

DRIVE

SIEGENIA access control systems

IO module
IO module smart

Window systems

Door systems

Comfort systems

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1 About this documentation

1.1 Read instructions

Please read these instructions carefully before you begin the assembly work. Observe the notes in Chapter 2 "Safety", in order to prevent personal injury or malfunctions.

These instructions are an integral part of the IO module/IO module smart and must be accessible to the specialist personnel at all times.

1.2 Producer

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Please contact your contractual partner in case of complaints or service requirement.

1.3 Target group

This documentation is addressed exclusively to specialist companies. All work described in this document is to be performed only by experienced professionals with training and practice in the assembly, as well as the commissioning and maintenance of electromechanical components.

Work on a 230 V AC mains power supply may only be performed by a qualified electrician.

1.4 Applicable documents

Prior to the installation of the IO module/IO module smart, it is essential to observe all assembly and operating instructions that are enclosed with other (optional) components.

1.5 Symbols used

The following pictograms are used in this document:

	general warning symbol
	useful information or advice
	Continue reading the instructions at the corresponding point
	Clock timer
	Intercom system
	Burglar alarm system
	Lamp
	Smart Home
	Door open

1.6 Dimensions

All measurements are given in mm.

1.7 Other types of presentations

Below is a list of symbols used in these instructions and their meanings:

- items of text following this marker are found in lists.
- Items of text following this marker are found in subordinate lists.
- Items of text with this marking in front of them are instructions that must be followed in the specified order.

Cross reference

- () A cross reference in the flow text is enclosed by brackets.

2 Safety

2.1 Intended use

- The IO module/IO module smart serves as an interface for electromechanical locking and unlocking systems (e. g. A-opener, GENIUS A and GENIUS B/ Panic) and as a switching module for the SIEGENIA access control systems for the analogue control of third-party drives.
- The IO module/IO module smart is intended for indoor use (IP20) with a room temperature of 0°C to 45°C and is either installed in suitable flush-mounted boxes or surface mounted in approved branch boxes.
- All assembly and electrical installation work must be carried out according to our assembly instructions.
- Use the IO module/IO module smart only when it is in a technically sound condition.
- Repair of the IO module/IO module smart is not permissible. The IO module/IO module smart must be replaced in case of faults.

2.2 Improper use

- The IO module smart must not be installed in a metal casing, as this could lead to shielding of the WIFI signal.
- The IO module/IO module smart must not be used in event of air humidity > 80 %. The device is not approved for use in swimming pools and/or wet rooms. The air must not be subject to condensation.
- The IO module/IO module smart and its connected electromechanical components must not be tampered with and/or modified.

2.3 Requirements of the target group

We assume and require that fabricators possess the following knowledge and skills:

- knowledge of the regulations concerning occupational safety and accident prevention
- comprehension of technical correlations according to state-of-the-art science and technology
- knowledge of professional work steps
- knowledge of the applicable standards and directives
- knowledge of applicable testing regulations
- knowledge and skills with regard to material processing of the respective material (timber, PVC, aluminium)
- knowledge and skills with regard to the professional use of tooling, machines and systems for the production of window or door elements

- knowledge and skills with regard to the professional fixing of technical elements
- knowledge in functional testing and operation of window or door elements
- knowledge of the requirements of profile system providers
- knowledge and skills with regard to the professional use of electrical and mechanical tooling
- knowledge and skills with regard to the professional fixing of technical elements
- knowledge and skills with regard to the retrofit of mechanical security technology on window or door elements
- knowledge and skills with regard to the professional fabrication of electrical components
- knowledge and skills with regard to the work steps:
 - connecting electrical components
 - commissioning electrical components
 - checking the function of electrical components
- knowledge of the 5 safety rules:
 - enable
 - secure against reactivation
 - ensure that system is voltage-free
 - earthing and short-circuiting
 - cover or isolate proximate live parts

SIEGENIA offers training courses for the acquisition of some of the required knowledge and skills. Contact your SIEGENIA sales consultant in case of requirement.

2.4 Safety information

DANGER

Risk of fatal injury from electric shock

Exposed electrical components

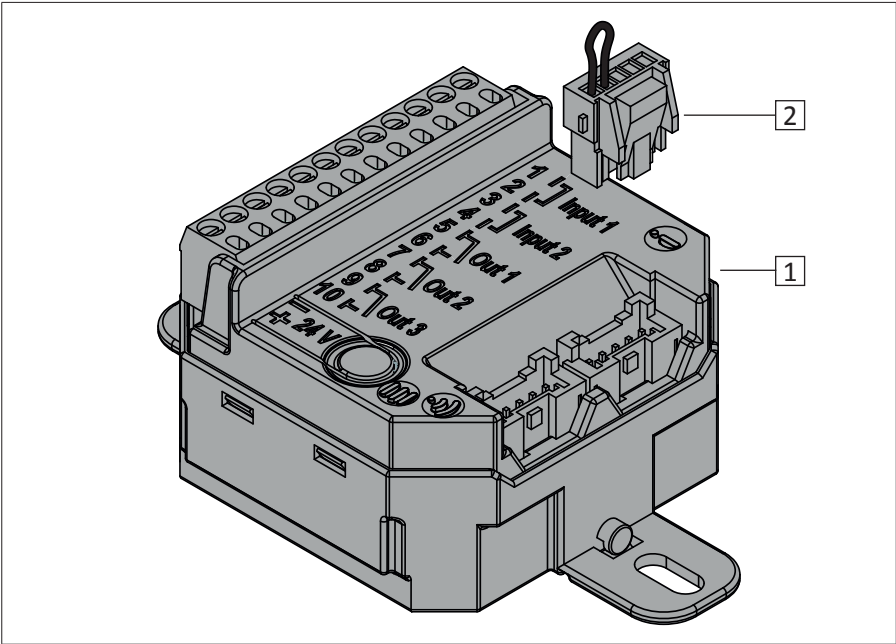
- All work on a 230 V AC mains power supply may only be performed by a qualified electrician.



If energy-carrying cables are routed in parallel to data cables (ISDN, DSL, etc.), this could lead to interference e. g. in the speed of the data transmission.

3 Product specifications

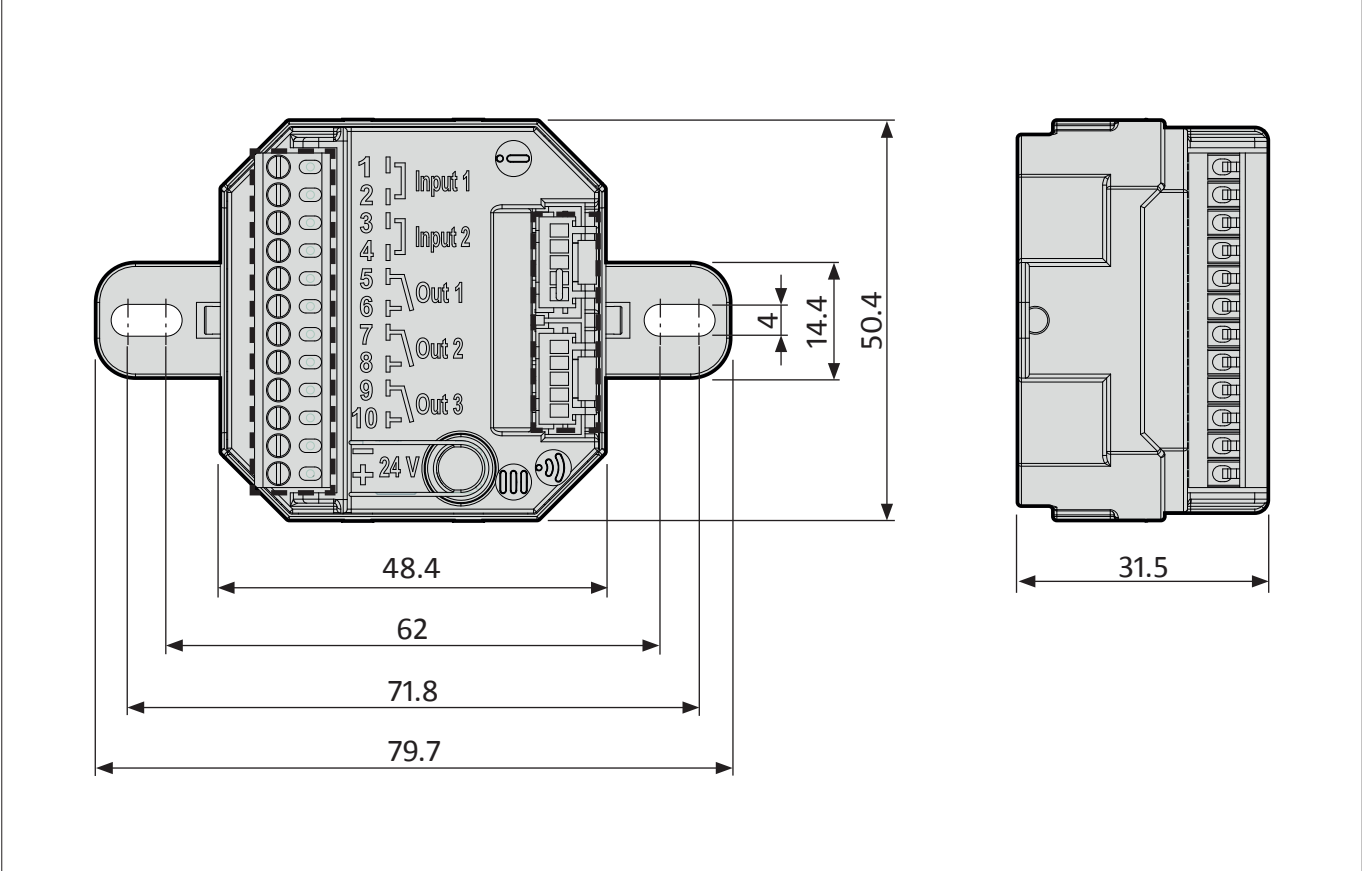
3.1 Scope of delivery



Item	Name	piece
1	IO module/IO module smart	1
2	Termination plug	1

3.2 Dimensions

IO module/IO module smart



3.3 Functional mode

3.3.1 IO module

- Function upgrading of the electromechanical KfV multi-point locks (slave function)
- Control of third-party drives e. g. garage door drives (master function) in combination with the SIEGENIA access control systems (abbreviation: SIEGENIA ACS)
- Three potential-free output contacts
- Two potential-free input contacts:
e. g. for intercom system, provided by customer, and for day/night switchover via clock timer
- Communication via SI-BUS
- Secure encrypted communication via AES 128 Bit
- Update option via SI-BUS*

* for online access via an internet-capable WIFI router

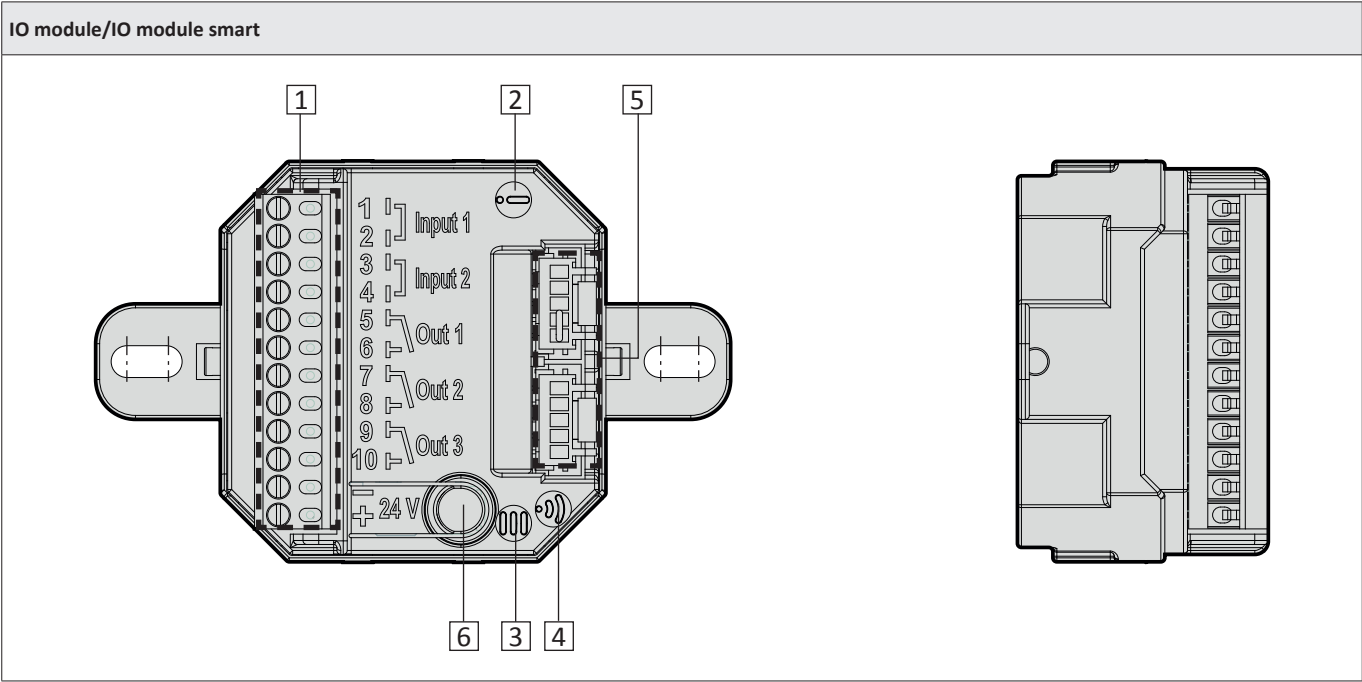
3.3.2 IO module smart

- Extension of the WIFI-capable control of electromechanical KfV multi-point locks via SIEGENIA Comfort app (available free of charge from Google Play Store or Apple App Store)
- Function upgrading of electromechanical KfV multi-point locks (slave function)
- Control of third-party drives e. g. garage door drives via SIEGENIA Comfort app (master function)
- Three potential-free output contacts
- Two potential-free input contacts:
e. g. for intercom system, provided by customer, and for day/night switchover via clock timer
- Online remote access via REMOTE access*
- Online user administration*
- Online PUSH notification*
- Communication via SI-BUS
- Secure encrypted communication via AES 128 Bit
- Update option via WIFI chip*

* for online access via an internet-capable WIFI router

IO module/IO module smart

3.4 Operating elements



Item	Name
1	12-pin connection terminal strip for inputs and outputs 24 V DC
2	Status LED
3	Menu LED
4	WIFI LED (only for IO module smart)
5	Connection sockets for SI-BUS connection
6	Buttons for menu navigation

3.5 Technical specifications

3.5.1 IO module

Name	Data
Supply voltage	19 V DC to 32 V DC
Power consumption	1.2 W
Protection class	III
Protection type	IP20 (with connected plug)
Operating temperature range	0° C to 45° C
Switching current output max.	< 1000 mA
Switching voltage output	24 V DC

3.5.2 IO module smart

Name	Data
WIFI radio frequency (optional)	802.11 b/g/n, 2.4 GHz, 150Mbps
Supply voltage	19 V DC to 32 V DC
Power consumption	1.2 W
Protection class	III
Protection type	IP20 (with connected plug)
Operating temperature range	0° C to 45° C
Switching current output max.	< 1000 mA
Switching voltage output	24 V DC

3.6 Accessories

3.6.1 Spare parts

Name	Order number	Short text
Termination plug	3513133	ZEM SE400--SB-----TS

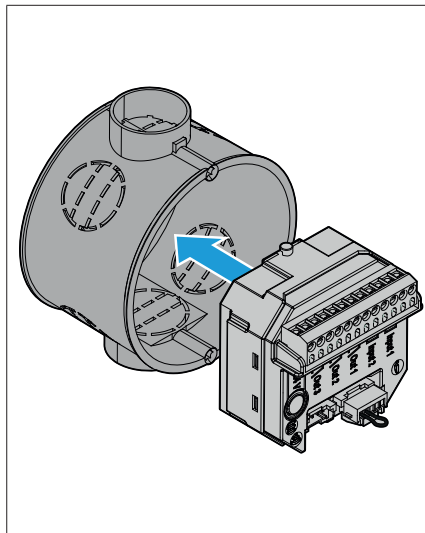
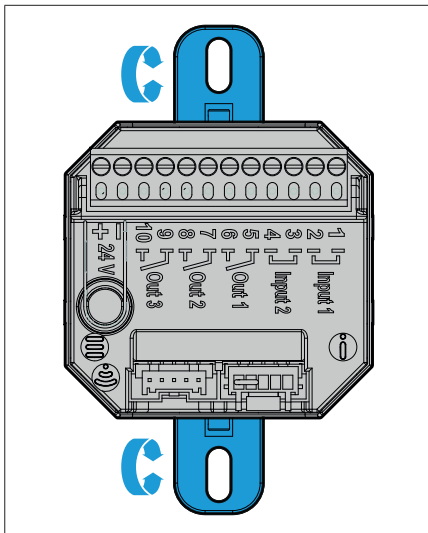
IO module/IO module smart

4 Assembly

4.1 Assembly conditions

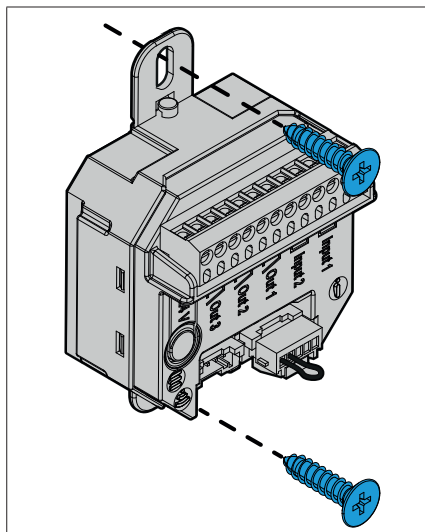
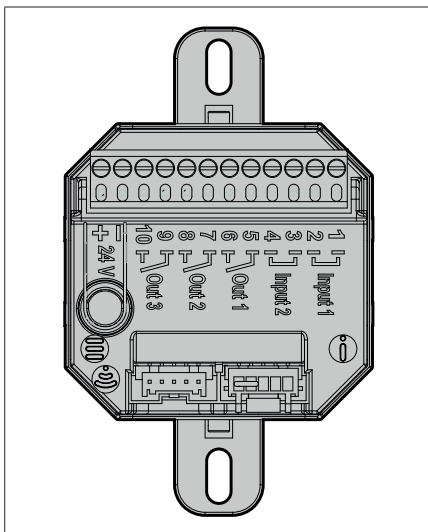
- The installation site of the IO module/IO module smart should not be accessible to third parties.
- The IO module/IO module smart should be installed to be as free from interference as possible. The following interferences can have a negative influence on the WLAN signal:
 - water pipes
 - metal objects
 - air conditioning units
 - wireless devices (e. g. radio telephones, baby monitors, Bluetooth loudspeakers, etc.)
 - WIFI networks on the same wireless channels (e. g. the neighbour's WIFI router)
 - Non CE-conformant electrical consumers such as LED lighting, electrical motors, etc.
- The IO module is suitable both for flush-mounting and surface-mounting.

4.2 Flush mounting



- Break off the two brackets for flush-mounting.
- Mount the module in a flush-mounting box.

4.3 On-wall mounting



- Use the two brackets for surface mounting.

4.4 Connection of the IO module / IO module smart

WARNING

Risk of fatal injury from electric shock

Exposed electrical components.

- Before installation, make sure that the connecting cables are voltage-free.
- All work on the 230 V AC mains power supply must be carried out in compliance with the current German VDE regulations (e.g., VDE 0100) and any relevant country-specific requirements.

4.4.1 Connecting IO module/ IO module smart to A-opener or GENIUS and top-hat rail supply

The IO module/IO module smart communicates digitally via the SI-BUS log with the electromechanical drive of the KfV multi-point lock. The drive (A-opener, GENIUS A/B/PANIC) takes over the master functions and the IO module/IO module smart is operated in slave mode.

Max. 3 SIEGENIA ACS and up to 7 IO modules can be integrated into a BUS system. The last slave component must terminate the SI-BUS system via a termination plug (included in delivery) or via a connected top-hat rail power supply.



Examples siehe Kapitel 4.4.8 „Anschlussbeispiele zur Erweiterung von A-Öffner oder GENIUS“ ab Seite 26

IO module/IO module smart

IO module/IO module smart with top-hat rail power supply

1

2

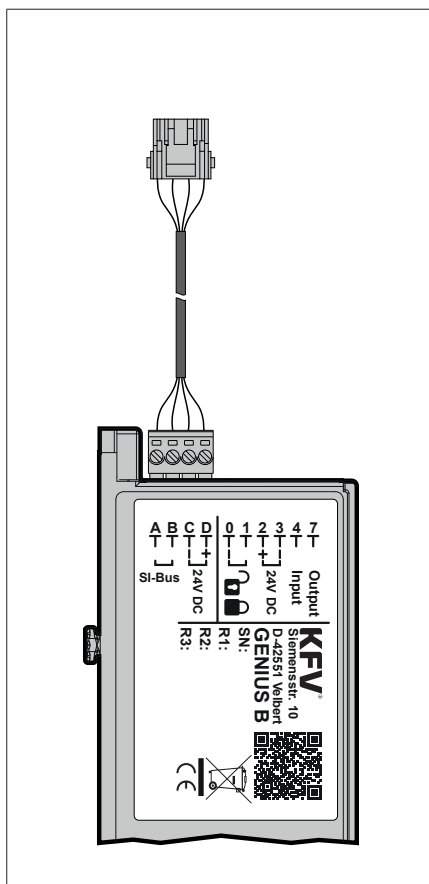
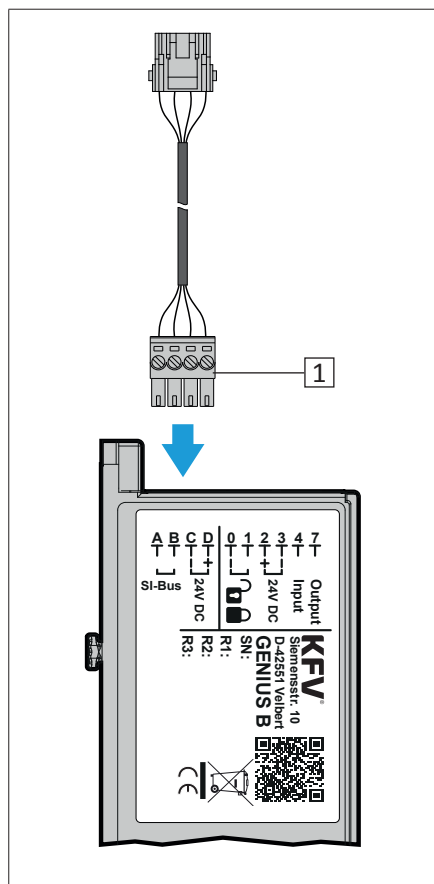
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4

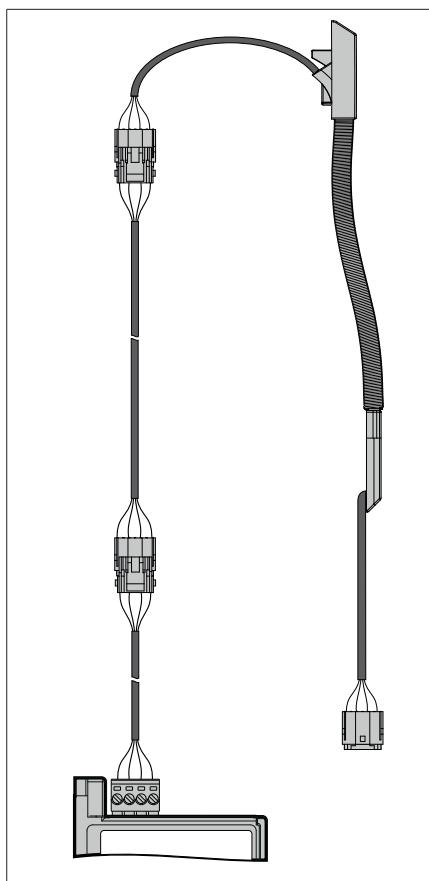
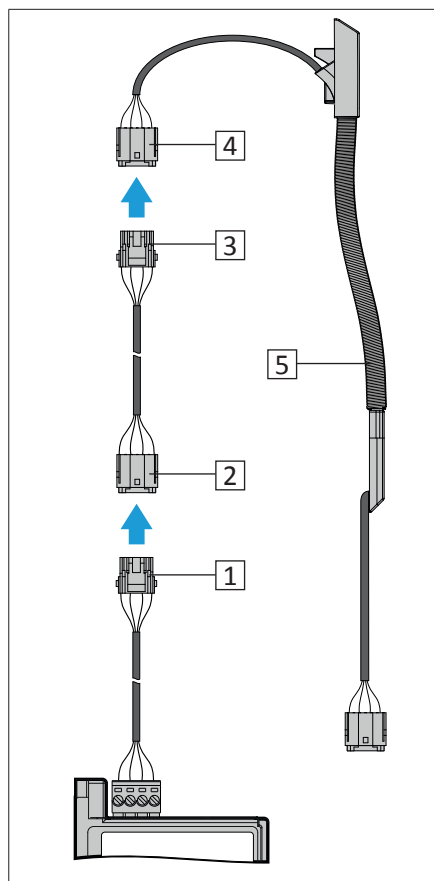
5

Item	Name
1	Electromechanical KfV drive (A-opener, GENIUS A, GENIUS B, GENIUS PANIC)
2	Cable transfer
3	Top-hat rail power supply (termination via cable)
4	IO module/IO module smart
5	12-pin Connection terminal strip for external devices (e.g. intercom system, motorised door drive): 1/2 = potential-free input contact 1 3/4 = potential-free input contact 2 5/6 = potential-free output contact 1 7/8 = potential-free output contact 2 9/10 = potential-free output contact 3 11 = 24 V DC (-) In 12 = 24 V DC (+) in

Connect KFV drive to cable transition



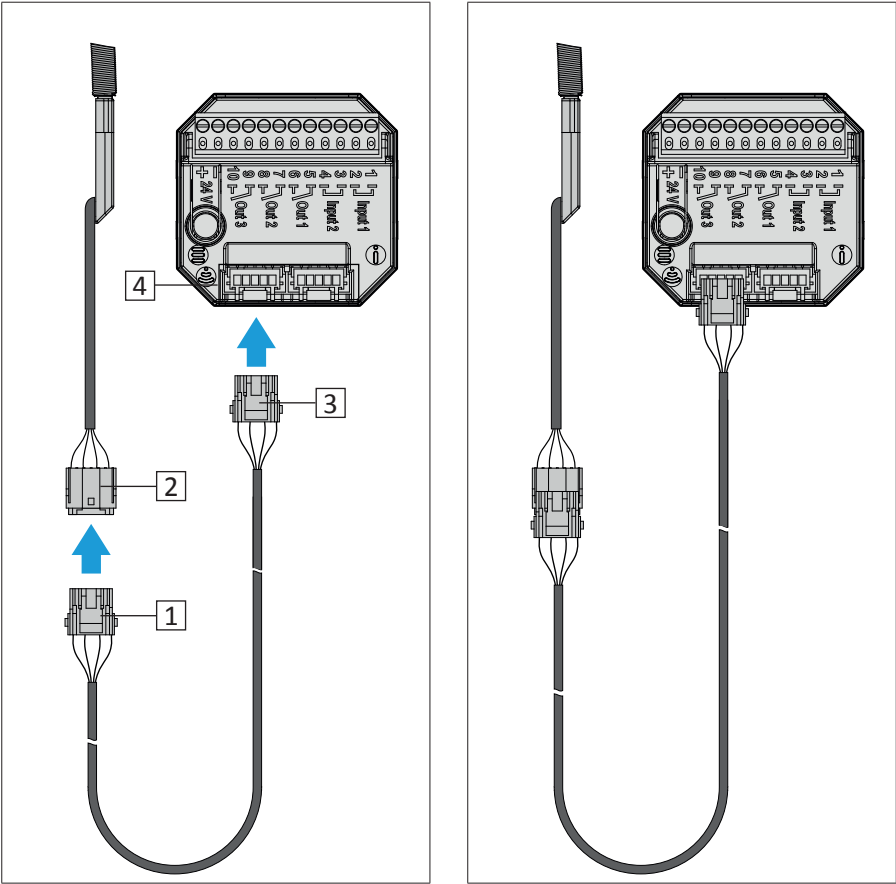
- Insert the green PTR plug [1] of the adapter cable into the connection of the (A-opener/ GENIUS) drive with the marking "SI-BUS" (A to D).



- Connect the bushing [1] of the adapter cable with the plug [2] of the extension cable.
- Connect the bushing [3] of the extension cable with the plug [4] of the cable transition [5].

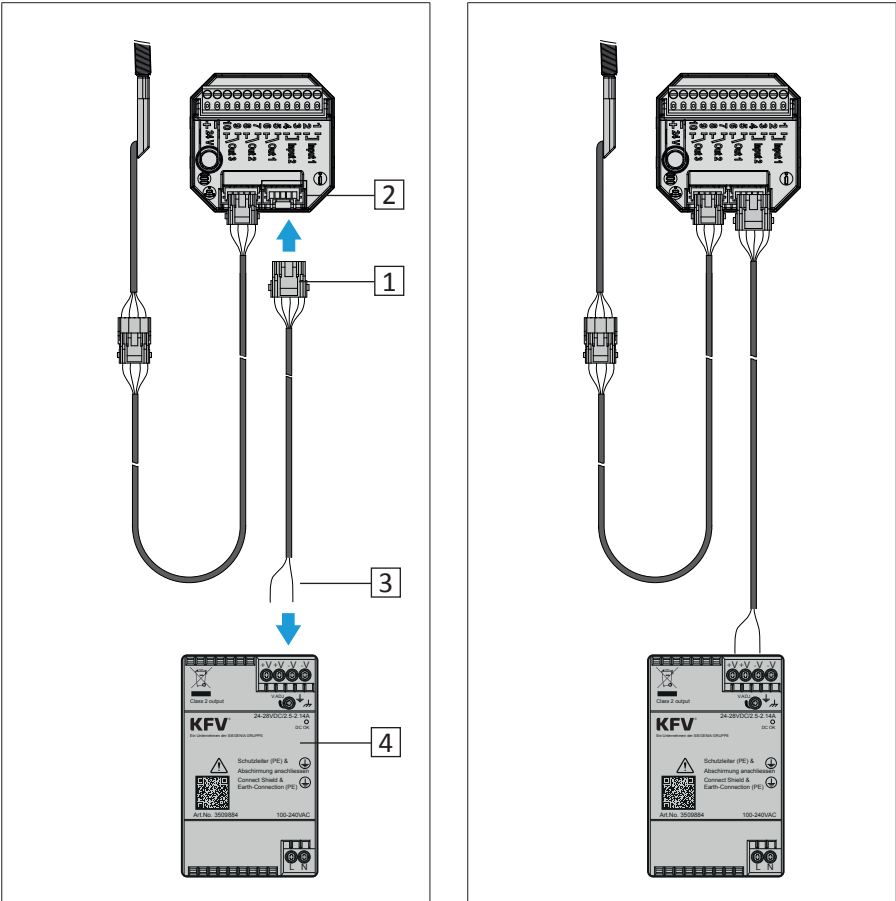
IO module/IO module smart

Connect cable transition to IO module/IO module smart



- Connect the bushing [1] of the adapter cable to the plug [2] of the cable transition.
- Connect the bushing [3] of the adapter cable to the SI-BUS connection [4] of the IO module/IO module smart.

Connecting IO module/IO module smart to top-hat rail power supply

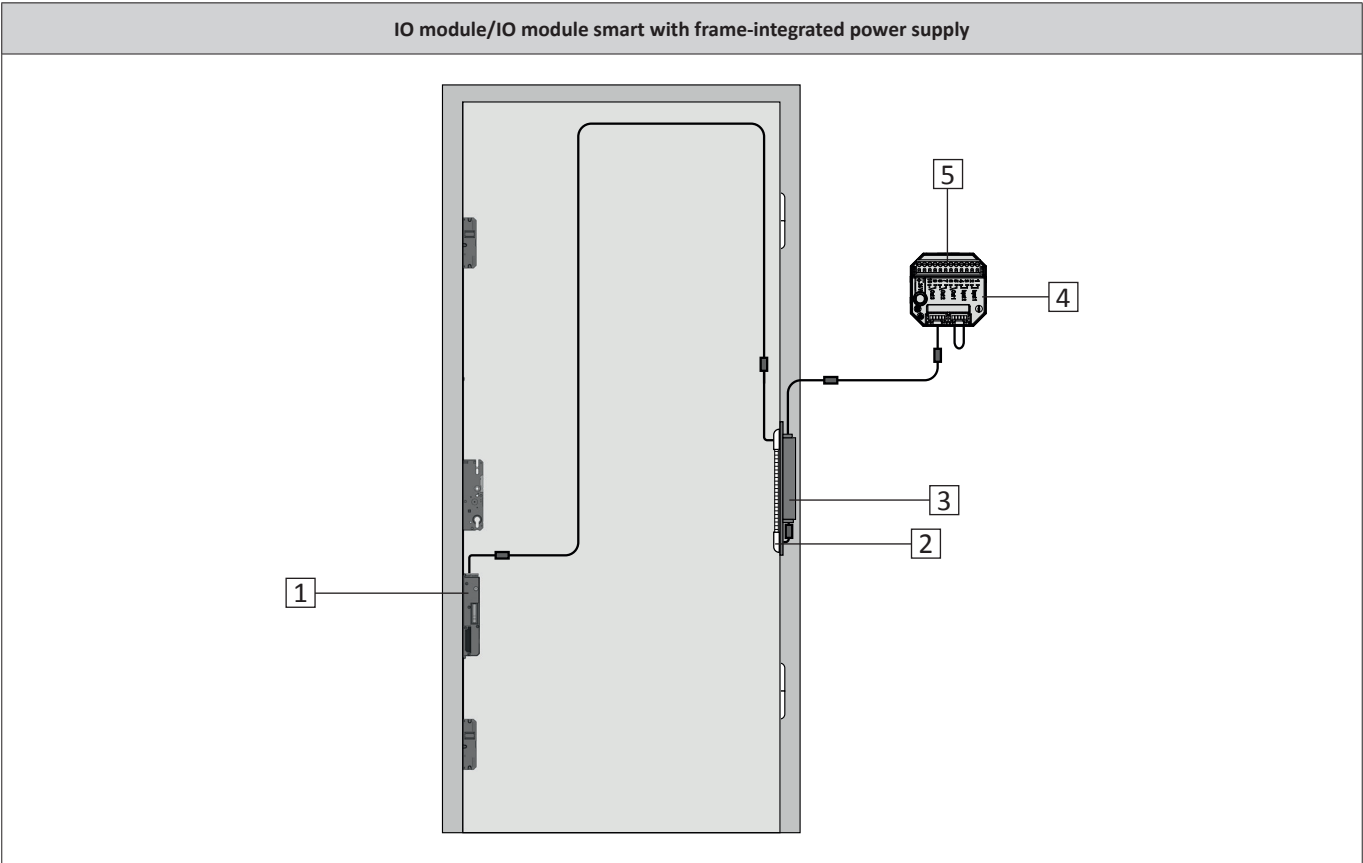


- Connect the bushing [1] of the adapter cable of the power supply to the free SI-BUS connection [2] of the IO module/IO module smart.
- Lay the open end [3] of the adapter cable from the power supply on the top-hat rail power supply [4] as shown below:

adapter cable	power supply
white	(+V)
brown	(-V)

 A termination with the termination plug is not necessary.

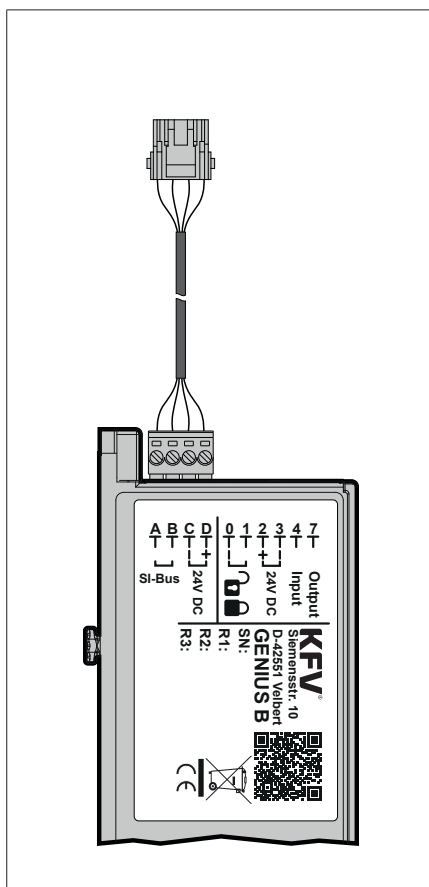
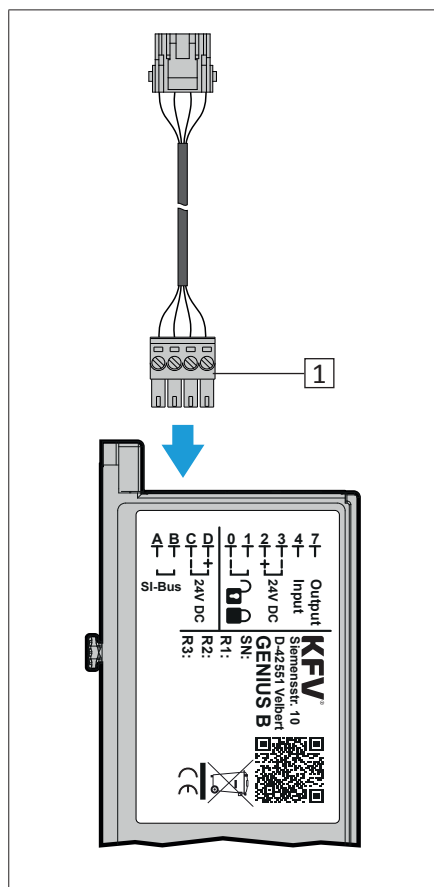
4.4.2 Connecting IO module/ IO module smart to A-opener or GENIUS and frame power supply



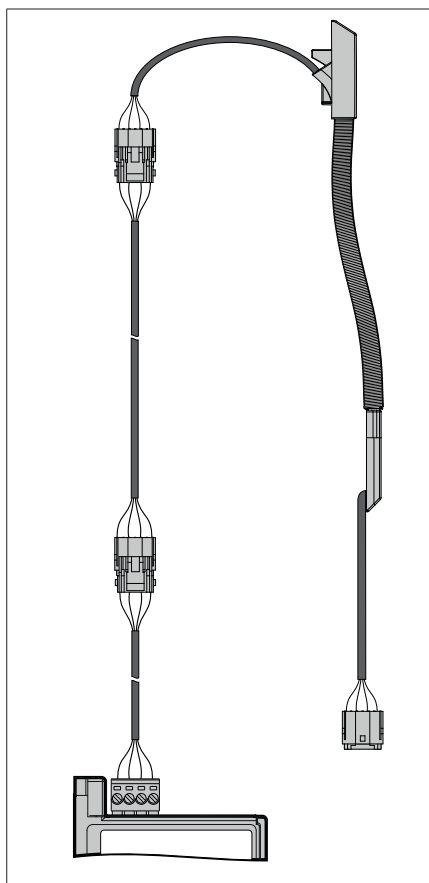
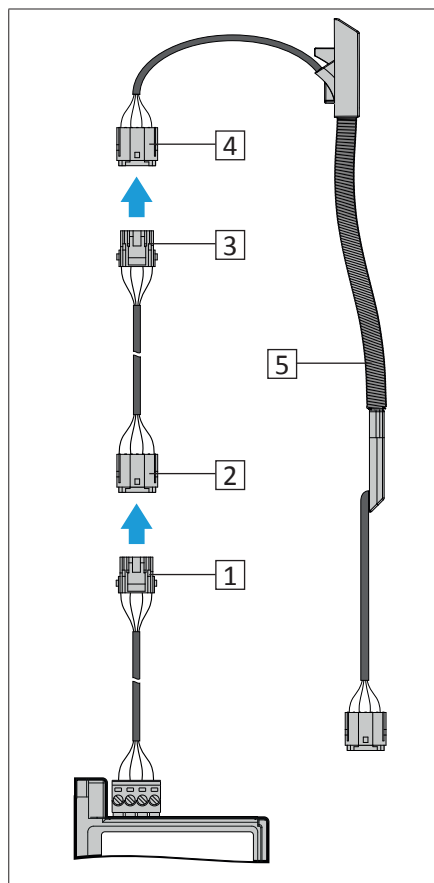
Item	Name
1	Electromechanical KVF drive (A-opener, GENIUS A, GENIUS B, GENIUS PANIC)
2	Cable transfer
3	Frame-integrated power supply
4	IO module/IO module smart (termination via JST plug)
5	12-pin Connection terminal strip for external devices (e g. intercom system, motorised door drive): 1/2 = potential-free input contact 1 3/4 = potential-free input contact 2 5/6 = potential-free output contact 1 7/8 = potential-free output contact 2 9/10 = potential-free output contact 3 11 = 24 V DC (-) In 12 = 24 V DC (+) in

IO module/IO module smart

Connect KfV drive to cable transition

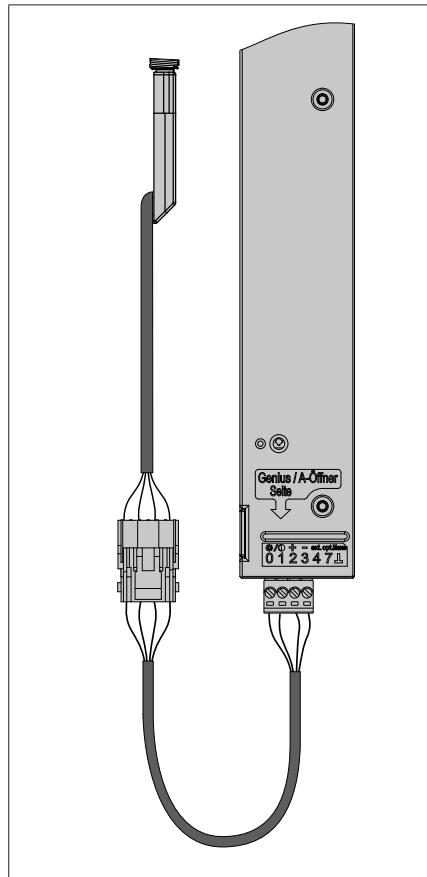
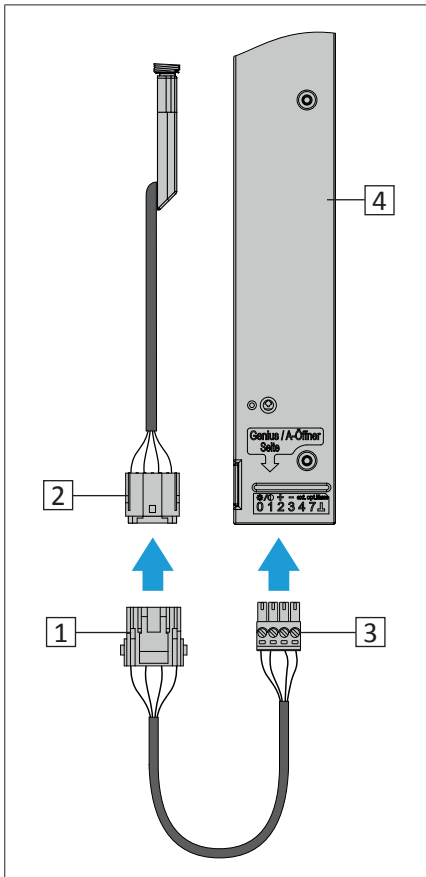


- Insert the green PTR plug [1] of the adapter cable into the connection of the (A-opener/GENIUS) drive with the marking "SI-BUS" (A to D).



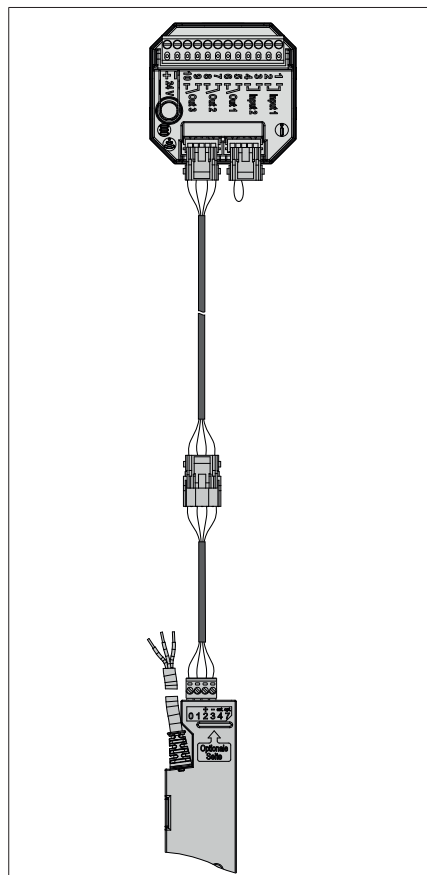
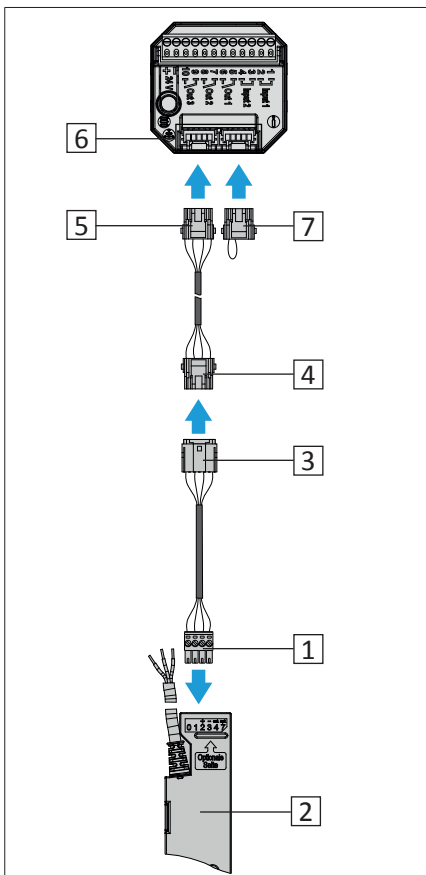
- Connect the bushing [1] of the adapter cable with the plug [2] of the extension cable.
- Connect the bushing [3] of the extension cable with the plug [4] of the cable transition [5].

Connect cable transition to frame-integrated power supply



- ▶ Attach the bushing [1] of the adapter cable of the power supply to the plug [2] of the cable transition.
- ▶ Insert the green PTR plug [3] of the adapter cable into the connection „GENIUS/A-opener side“ (0 to 3) of the power supply [4].

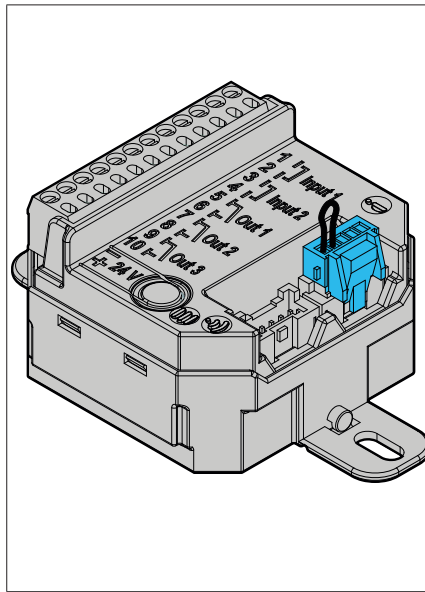
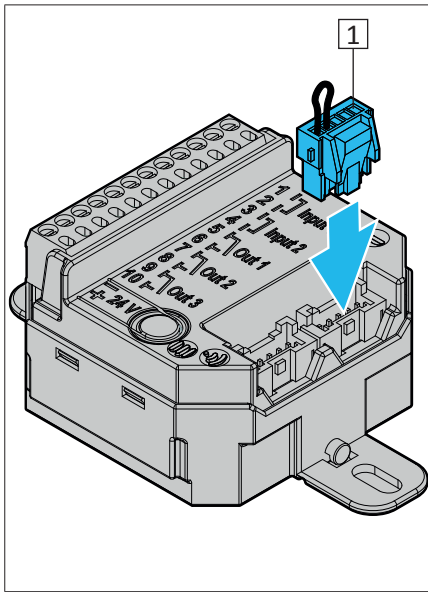
Connect frame-integrated power supply to IO module/IO module smart



- ▶ Insert the green PTR plug [1] of the adapter cable into the connection „optional side“ (0 to 3) of the power supply [2].
- ▶ Insert the plug [3] of the adapter cable on the bushing [4] of the extension cable and the bushing [5] into the SI-BUS connection [6] of the IO module/IO module smart.
- ▶ Insert the termination plug [7] into the second SI-BUS connection [6].

IO module/IO module smart

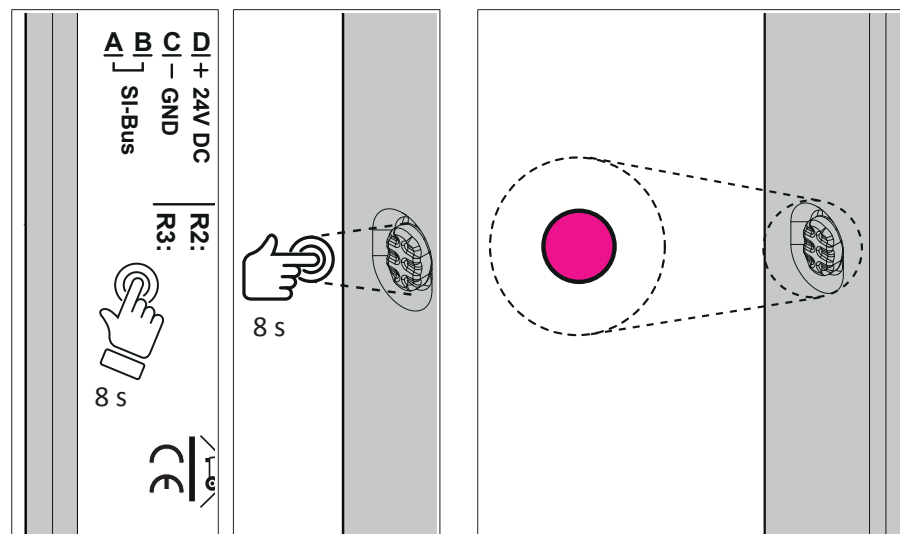
Termination



- For the termination of the SI-BUS system, insert the JST termination plug [1] included in the delivery into a free SI-Bus bushing.

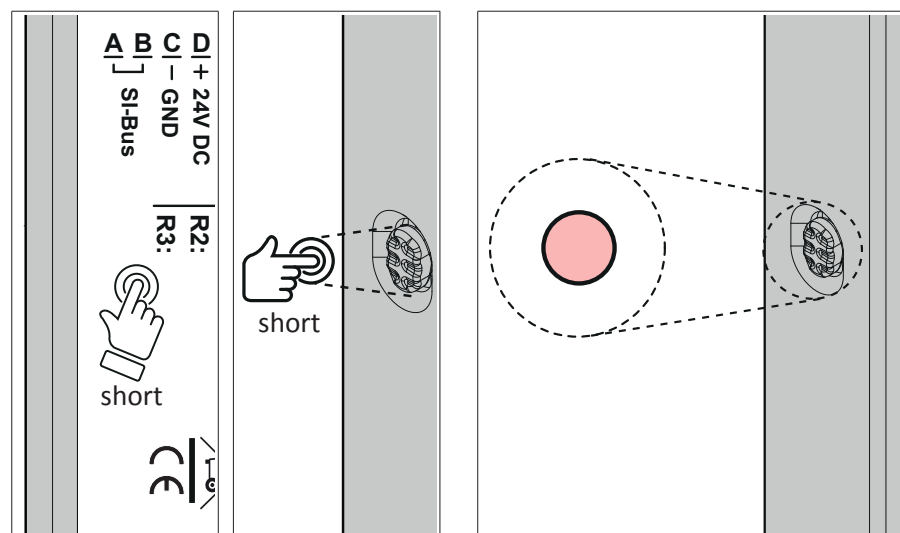
4.4.3 Coupling IO module with A-opener/GENIUS

Both devices must be coupled to use the IO module in conjunction with an A-opener or a GENIUS.

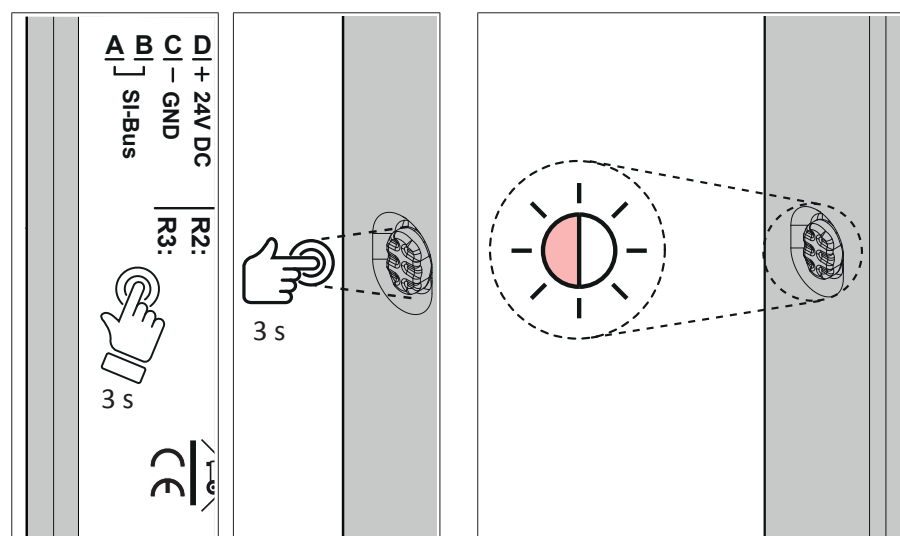


! You can find more detailed information on operation of the menu on the A-opener / GENIUS in the operating instructions.

- For the A-opener or GENIUS, press and hold down the menu button for approx. 8 seconds until the menu magenta LED lights up.
- An acoustic signal sounds as acknowledgement.

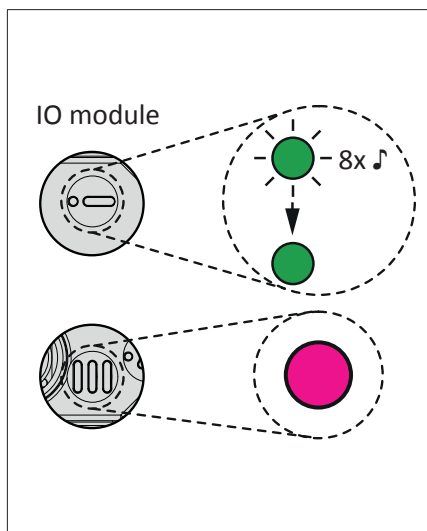
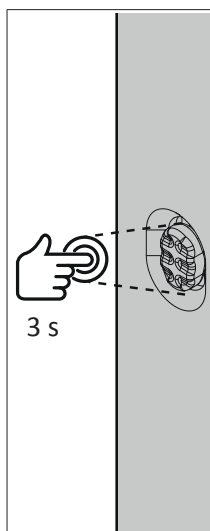
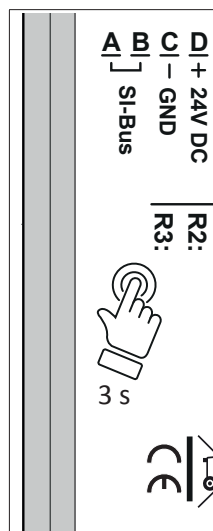


- Keep pressing the menu button until the LED lights up in light red.
- Every press of a button is acknowledged by an acoustic signal.



- Hold down the menu button for approx 3 seconds until the LED flashes alternatively in light red/white.
- An acoustic signal sounds as acknowledgement.

IO module/IO module smart



- ▶ Hold down the menu button again for approx 3 seconds to carry out the coupling.
- ▶ An acoustic signal on the drive sounds as acknowledgement.
- ▶ The green status LED of the module flashes and an acoustic signal sounds at intervals.
- ▶ The status LED lights up green and the menu status of the module lights up magenta.
- ▶ The devices are coupled.

4.4.4 Coupling IO module with A-opener/GENIUS

Both devices must be coupled to use the IO module smart in conjunction with an A-opener or a GENIUS.



Always carry out the coupling via the IO module smart. If the coupling is carried out via the A-opener or the GENIUS, the WIFI function of the IO module smart is deactivated.

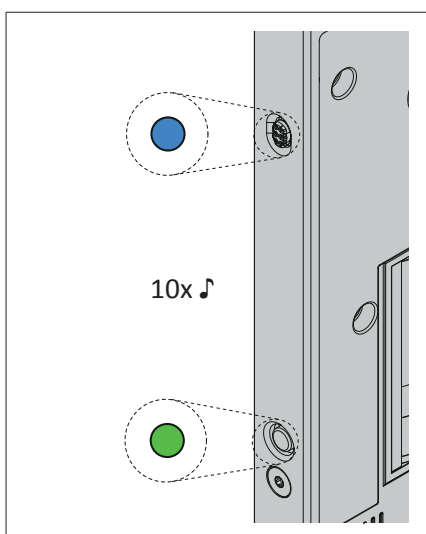
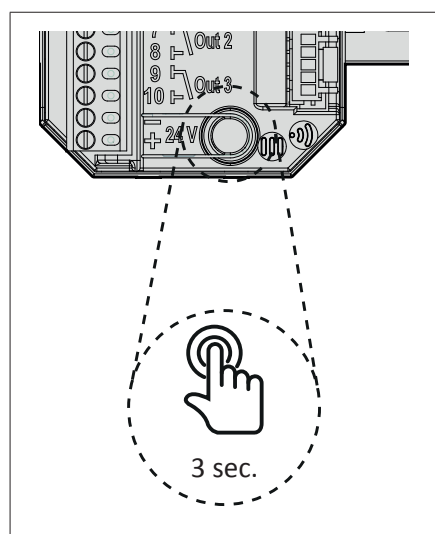
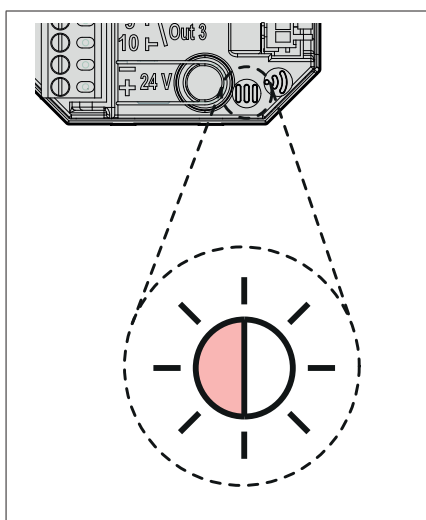
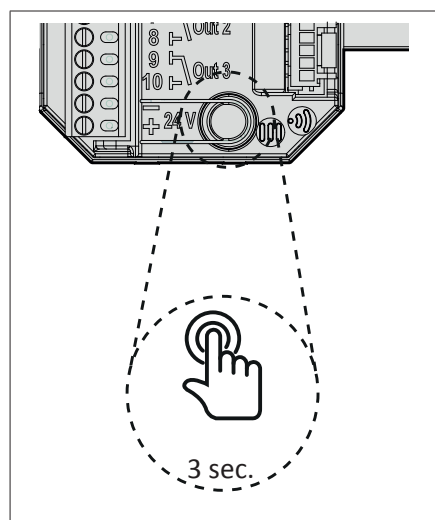
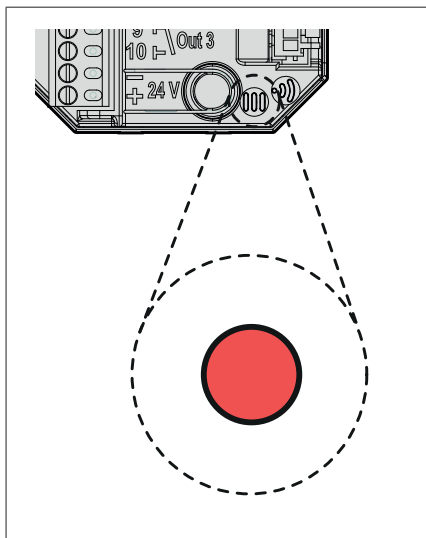
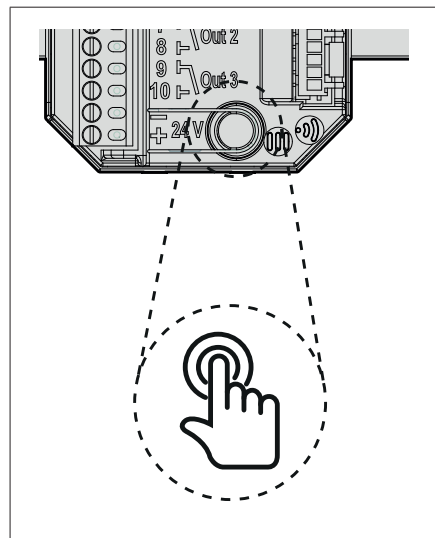
- ▶ The menu LED must light up magenta.
- ▶ If the menu LED on the IO module smart does not light up magenta, press the button briefly to switch on the LED.
- ▶ When the menu LED lights up magenta, press the button a few times in succession until the LED lights up light red.



The LEDs switch off automatically after approx. 2 minutes if no further input on the IO module follows.

- ▶ Hold down the menu button 3 seconds to select the menu item "Couple devices".
- ▶ An acoustic signal sounds as acknowledgement.
- ▶ The LED flashes alternatively light red/white.

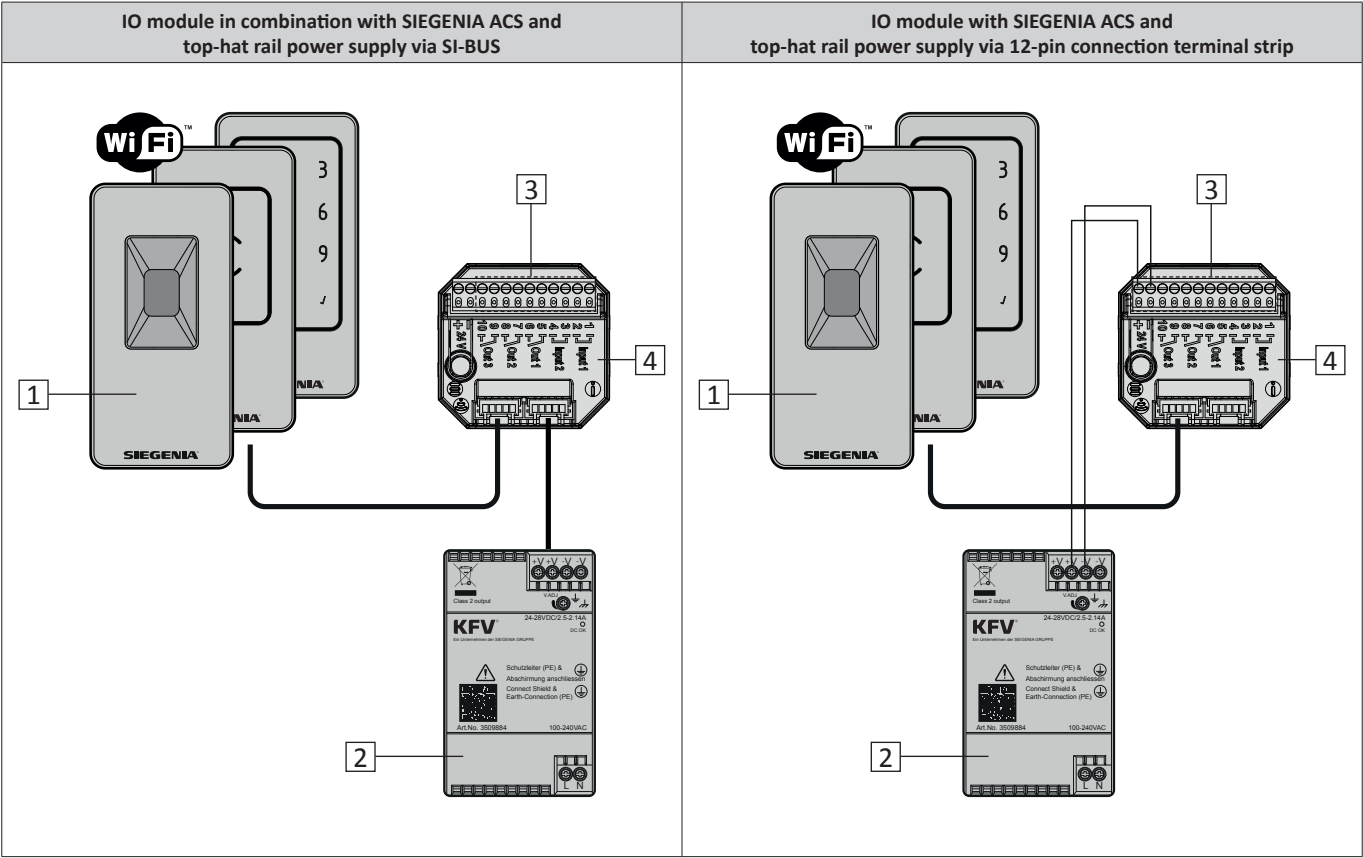
- ▶ Hold down the menu button again for approx 3 seconds to carry out the coupling.
- ▶ An acoustic signal sounds as acknowledgement.
- ▶ An intermittent acoustic signal (10x ♪) is audible on the A-opener / on the GENIUS and green is displayed.
- ▶ The devices are coupled.



IO module/IO module smart

4.4.5 Connecting IO module to ACS

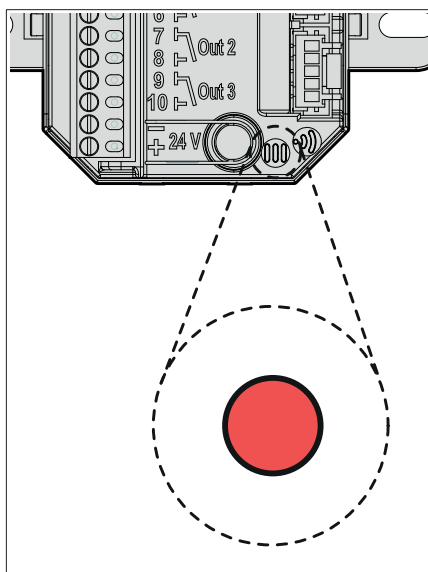
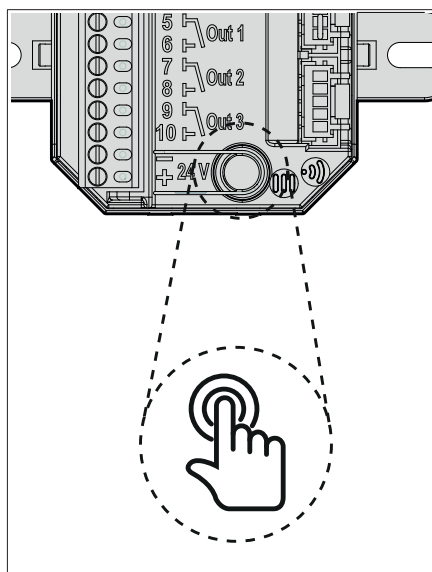
The IO module/IO module smart communicates digitally via the SI-BUS log with the SIEGENIA ACS. The IO module takes over the master function. Up to 3 slave components (SIEGENIA ACS) can be operated in a BUS system. The last slave component must terminate the BUS system via a termination plug (included in delivery).



Item	Name						
1	SIEGENIA ACS (fingerprint scanner, keypad, transponder) on the SI-BUS						
2	Top-hat rail power supply; via 12-pin connection terminal strip:<table><tr><th>top-hat rail power supply connection</th><th>IO module connection</th></tr><tr><td>V+</td><td>24V DC (+) In</td></tr><tr><td>V-</td><td>24V DC (-) In</td></tr></table>	top-hat rail power supply connection	IO module connection	V+	24V DC (+) In	V-	24V DC (-) In
top-hat rail power supply connection	IO module connection						
V+	24V DC (+) In						
V-	24V DC (-) In						
3	12-pin Connection terminal strip for external devices (e. g. garage door drive, E-opener, motorised door drive): 1/2 = potential-free input contact 1 3/4 = potential-free input contact 2 5/6 = potential-free output contact 1 7/8 = potential-free output contact 2 9/10 = potential-free output contact 3 11 = 24 V DC (-) In 12 = 24 V DC (+) in						
4	IO module						

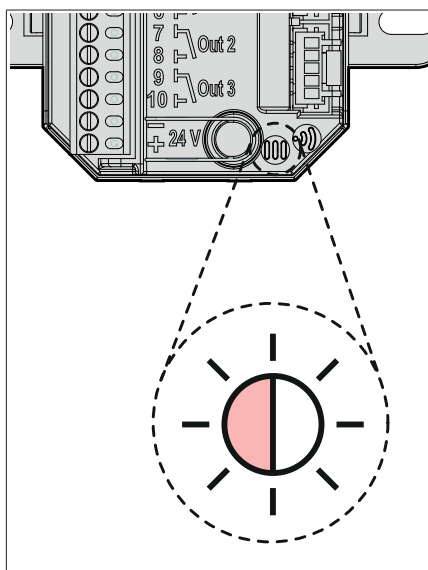
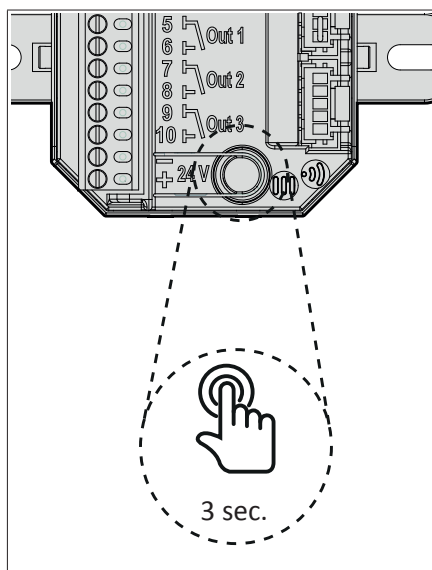
4.4.6 Coupling IO module with ACS

Both devices must be coupled to use the IO module in conjunction with a SIEGENIA ACS.



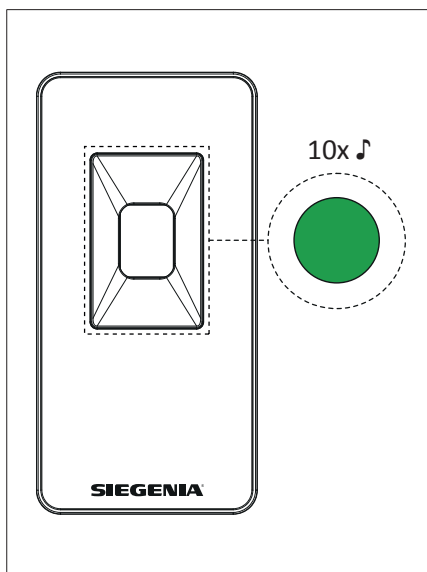
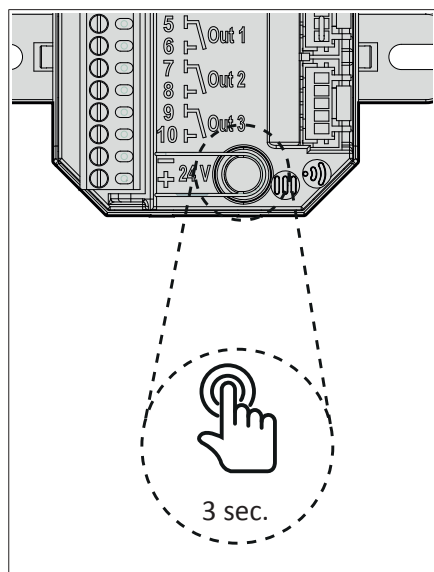
- ▶ The menu LED must light up magenta.
- ▶ If the menu LED on the IO module does not light up magenta, press the button briefly to switch on the LED.
- ▶ When the menu LED lights up magenta, press the button a few times in succession until the LED lights up light red.

 The LEDs switch off automatically after approx. 2 minutes if no further input on the IO module follows.



- ▶ Hold down the menu button 3 seconds to select the menu item "Couple devices".
- ▶ An acoustic signal sounds as acknowledgement.
- ▶ The LED flashes alternatively light red/white.

IO module/IO module smart



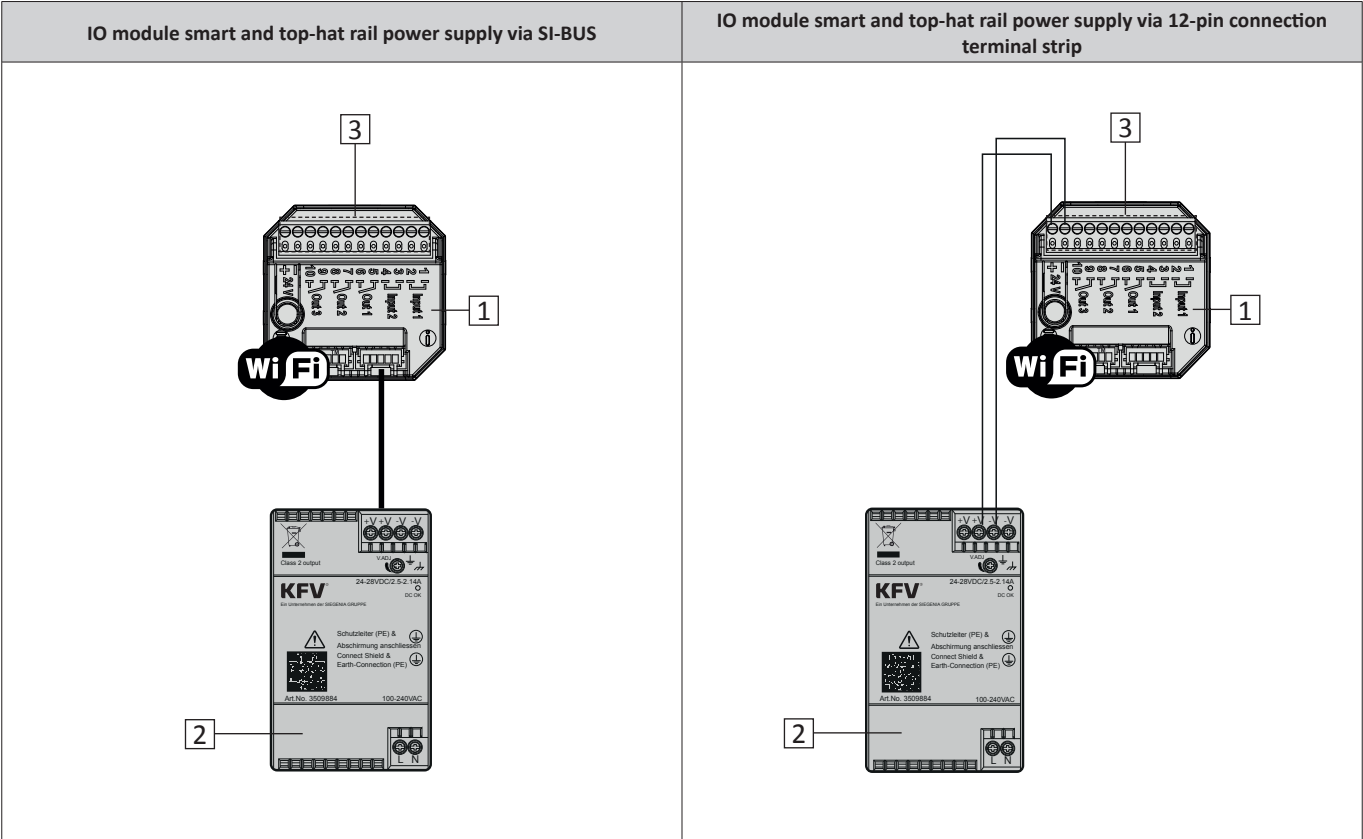
- ▶ Hold down the menu button again for approx 3 seconds to carry out the coupling.
- ▶ An acoustic signal sounds as acknowledgement.
- ▶ An intermittent acoustic signal (10x 🎵) is audible on the access control system and green is displayed.
- ▶ The devices are coupled.

4.4.7 Connecting IO module smart to external devices

The IO module is also designed for stand-alone mode and can therefore be operated without an additional SIEGENIA ACS.



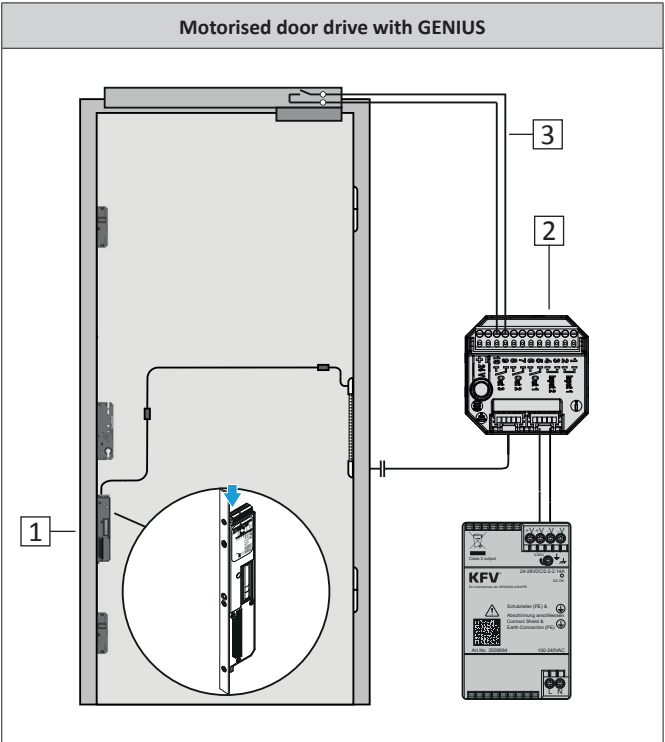
Examples siehe Kapitel 4.4.9 „Anschlussbeispiele für externe Geräte“ ab Seite 28



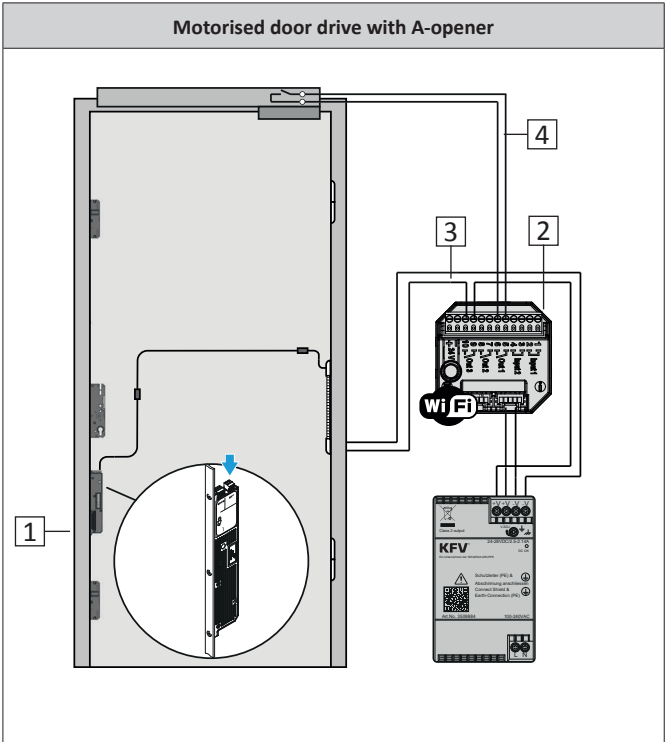
Item	Name						
1	IO module smart						
2	Top-hat rail power supply; for connection via 12-pin terminal strip:<table><tr><th>top-hat rail power supply connection</th><th>IO module connection</th></tr><tr><td>V+</td><td>24V DC (+) In</td></tr><tr><td>V-</td><td>24V DC (-) In</td></tr></table>	top-hat rail power supply connection	IO module connection	V+	24V DC (+) In	V-	24V DC (-) In
top-hat rail power supply connection	IO module connection						
V+	24V DC (+) In						
V-	24V DC (-) In						
3	12-pin Connection terminal strip for external devices (e. g. garage door drive, E-opener, motorised door drive): 1/2 = potential-free input contact 1 3/4 = potential-free input contact 2 5/6 = potential-free output contact 1 7/8 = potential-free output contact 2 9/10 = potential-free output contact 3 11 = 24 V DC (-) In 12 = 24 V DC (+) in						

IO module/IO module smart

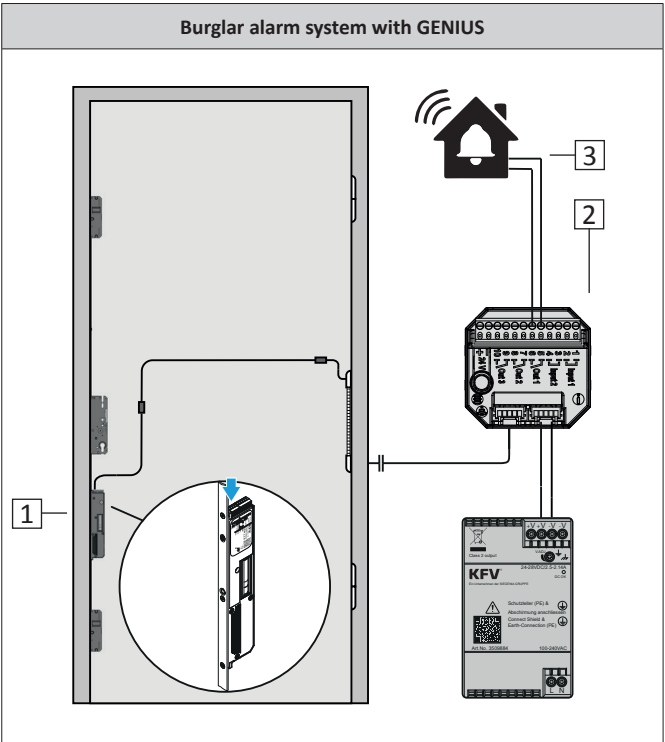
4.4.8 Example of connections for the extension of A-opener or GENIUS



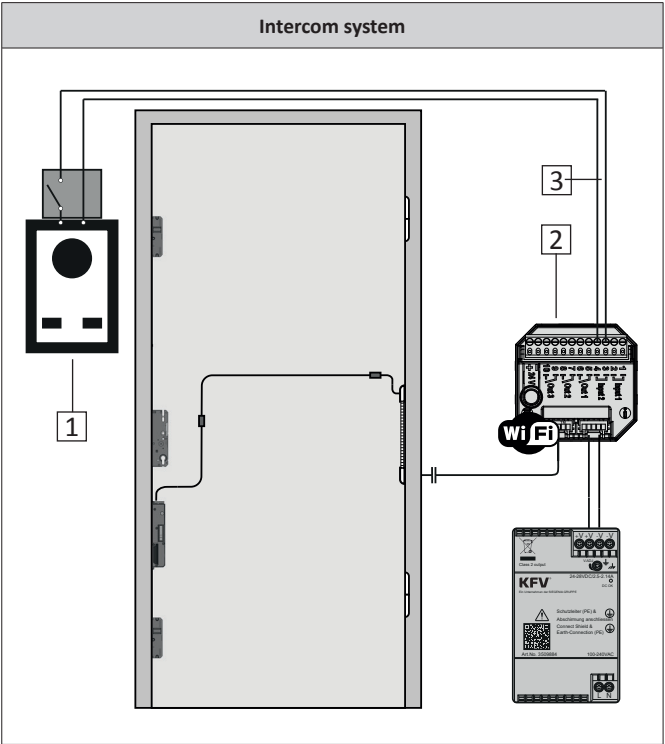
Item	Name
1	GENIUS
2	IO module
3	Potential-free output contact 3: feedback „latch in cylinder operated lock“



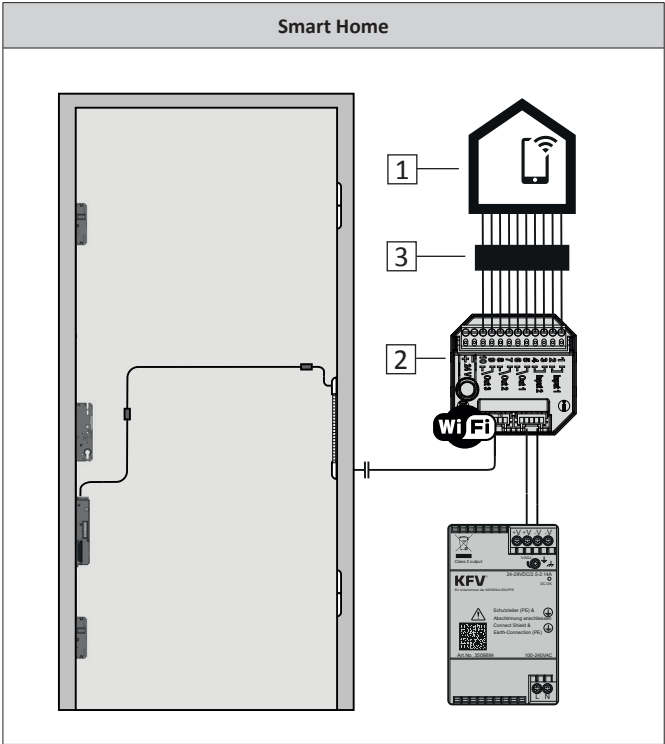
Item	Name
1	A-opener
2	IO module smart
3	Potential-free output contact 1: „Open“
4	Potential-free output contact 3: A-opener



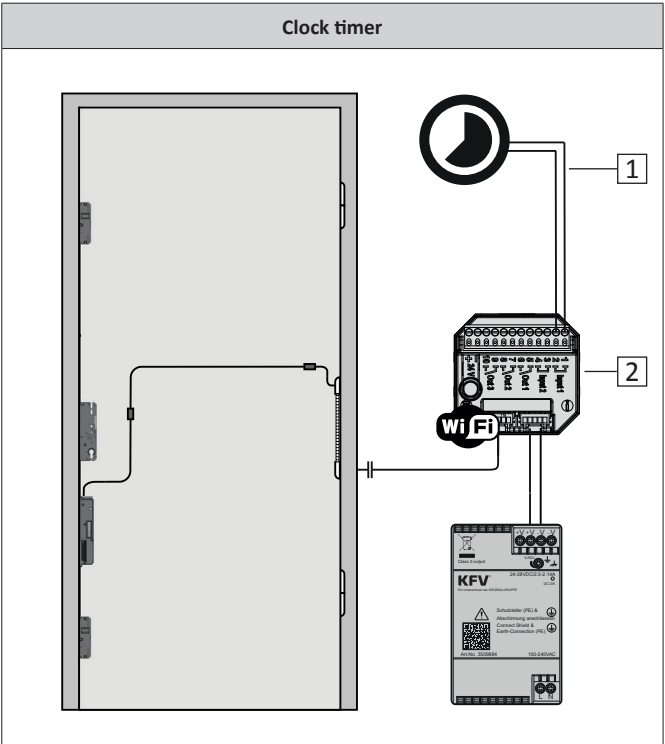
Item	Name
1	GENIUS
2	IO module
3	Potential-free output contact 1: feedback "Door closed and locked"



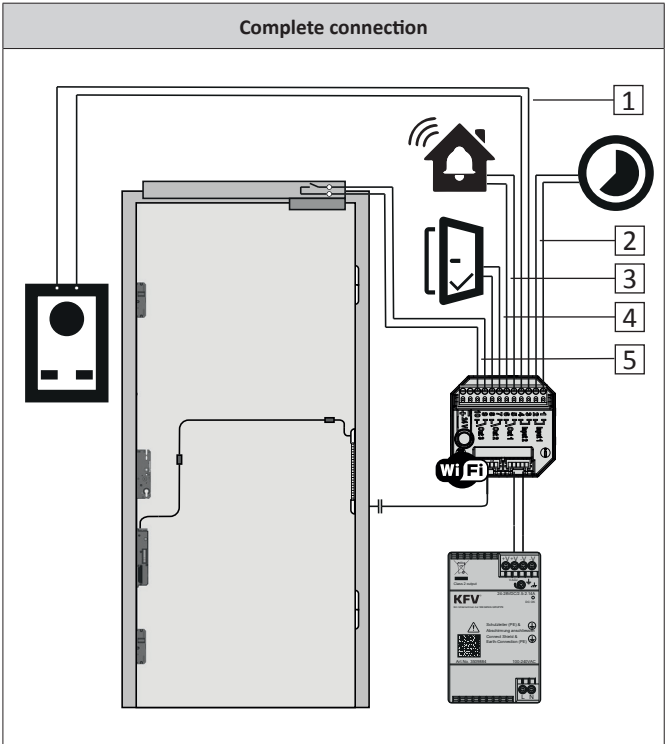
Item	Name
1	Intercom system with potential-free output
2	IO module smart
3	Potential-free input contact 1: intercom system opening signal



Item	Name
1	Smart Home control
2	IO module smart
3	Smart Home switching actuators or control unit I/O

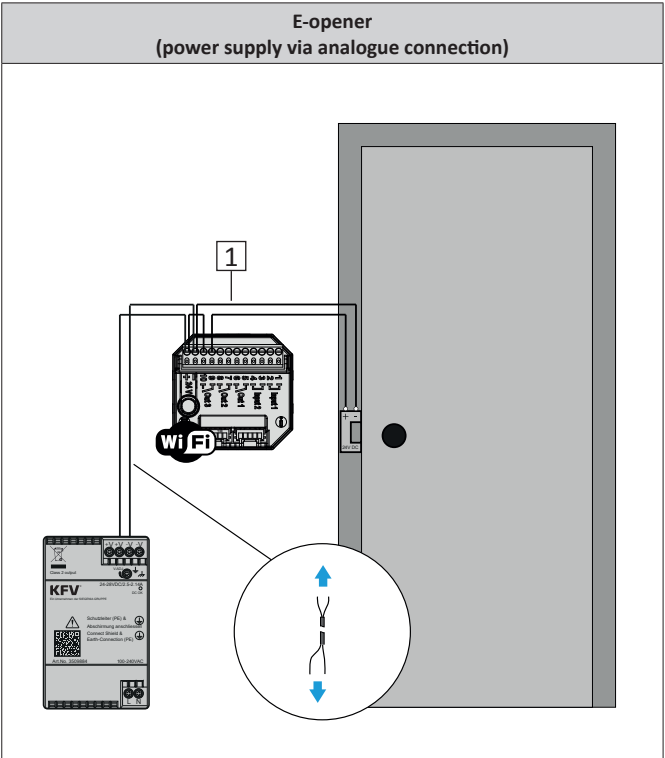


Item	Name
1	Potential-free input contact 2: changeover day / night
2	IO module smart

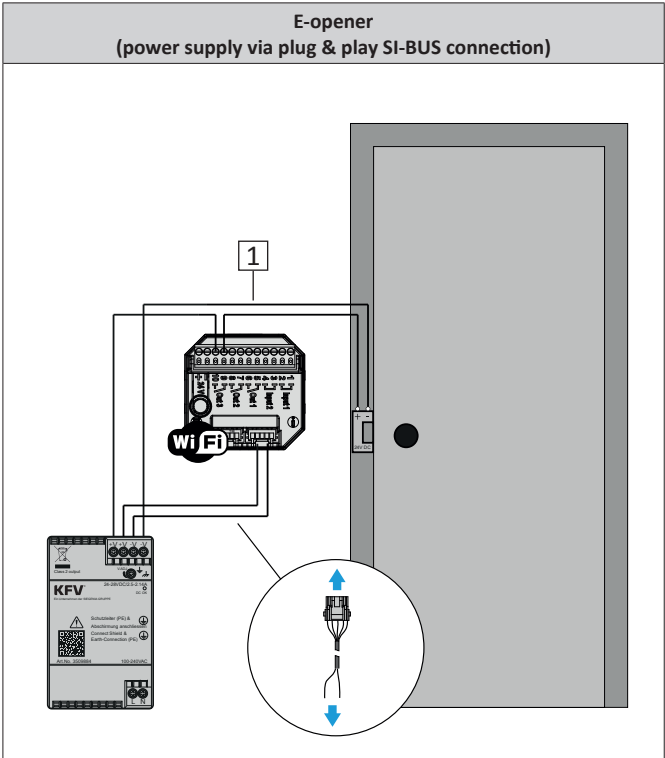


Item	Name
1	Potential-free input contact 1: intercom system opening signal
2	Potential-free input contact 2: changeover day / night
3	Potential-free output contact 1: feedback "Door closed and locked"
4	Potential-free output contact 2: feedback „Door closed / Door open“
5	Potential-free output contact 3: feedback „latch in cylinder operated lock“

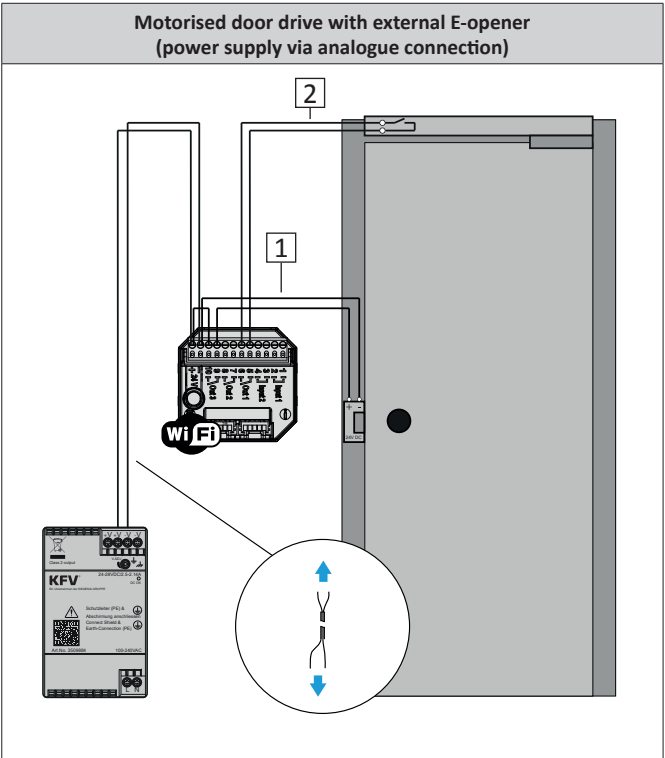
4.4.9 Examples of connections for external devices



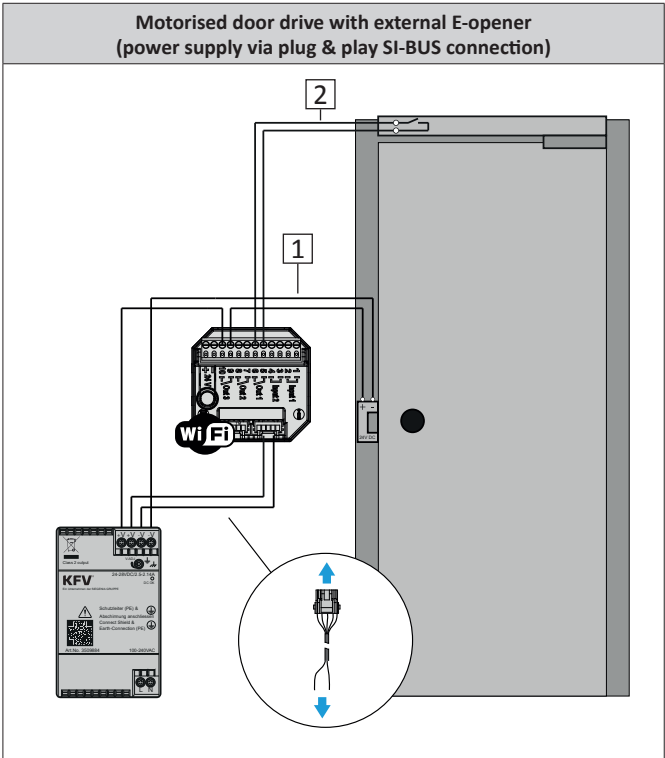
Item	Name
1	Potential-free output contact 3: E-opener



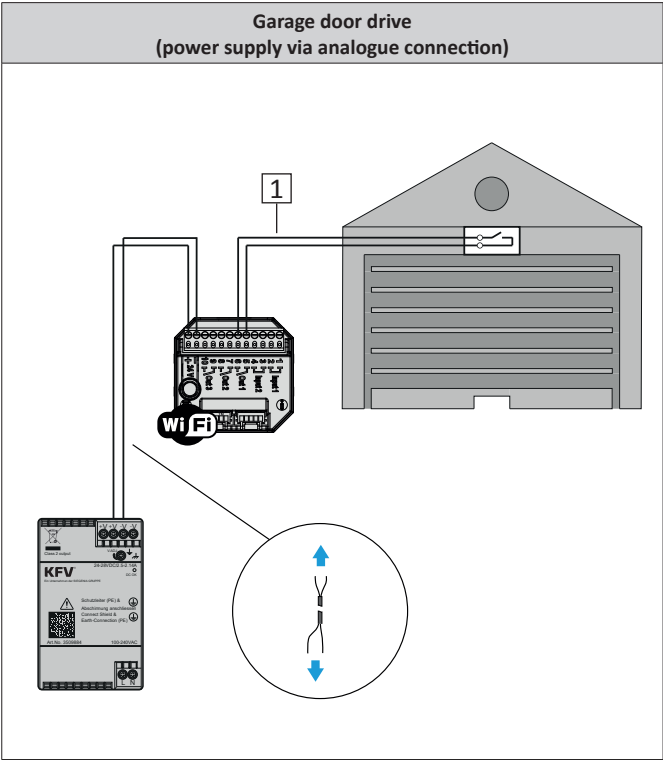
Item	Name
1	Potential-free output contact 3: E-opener



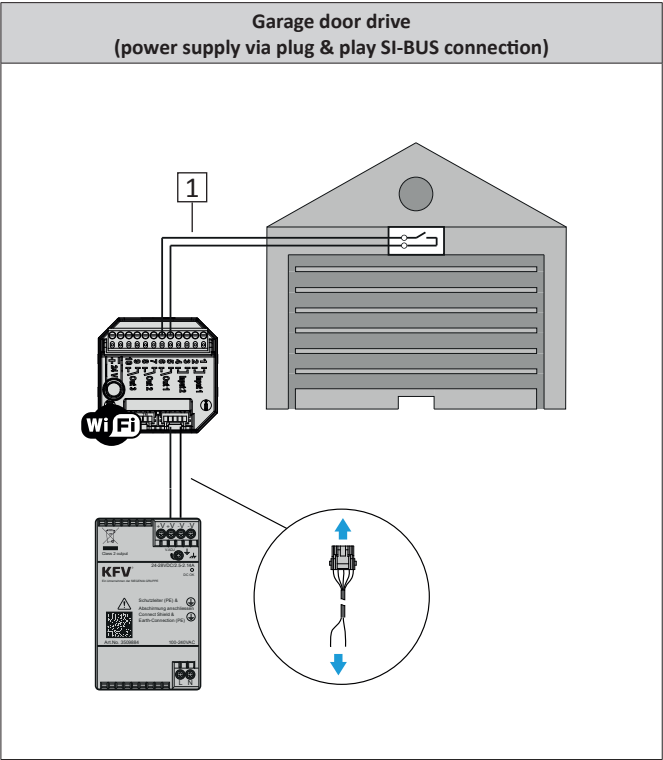
Item	Name
1	Potential-free output contact 1: „Open“
2	Potential-free output contact 3: E-opener



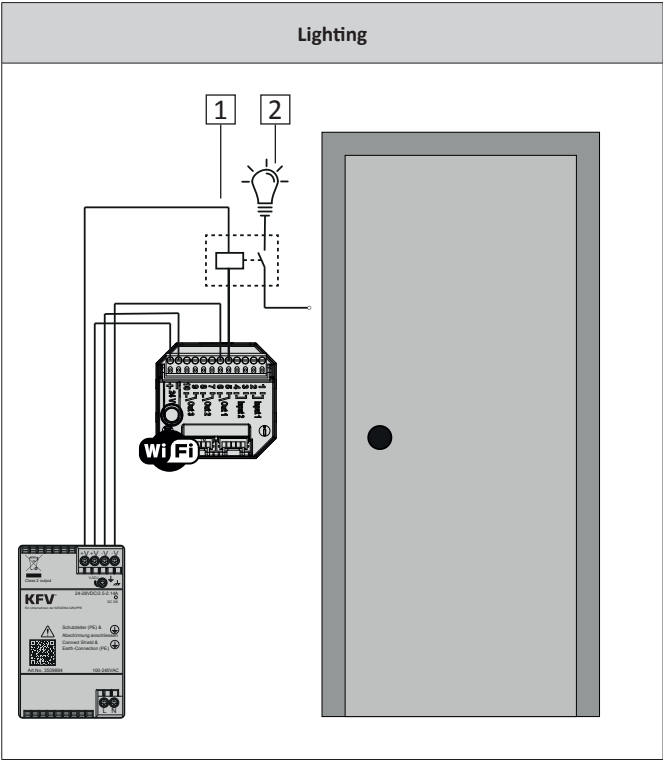
Item	Name
1	Potential-free output contact 1: „Open“
2	Potential-free output contact 3: E-opener



Item	Name
1	Potential-free output contact 1: „Open“



Item	Name
1	Potential-free output contact 1: „Open“



Item	Name
1	Potential-free output contact 1: coupling relays (24 V DC)
2	Lamp (voltage supply: 230 V AC)

 You can find the order numbers for the components in the connection examples given in the product catalogues for the comfort systems.

5 Troubleshooting



In case of a malfunction, do not open the unit or try to repair it under any circumstances.

Note: you will find detailed information on how to rectify malfunctions on the SIEGENIA Smarthome Internet page:

<https://smarthome.siegenia.com>



If the Internet page does not describe the problem, please contact your installation company or SIEGENIA directly:
Tel. +49 271 3931-0.

6 Disposal



Electrical devices should not be disposed of as household waste. Bring the device, accessories and packaging to an environmentally-friendly recycling facility.

www.siegenia.com



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