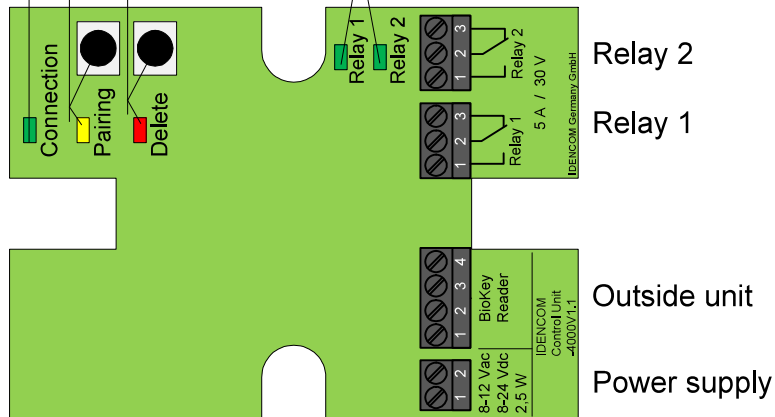
### 3.4 Displays and operating elements (inside unit)

"Connection" – LED: **lights up continuously**, if connection with the outside unit is **OK**

"Pairing" – LED: **flashes continuously**, if the outside and inside unit are **not yet paired**  
Push-button: terminates **pairing**

"Delete" – LED: **lights up** during a **deletion operation**  
Push-button: **deletes all fingerprints** (also master finger)

"Relay 1", "Relay 2": LEDs **light up** when the **relevant relay** is actuated

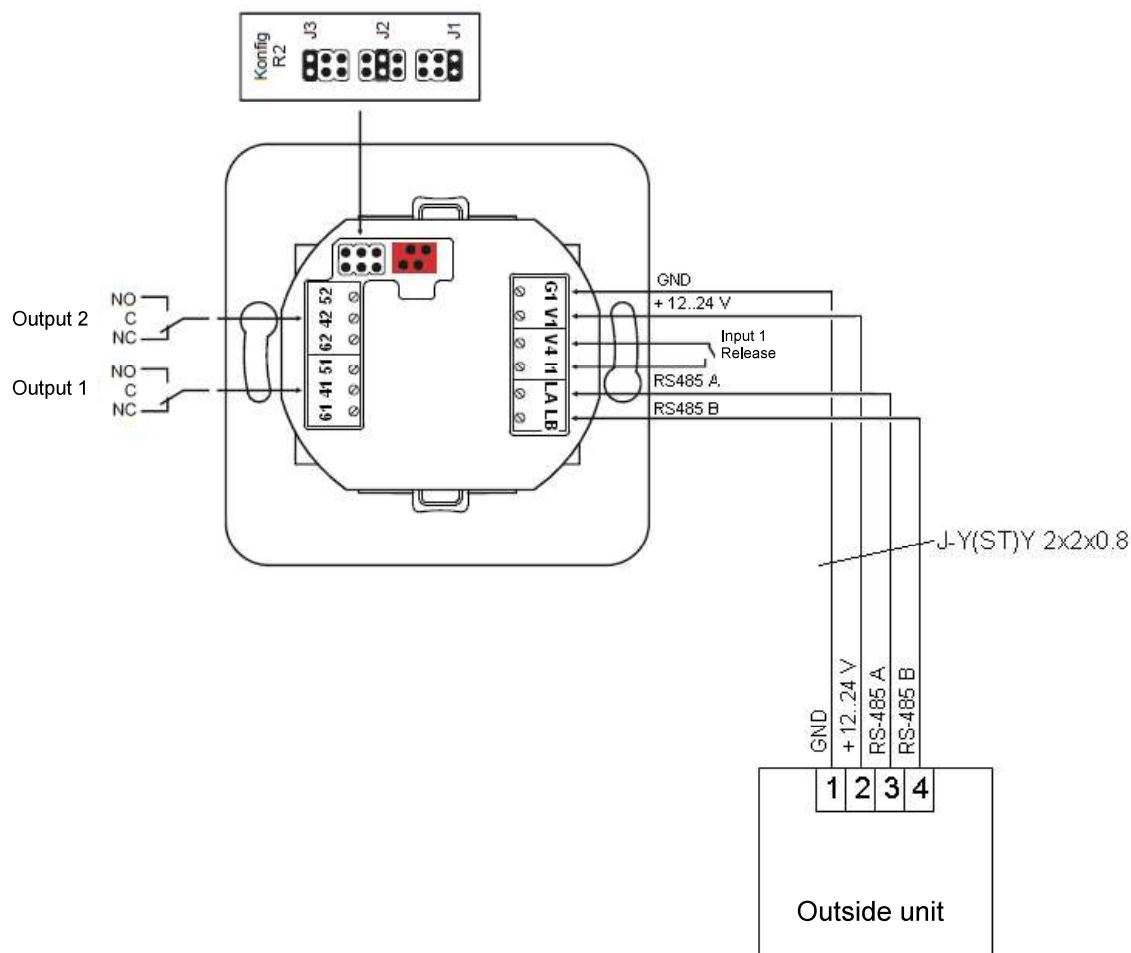


### 3.5 Pairing

The inside and outside unit of the in-wall or on-wall version are paired at the factory. If a hardware component is replaced, the pairing must be triggered again by pressing the "Pairing" button on the inside unit. The yellow LED goes out if the pairing is performed successfully.

### 3.6 Connecting the fingerprint scanner to an FMIO

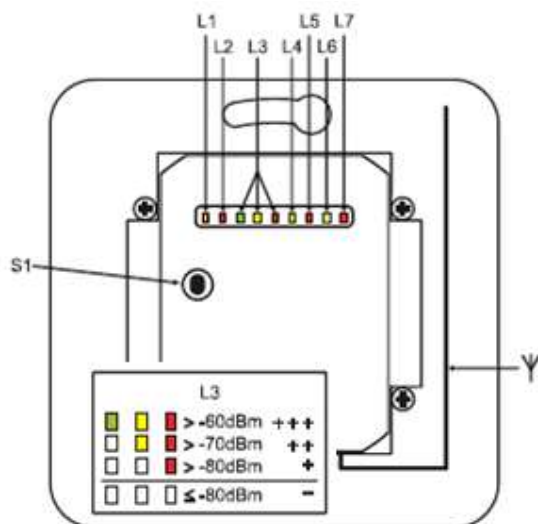
The outside unit can communicate directly with an FMIO (from firmware version 03.00) via an encoded bus. We recommend you use the J-Y(ST)Y 2x2x0.8 telecommunications line to connect the FMIO and outside unit



#### 3.6.1 FMIO output functions

	FMIO with radio-controlled lock	FMIO with Fingerprint scanner/ code keypad	FMIO with radio-controlled lock and Fingerprint scanner/ code keypad
Output 1	Status of latchbolt	Authorized access	Authorized access
Output 2 - J1	Status of cam	Unauthorized access attempt	Unauthorized access attempt
Output 2 - J2	Status of outside handle	-	Status of latchbolt
Output 2 - J3	Status of battery	-	Status of battery

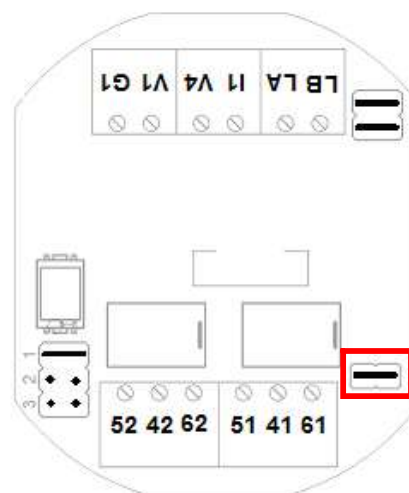
### 3.6.2 Displays and operating elements (FMIO)



S1	Push-button	Pairing push-button
L1	LED yellow	Status of control input On: control signal is present
L2	LED red	Status of configurable output 2 On: output active
L3	LED green/yellow/red	Display of radio signal strength
L4	LED yellow	Operation indicator On: operation
L5	LED red	Radio On: radio control active
L6	LED yellow	Door bus On: bus error Flashing: door bus active
L7	LED red	Status of output 1 On: output active

### 3.6.3 Pairing (FMIO)

Once a module has been connected to the FMIO, the so-called "pairing" occurs. From this point onwards no other module can be operated at the same FMIO. If this is necessary, the pairing can be reset. The housing cover must be opened to do this. Disconnect the module from the bus. Insert the jumper next to the terminal 51 41 61. Now press push-button S1 until an acoustic signal is heard. The pairing information has been deleted. If you wish to reset the pairing between the radio-controlled lock and FMIO, the jumper must not be plugged in. In this case press and hold down S1 to reset the pairing information of the radio-controlled lock.



## 4 Important functions

Important control functions for changing the factory code or resetting the module can be found below. For more functions, please refer to the operating instructions.

### 4.1 Resetting to factory settings via inside unit (in-wall/on-wall version)

With the in-wall or on-wall version you can trigger a reset to the factory settings by deleting all finger data or user codes by pressing the "Delete" button until the red LED lights up. The device is subsequently in the delivery condition (red + green + blue LEDs light up continuously).

**Caution!** The master code does not change when the factory settings are restored. If you have defined a separate master code, this remains valid following the reset.

### 4.2 Restoring the factory settings via the programming device (fingerprint scanner)

The fingerprint scanner module can be reset via the programming device provided. This deletes all finger data that have been saved.

Hold the programming device directly in front of the blue LED of the module.

Press the buttons DA -> CODE -> OK in this sequence to trigger the reset. Each time a button is pressed, the green LED lights up briefly to indicate this. If the green LED does not light up once a button has been pressed, repeat the input. For the factory code, refer to page 3 of this manual. The factory code can also be found on an adhesive label on the back of the programming device.

The device is subsequently in the delivery condition (red + green + blue LED light up continuously).



**Caution!** The master code does not change when the factory settings are restored. If you have defined a separate master code, this remains valid following the reset.

### 4.3 Changing the factory code (fingerprint scanner)

**Caution!** We always recommend you replace the factory code by your own master code.

You can change the factory code using the programming device by following the procedure below:








D-> E-> old CODE -> OK -> new CODE -> OK

The new master code must contain 6 digits.

**Caution!** The master code does not change when the factory settings are restored. If you have defined a separate master code, this remains valid following the reset.








#### 4.4 Deleting all user codes (code keypad)

You can delete all the user codes that have been saved up till now via the code keypad by using the following input sequence:

						
*	Enter the <b>master code</b> (this is the <b>factory code</b> in the delivery condition)	*	0	*	Enter the <b>master code</b> again	*

#### 4.5 Changing the factory code (code keypad)

**Caution!** We always recommend you replace the factory code by your own master code. You can change the factory code with the code keypad using the following input sequence:

						
*	Enter the current master code (this is the <b>factory code</b> in the delivery condition)	*	1	*	Enter the new <b>master code</b>	* <i>If the change was successful, the red and green LEDs flash for roughly 2 s</i>

**Caution!** The master code does not change when the factory settings are restored. If you have defined a separate master code, this remains valid following the reset.



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