2N® Access Unit

Access Control

Installation Manual

Version 2.2

www.2n.cz

The 2N TELEKOMUNIKACE a.s. is a Czech manufacturer and supplier of telecommunications equipment.

The product family developed by 2N TELEKOMUNIKACE a.s. includes GSM gateways, private branch exchanges (PBX), and door and lift communicators. 2N TELEKOMUNIKACE a.s. has been ranked among the Czech top companies for years and represented a symbol of stability and prosperity on the telecommunications market for almost two decades. At present, we export our products into over 120 countries worldwide and have exclusive distributors on all continents.

2N® is a registered trademark of 2N TELEKOMUNIKACE a.s. Any product and/or other names mentioned herein are registered trademarks and/or trademarks or brands protected by law.

2N TELEKOMUNIKACE a.s. administers the FAQ database to help you quickly find information and to answer your questions about 2N products and services. On www.faq.2n.cz you can find information regarding products adjustment and instructions for optimum use and procedures „What to do if...".

2N TELEKOMUNIKACE a.s. hereby declares that the 2N® Access Unit product complies with all basic requirements and other relevant provisions of the 1999/5/EC directive. For the full wording of the Declaration of Conformity see the CD-ROM (if enclosed) or our website at www.2n.cz.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

The 2N TELEKOMUNIKACE a.s. is the holder of the ISO 9001:2009 certificate. All development, production and distribution processes of the company are managed by this standard and guarantee a high quality, technical level and professional aspect of all our products.

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1. Product Overview

Here is what you can find in this section:

- 1.1 Components and Associated Products
- 1.2 Terms and Symbols

Basic Properties

2N® Access Unit is an elegant and reliable access IP system equipped with a number of useful functions, which are not always common in devices of this category.

2N® Access Unit is a modular access system meeting all individual user needs. Unlike other access systems available on the market, **2N® Access Unit** is not a single-module system with given functionality, but a user friendly modular system, allowing the user to a assemble a number of modules and accessories on a "plug and play" basis. This approach provides individual configuration options and increase in functionality as necessary.

Keypad – the numeric keypad module allows you to use the intercom as a code lock for lock switch activation or phone number/user number calling.

Integrated card reader - the integrated card reader module provides the RFID card access control functionality. With additional software settings, the card can control more functions than the door lock only.

Electric lock switch – the electric lock switch can be controlled via a numeric keypad, PC application or any phone during a call. The switch can be completed with additional output modules if necessary. A wide range of the switch mode settings provide an infinite number of applications.

Resistance – **2N® Access Unit** is designed as a robust, mechanically resistant access system, which withstands any weather conditions without requiring additional accessories.

The 2N® Access Unit installation is very easy. All you have to do is assemble the required modules and connect the system to your LAN via a mains cable. Being of the "plug and play" type, the modules need not be configured individually. Feed the

intercom either from a 12V power supply or directly from your PoE-supporting LAN.

To configure 2N® Access Unit , you need a PC equipped with any Internet browser. Use the **2N® Access Commander** to manage extensive intercom installations easily.

Advantages of Use

- Elegant design
- Weather resistance
- Variable mounting options (brick/plasterboard flush mounting, wall mounting)
- Optional numeric keypad with backlight
- Use of multiple modules of the same type - e.g. building entrance/exit card reader
- Integrated electronic lock switches with wide setting options
- Integrated RFID card reader module
- LAN (PoE) or external 12V power supply
- Configuration via web interface or special PC application
- HTTP server for configuration
- SNTP client for server time synchronisation
- SMTP client for e-mail sending
- TFTP/HTTP client for automatic configuration and firmware update

1.1 Components and Associated Products

Basic Units

Part No. 916010

2N® Access Unit

Tip

- There may be just one basic unit in an installation. The basic unit installation requires one frame/box position, the other positions are available for other modules.
- **Supported modules:**
  all the **2N® Helios IP Verso** modules are supported: RFID card reader (125kHz; 13.56MHz), keypad, 5-button module, Wiegand, etc.

Frames

Part No. 9155011 Flush mounting frame, 1-module Covering frame for the 1-module brick/plasterboard flush mounting box. This 1-module frame is used when a module is added to an existing installation or a separate module is mounted onto an extended interconnecting cable, for an OUT card reader, for example. Remember to order the frame when you order a 1-module flush mounting box, Part No. 9155014.	**Part No. 9155012** Flush mounting frame, 2-module Covering frame for the 2-module brick/plasterboard flush mounting box. Remember to order the frame when you order a 2-module flush mounting box, Part No. 9155015.	**Part No. 9155013** Flush mounting frame, 3-module Covering frame for the 3-module brick/plasterboard flush mounting box. Remember to order the frame when you order a 3-module flush mounting box, Part No. 9155016.

Part No. 9155021 Wall mounting frame, 1-module Covering frame for wall (surface) mounting. This 1-module frame is used when a module is added to an existing installation or a separate module is mounted onto an extended interconnecting cable, for an OUT card reader, for example.	**Part No. 9155022** Wall mounting frame, 2-module Covering frame for wall (surface) mounting.	**Part No. 9155023** Wall mounting frame, 3-module Covering frame for wall (surface) mounting.

Tip

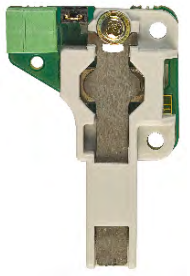
- The 1-module frame is used when a module is added to an existing installation or a separate module is mounted onto an extended interconnecting cable, for an OUT card reader, for example.

Tip

- Remember to order the flush mounting frame when you order a brick/plasterboard flush mounting box: i:
  - 1-module frame, **Part No. 9155011** – 1-module flush mounting box, **Part No. 9155014**.
  - 2-module frame, **Part No. 9155012** – 2-module flush mounting box, **Part No. 9155015**.
  - 3-module frame, **Part No. 9155013** – 3-module flush mounting box, **Part No. 9155016**.

Extending Modules

Part No. 9155030 **2N® Helios IP Verso** – Infopanel The Infopanel module helps you place such information as building number, opening hours and similar into the intercom installation. The Infopanel has software-controlled backlight.	**Part No. 9155031** **2N® Helios IP Verso** – Keypad The numeric keypad module helps you dial a user via its phone directory position or phone number and enter a numeric code to control a lock and/or other functions. The keypad digits and symbols are backlight.	**Part No. 9155032** **2N® Helios IP Verso** – RFID Card Reader 125 kHz The card reader module helps you control access with contactless cards or key fobs. The module supports the 125kHz EM-41xx or HID Proximity cards.

Part No. 9155033 **2N® Helios IP Verso** – RFID Card Reader 13.56 MHz The card reader module helps you control access with contactless cards or key fobs. The module supports the 13.56MHz cards or carriers. **ISO14443A** Mifare Classic 1k & 4k, DESFire EV1, Mini, Plus S&X, SmartMX, Ultralight, Ultralight C, SLE44R35, my-d move (SLE66Rxx), PayPass, Legic Advant **ISO14443B** Calypso, CEPAS, Moneo, SRI512, SRT512, SRI4K, SRIX4K, PicoPass, HID iCLASS	**Part No. 9155034** **2N® Helios IP Verso** – I/O Module The logic input/output module helps you integrate various sensors and control doors and other equipment. The module is installed under another module, i.e. requires no separate position.	**Part No. 9155035** **2N® Helios IP Verso** – Buttons The module with 5 mechanical buttons provides quick dialling of users. The buttons are backlit and can be equipped with name tags.
		
Part No. 9155036 **2N® Helios IP Verso – Electronic Buttons** The module with 5 electronic buttons provides quick dialing of users via the phone directory. Use the arrow buttons to scroll over five positions in the phone directory. Press the button next to the name to choose an item in the selected group of five names.	**Part No. 9155037** **2N® Helios IP Verso** – Wiegand Module The Wiegand module helps you interconnect your system with other systems via the Wiegand interface. The module is installed under another module, i.e. requires no separate position.	**Part No. 9155038** **2N® Helios IP Verso** – Tamper Switch The tamper switch detects any intercom opening or upper cover removal. The module is installed on a special place and so requires no separate position.

Part No. 9155039 Blank module	**Part No. 9155040** **2N® Helios IP Verso** – RFID Card Reader, NFC Preparation The card reader module helps you control access with contactless cards or key fobs. The module supports the 13.56MHz cards or carriers. **ISO14443A** Mifare Classic 1k & 4k, DESFire EV1, Mini, Plus S&X, SmartMX, Ultralight, Ultralight C, SLE44R35, my-d move (SLE66Rxx), PayPass, Legic Advant **ISO14443B** Calypso, CEPAS, Moneo, SRI512, SRT512, SRI4K, SRIX4K, PicoPass, HID iCLASS NFC SmartPhone with NFC/HCE support, since Android version 4.3	**Part No. 9155050** Interconnecting cable, 1m
Part No. 9155051 Blank module, 1-button	**Part No. 916020** RJ45 connector cable	

Mounting Accessories

Part No. 9155014 Flush mounting box, 1-module	**Part No. 9155015** Flush mounting box, 2-module	**Part No. 9155016** Flush mounting box, 3-module
Part No. 9155061 Backplate, 1-module	**Part No. 9155062** Backplate, 2-module	**Part No. 9155063** Backplate, 3-module

Part No. 9155064 Backplate, 2(w)x2(h)-module	**Part No. 9155065** Backplate, 2(w)x3(h)-module	**Part No. 9155066** Backplate, 3(w)x2(h)-module
Part No. 9155067 Backplate, 3(w)x3(h)-module		

The **2N® Helios IP Verso** mounting boxes are compatible with the **2N® Access Unit**; refer to the table:

Part No.	Name	Description
9155011	**2N® Helios IP Verso** – Flush mounting frame, 1-module	Covering frame for the 1-module brick/plasterboard flush mounting box. This 1-module frame is used when a module is added to an existing installation or a separate module is mounted onto an extended interconnecting cable, for an OUT card reader, for example. Remember to order the frame when you order a 1-module flush mounting box, Part No. 9155014.
9155012	**2N® Helios IP Verso** – Flush mounting frame, 2-module	Covering frame for the 2-module brick/plasterboard flush mounting box. Remember to order the frame when you order a 2-module flush mounting box, Part No. 9155015.
9155013	**2N® Helios IP Verso** – Flush mounting frame, 3-module	Covering frame for the 3-module brick/plasterboard flush mounting box. Remember to order the frame when you order a 3-module flush mounting box, Part No. 9155016.
9155014	**2N® Helios IP Verso** – Flush mounting box, 1-module	The box is designed for brick/plasterboard flush mounting of a 1-module installation. Supplied including accessories for multiple box assemblies.

9155015	**2N® Helios IP Verso** – Flush mounting box, 2-module	The box is designed for brick/plasterboard flush mounting of a 2-module installation. Supplied including accessories for multiple box assemblies.
9155016	**2N® Helios IP Verso** – Flush mounting box, 3-module	The box is designed for brick/plasterboard flush mounting of a 3-module installation. Supplied including accessories for multiple box assemblies.
9155021	**2N® Helios IP Verso** – Wall mounting frame, 1-module	Covering frame for wall (surface) mounting. This 1-module frame is used when a module is added to an existing installation or a separate module is mounted onto an extended interconnecting cable, for an OUT card reader, for example.
9155022	**2N® Helios IP Verso** – Wall mounting frame, 2-module	Covering frame for wall (surface) mounting.
9155023	**2N® Helios IP Verso** – Wall mounting frame, 3-module	Covering frame for wall (surface) mounting.
9155061	**2N® Access Unit** - Backplate, 1-module	A 1-module backplate for glass or uneven surface mounting.
9155062	**2N® Access Unit** - Backplate, 2-module	A 2-module backplate for glass or uneven surface mounting.
9155063	**2N® Access Unit** - Backplate, 3-module	A 3-module backplate for glass or uneven surface mounting.
9155064	**2N® Access Unit** - Backplate, 2(w)x2(h)-module	A 2(w)x2(h)-module backplate for glass or uneven surface mounting..
9155065	**2N® Access Unit** - Backplate, 2(w)x3(h)-module	A 2(w)x3(h)-module backplate for glass or uneven surface mounting.
9155066	**2N® Access Unit** - Backplate, 3(w)x2(h)-module	A 3(w)x2(h)-module backplate for glass or uneven surface mounting.
9155067	**2N® Access Unit** - Backplate, 3(w)x3(h)-module	A 3(w)x3(h)-module backplate for glass or uneven surface mounting.
9155030	**2N® Access Unit** - Infopanel	The Infopanel module helps you place such information as building number, opening hours and similar into the intercom installation. The Infopanel has software-controlled backlight.
9155031	**2N® Access Unit** - Keypad	The numeric keypad module helps you dial a user via its phone directory position or phone number and enter a numeric code to control a lock and/or other functions. The keypad digits and symbols are backlight.
9155032	**2N® Access Unit** - RFID card reader 125 kHz	The card reader module helps you control access with contactless cards or key fobs. The module supports the 125kHz EM-4100, EM4102 or HID Proximity cards.

9155033	**2N® Access Unit** - RFID card reader 13.56 MHz	The card reader module helps you control access with contactless cards or key fobs. The module supports the 13.56MHz cards or carriers. **ISO14443A** Mifare Classic 1k & 4k, DESFire EV1, Mini, Plus S&X, SmartMX, Ultralight, Ultralight C, SLE44R35, my-d move (SLE66Rxx), PayPass, Legic Advant **ISO14443B** Calypso, CEPAS, Moneo, SRI512, SRT512, SRI4K, SRIX4K, PicoPass, HID iCLASS
9155034	**2N® Access Unit** - I/O module	The logic input/output module helps you integrate various sensors and control doors and other equipment. The module is installed under another module, i.e. requires no separate position.
9155035	**2N® Access Unit** - Tamper switch	The module with 5 mechanical buttons provides quick dialling of users. The buttons are backlit and can be equipped with name tags.
9155036	**2N® Access Unit** - Electronic buttons	Under preparation - The module with 5 electronic buttons provides quick dialling of users via the phone directory. Use the arrow buttons to scroll over five positions in the phone directory. Press the button next to the name to choose an item in the selected group of five names.
9155037	**2N®** Access Unit - Wiegand module	The Wiegand module helps you interconnect your system with other systems via the Wiegand interface. The module is installed under another module, i.e. requires no separate position.
9155038	**2N® Access Unit** - Tamper switch	The tamper switch detects any intercom opening or upper cover removal. The module is installed on a special place and so requires no separate position.
9155040	**2N® Access Unit** - RFID card reader, preparation for NFC	The card reader module helps you control access with contactless cards or key fobs. The module supports the 13.56MHz cards or carriers. **ISO14443A** Mifare Classic 1k & 4k, DESFire EV1, Mini, Plus S&X, SmartMX, Ultralight, Ultralight C, SLE44R35, my-d move (SLE66Rxx), PayPass, Legic Advant **ISO14443B** Calypso, CEPAS, Moneo, SRI512, SRT512, SRI4K, SRIX4K, PicoPass, HID iCLASS **NFC** SmartPhone with NFC/HCE support, since Android version 4.3

The **2N® Access Unit** is designed for outdoor applications and requires no additional roof.

Choose the appropriate mounting frame and box for your **2N® Access Unit** installati on.

Indoor Units

Part No. 91378365 **2N® Indoor Touch** – black The elegant indoor touch panel **2N® Indoor Touch** is designed for all intercoms of the **2N® Helios IP** family. It helps you see the person in front of your door, open the door lock and/or switch on the entrance hall lights.	**Part No. 91378365WH** **2N® Indoor Touch** – white The elegant indoor touch panel **2N® Indoor Touch** is designed for all intercoms of the **2N® Helios IP** family. It helps you see the person in front of your door, open the door lock and/or switch on the entrance hall lights.	
Part No. 91378366 **2N® Indoor Touch** – black WiFi The elegant indoor touch panel **2N® Indoor Touch** is designed for all intercoms of the **2N® Helios IP** family. It helps you see the person in front of your door, open the door lock and/or switch on the entrance hall lights.	**Part No. 91378367** **2N® Indoor Touch** – black WiFi + NFC The elegant indoor touch panel **2N® Indoor Touch** is designed for all intercoms of the **2N® Helios IP** family. It helps you see the person in front of your door, open the door lock and/or switch on the entrance hall lights.	**Part No. 91378368** **2N® Indoor Touch** – black NFC The elegant indoor touch panel **2N® Indoor Touch** is designed for all intercoms of the **2N® Helios IP** family. It helps you see the person in front of your door, open the door lock and/or switch on the entrance hall lights.

VoIP Phones

Part No. 91378357 Grandstream GXV3240 VoIP video phone A successor to the popular GXV3140 model, GXV3240 provides comfortable video calls via the IP network. It is controlled via a touch display and keypad.	**Part No. 91378358** Grandstream GXV3275 VoIP video phone A successor to the popular GXV3175 model, GXV3275 provides comfortable video calls via the IP network. It is controlled via a touch display.

Electric Locks

Part No. 932071E BEFO 11211 12V/230mA DC low consumption	**Part No. 932081E** BEFO 11221 with momentary pin 12V/230mA DC low consumption A very short electric pulse is enough to put the lock into the OPEN position and unlock the door. After passage, the lock gets in the CLOSED (relax) position again.	**Part No. 932091E** BEFO 11211MB with mechanical blocking 12V/230mA DC low consumption You can set the lever mechanically into the OPEN or CLOSED position. When OPEN, the lock is constantly open, when CLOSED, it is a standard lock.

Tip

- FAQ: Electric locks - Differences between locks for 2N® Helios IP

Power Supply

Part No. 91378100 PoE injector - without cable **Part No. 91378100E** PoE injector - with EU cable **Part No. 91378100US** E injector - with US cable For intercom supply via Ethernet cable where PoE is absent.	**Part No. 91341481E** 12 V / 2 A adapter A stabilised power supply is required where PoE is not used.	**Part No. 932928** 12 V transformer for electric lock

Additional Modules

Part No. 9159010 Security relay A simple, security enhancing add-on, which prevents lock tampering. Installed between the intercom, from which it is also supplied, and the lock to be controlled.	**Part No. 9137420E** An external FRFID card reader connected to the PC via a USB interface. Useful for system administration and adding EM41xx cards via a PC application.**2N® Helios IP Manager**.	**Part No. 9137410E** External IP relay - 1 output A stand-alone IP device, which can be controlled from an IP intercom via HTTP commands. Helps control a device remotely.
Part No. 9137411E External IP relay - 4 outputs, PoE A stand-alone IP device, which can be controlled from an IP intercom viaHTTPcommands. Helps control a device remotely.	**Part No. 9134165E** RFID card, 125 kHz of EM4100 type	**Part No. 9134166E** RFID key fob, 125 kHz

Part No. 9134173 Mifare RFID card, 13.56 MHz	**obj. č. 9134174** Mifare RFID key fob, 13.56 MHz	**Part No. 9159014EU/US/UK** **2N® 2Wire** (set of 2 adapters plus EU/US/UK power supply) Converter **2N® 2Wire** Helps you connect any IP device to your existing two-wire cabling from the original door bell/phone without reconfiguring. All you have to do is have one **2N® 2Wire at each end of the cable** and connect one of them at least to the power supply. **2N® 2Wire** then provides PoE s upply not only to the other converter, but also to all the IP terminal equipment connected.
Part No. 9159013 Departure button Connects the logic input for door unlocking from inside the building.	**Part No. 9159012** Magnetic door contact A door installation set for door opening status identification. Used for door protection, open door detection or violent door opening.	**Part No. 9159030** External RFID card reader, 125 kHz A secondary card reader to an internal card reader. Provides card access control from both sides of the door. IP67 covering. Useful for outdoor applications too. Supports the EM4100 and EM4102 cards.

Part No. 9154004 Waterproof metal button (suitable for the Indoor RFID card reader)		

Tip

- Refer to the local 2N distributor for more accessories and specifications please.

1.2 Terms and Symbols

The following symbols and pictograms are used in the manual:

Safety

- **Always abide** by this information to prevent persons from injury.

Warning

- **Always abide** by this information to prevent damage to the device.

Caution

- **Important information** for system functionality.

Tip

- **Useful information** for quick and efficient functionality.

Note

- Routines or advice for efficient use of the device.

2. Description and Installation

Here is what you can find in this section:

- 2.1 Before You Start
- 2.2 Mechanical Installation
- 2.3 Electric Installation
- 2.4 Extending Module Connection
- 2.5 Mounting Completion

2.1 Before You Start

Product Completeness Check

Check your **2N® Access Unit** package for completeness before installation.

- 1 **2N® Access Unit**
- **Brief manual**

2.2 Mechanical Installation

Mounting Types Overview

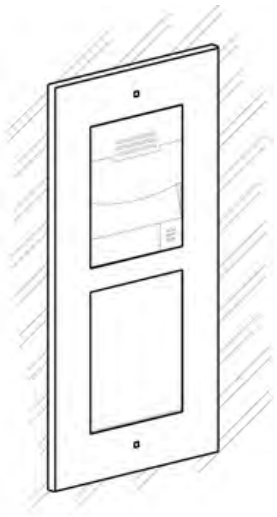
Refer to the table below for a list of mounting types and necessary components. You can assemble multiple units in all the mounting types.

Flush mounting - classic bricks

- incl. hollow bricks, thermally insulated walls, etc.

What you need for mounting:

- a properly cut hole as instructed in the box package
- plaster, mounting glue, mounting foam or mortar as necessary
- **2N® Access Unit** , flush mounting boxes and frames
- 1 module: box Part No. **9155014**, frame part No. **9155011**
- 2 modules: box Part No. **9155015**, frame part No. **9155012**
- 3 modules: box Part No. **9155016**, frame part No. **9155013**



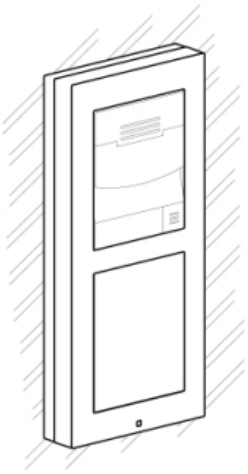
Flush mounting - plasterboard

What you need for mounting:

- a properly cut hole as instructed in the box package
- **2N® Access Unit** , flush mounting boxes and frames
- 1 module: box Part No. **9155014**, frame part No. **9155011**
- 2 modules: box Part No. **9155015**, frame part No. **9155012**
- 3 modules: box Part No. **9155016**, frame part No. **9155013**

Wall (surface) mounting

- (concrete and steel structures, entry barrier columns, interiors, etc.)



What you need for mounting:

- **2N® Access Unit** and proper frames
- 1 module: frame Part No. **9155021**
- 2 modules: frame Part No. **9155022**
- 3 modules: frame Part No. **9155023**

For uneven surfaces use a backplate, Part Nos. **9155061** - **9155067**, depending on the modules to be used.

Caution

- The warranty does not apply to the product defects and failures arisen as a result of improper mounting (in contradiction herewith). The manufacturer is neither liable for damage caused by theft within an area that is accessible after the attached electric lock is switched on. The product is not designed as a burglar protection device except when used in combination with a standard lock, which has the security function.
- When the proper mounting instructions are not met, water might get in and destroy the electronics. It is because the intercom circuits are under continuous voltage and water infiltration causes an electro-chemical reaction. The manufacturer's warranty shall be void for products damaged in this way!

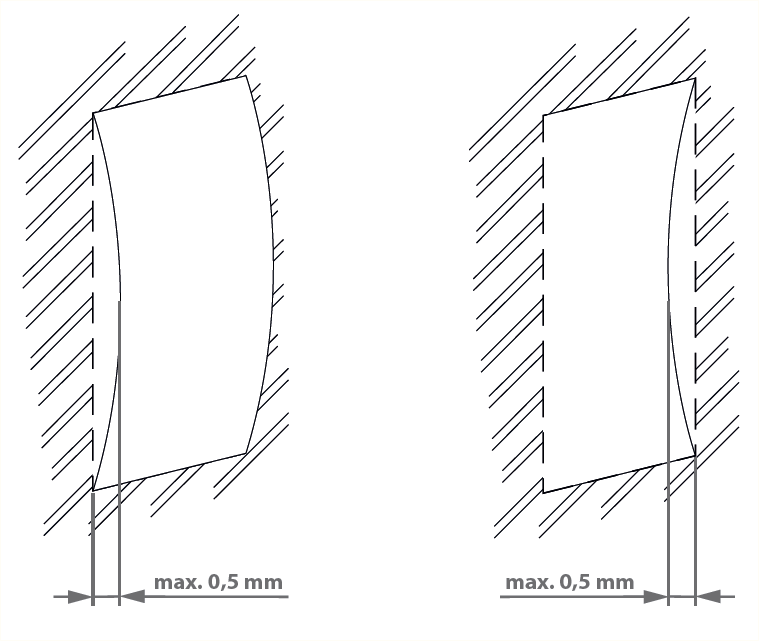
General Mounting Principles

Tip

- Select flush mounting where possible to make your product elegant looking, more vandal resistant and more secure.
- You are advised to buy the flush mounting box in advance and commission a building company to do the masonry for you, for example. The mounting box also helps you put your intercom exactly in the vertical position.

Caution

- Make sure that the diameter of the dowel holes is accurate to avoid falling out of the dowels! Use the mounting glue to secure the dowels if necessary.
- Make sure that the depth of the dowel holes is accurate!
- Do not use low-quality dowels to avoid falling out of the dowels of the wall!
- Having removed the front panel, make sure that no dirt gets inside the product (especially onto the sealing surface).
- Never turn an assembly of **2N® Access Unit** units after mounting. Make sure that the flush mounting boxes have been installed accurately.
- Check the plasterboard wall and room interior pressure values. If the difference between the values is too great (as a result, e.g., of overpressure ventilation), separate the intercom using, for example, the mounting box enclosed and seal the cable passage to avoid speaker damage.
- Surface mounting may cause problems on places exposed to potential vandalism (such as public garages, etc.). In this case, use steel anchoring elements instead of the dowels and screws included in the delivery.
- The wall mounting surface must be flat with the maximum inequality of 0.5 mm (e.g. prefabricated boards, glass, cut stone, etc.). If the surface is uneven, use flush mounting and a backplate, **Part Nos. 9155061 - 9155067**, or equalise the wall surface.



Risk of personal injury

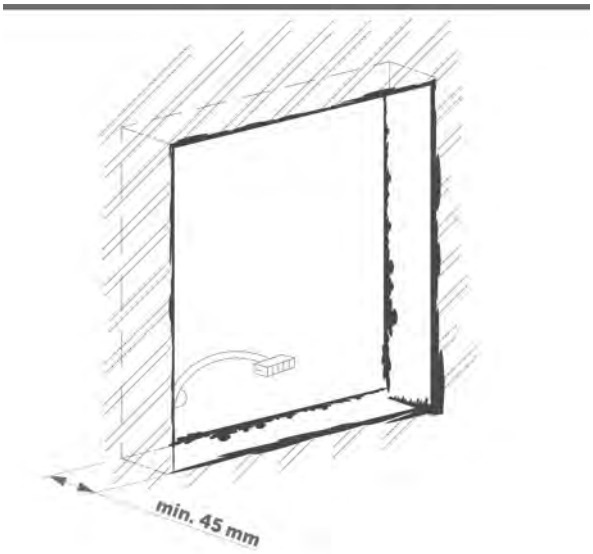
- Eliminate the risk of personal injury! Wall mounting is not recommended for narrow passages or places where people's attention is distracted by something else. The manufacturer shall not be liable for injuries in such cases!

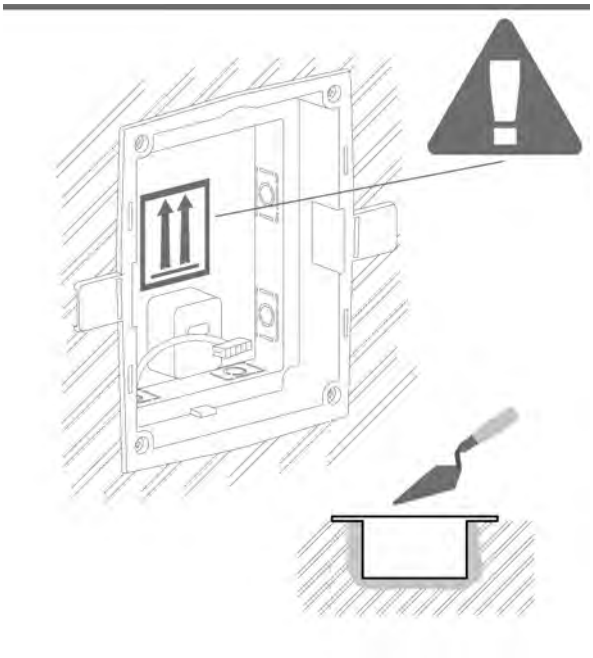
Module Installation

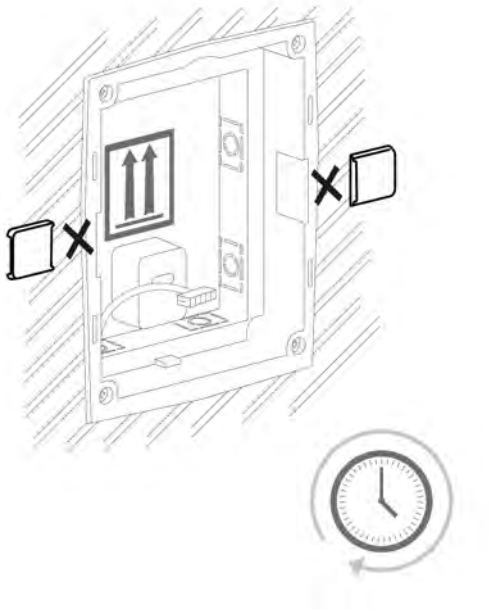
- 2.2.1 One Module Box
- 2.2.2 Two Module Box
- 2.2.3 Multiple Two Module Boxes
- 2.2.4 Three Module Box
- 2.2.5 Multiple Three Module Boxes
- 2.2.6 Tamper Switch and I/O Module

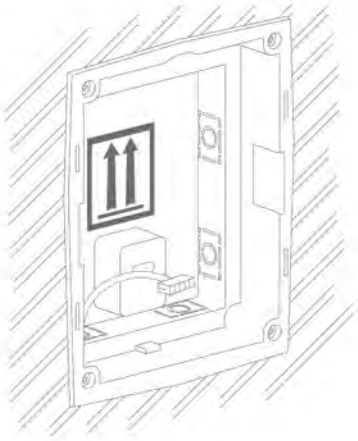
2.2.1 One Module Box

Flush mounting - classic bricks

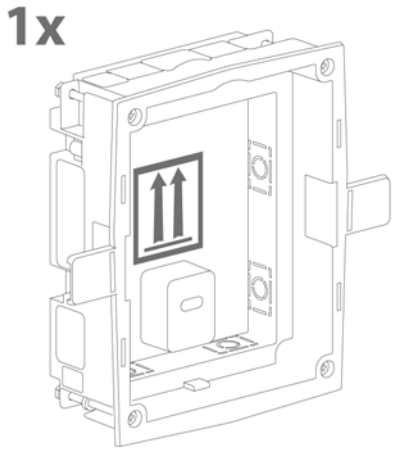


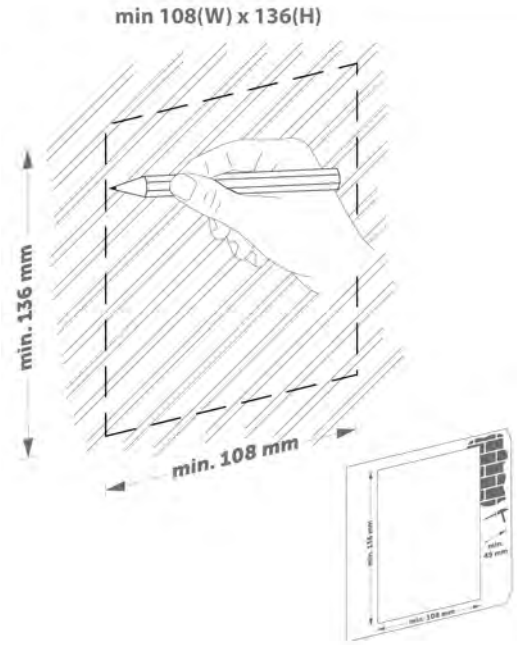


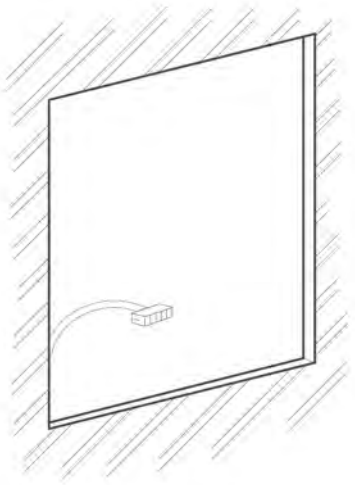


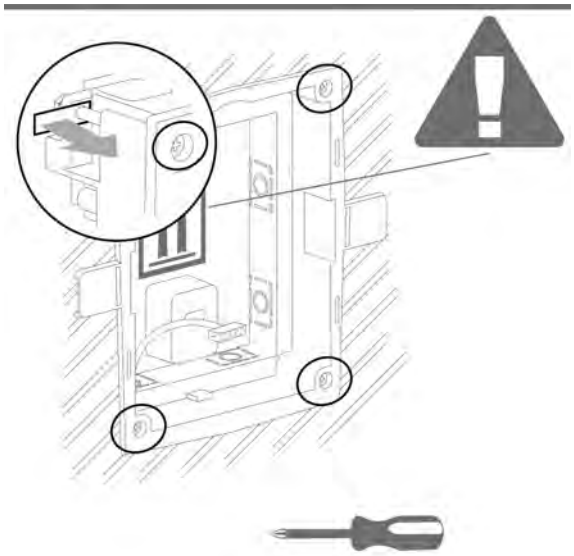


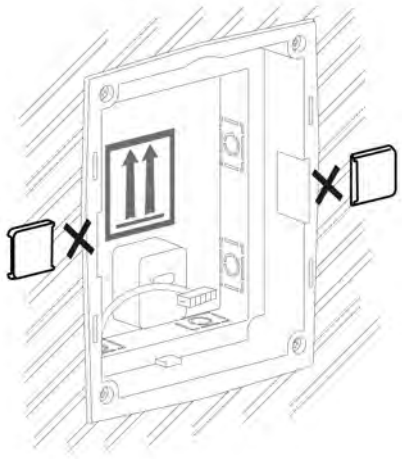
Flush mounting - plasterboard

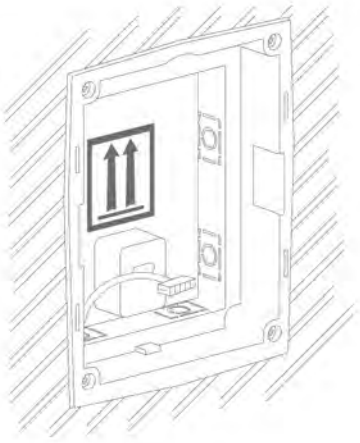




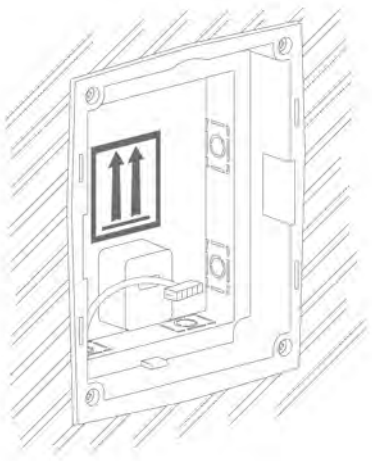


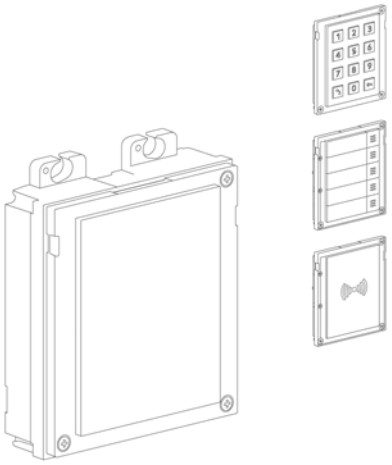


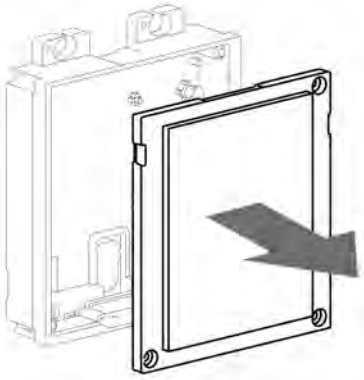


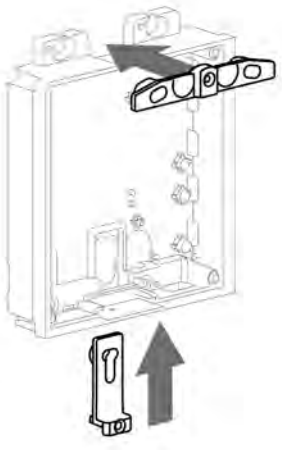


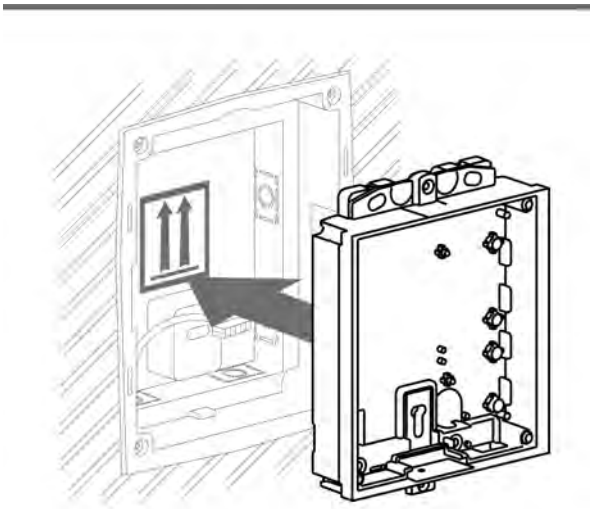
Module flush mounting

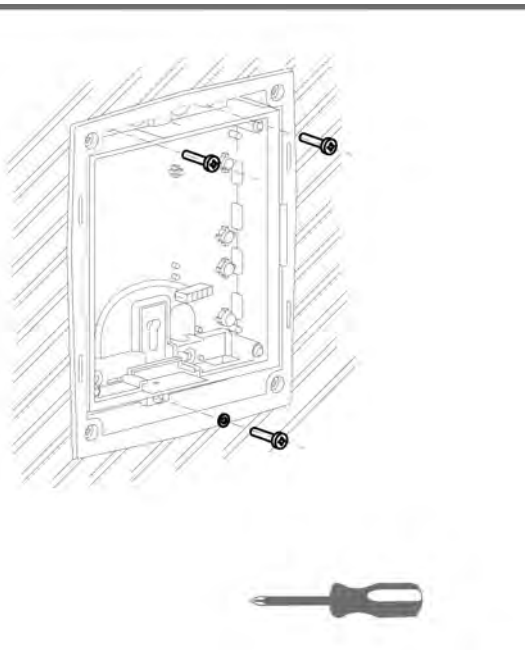


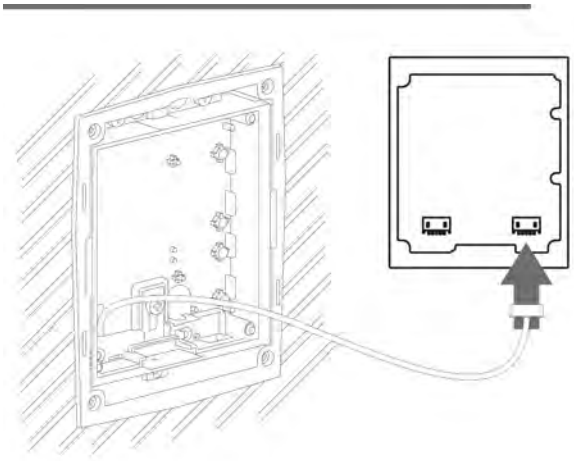


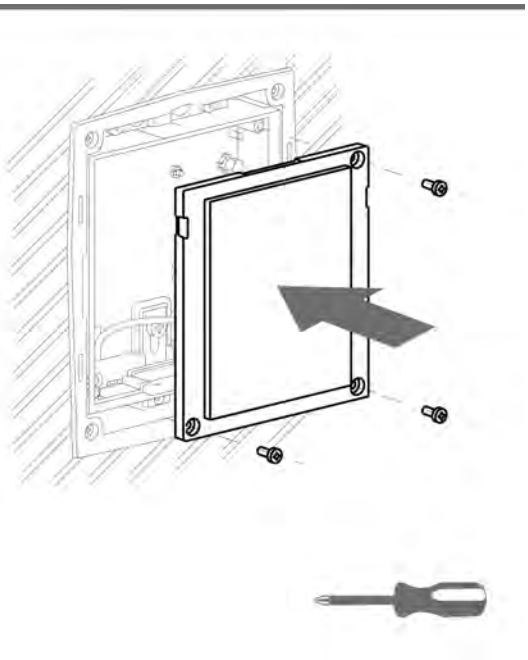


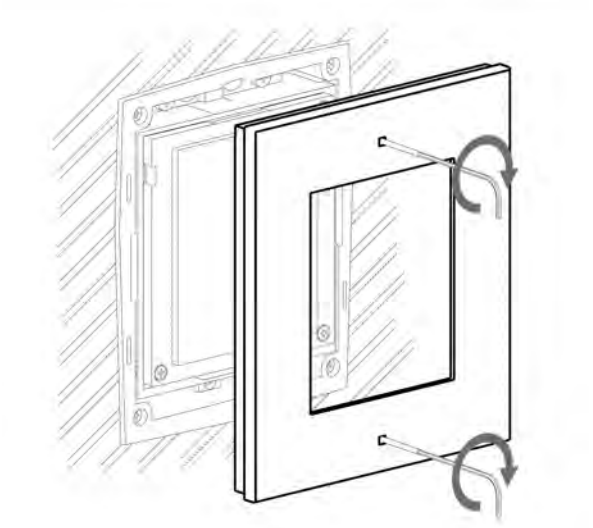


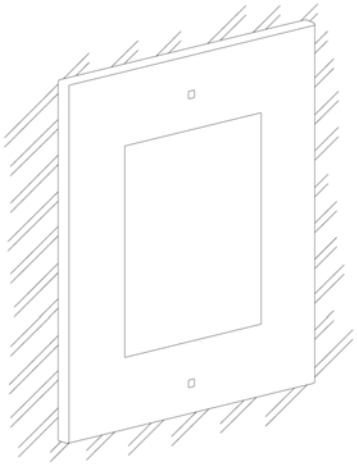




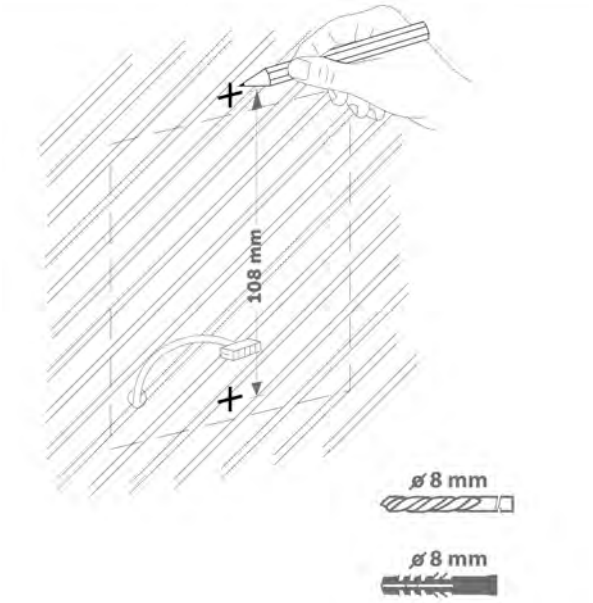


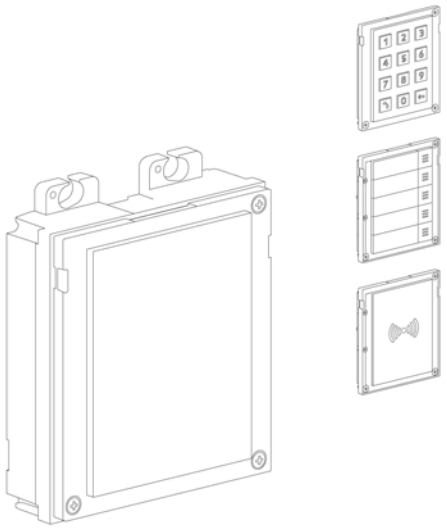


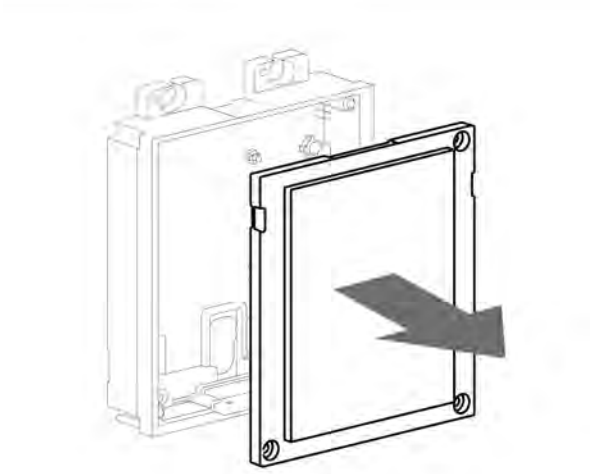


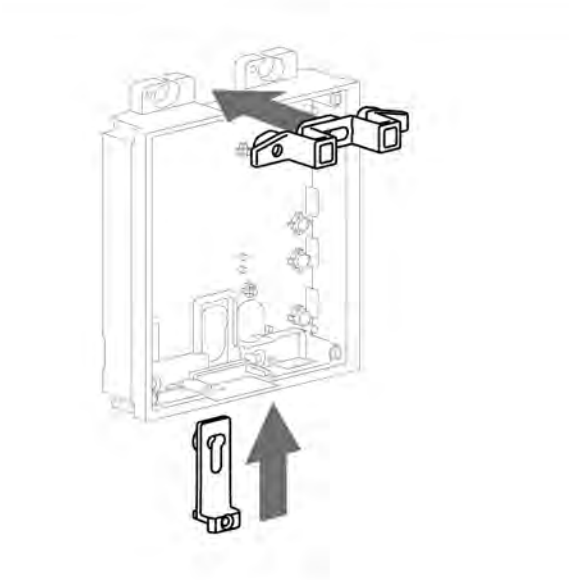


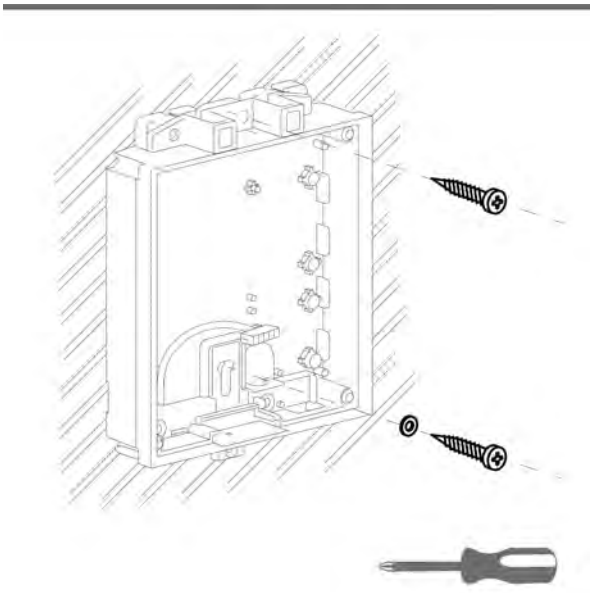
Wall mounting

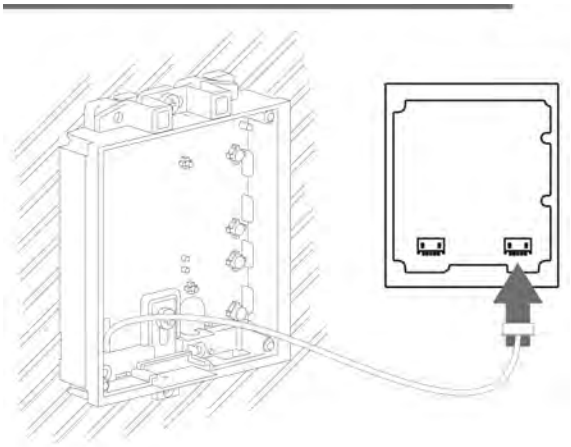


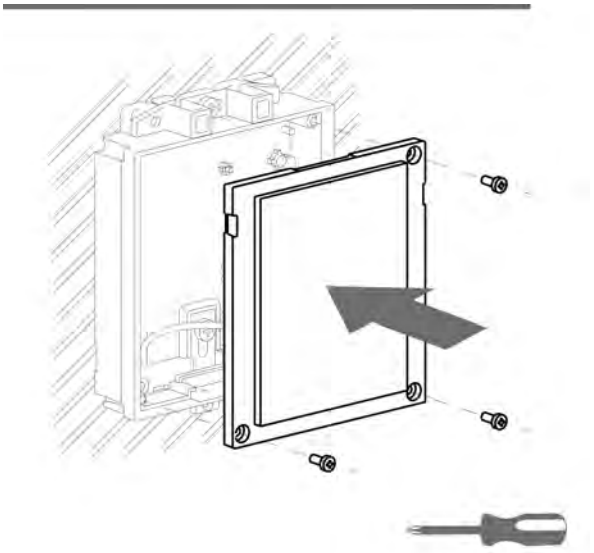


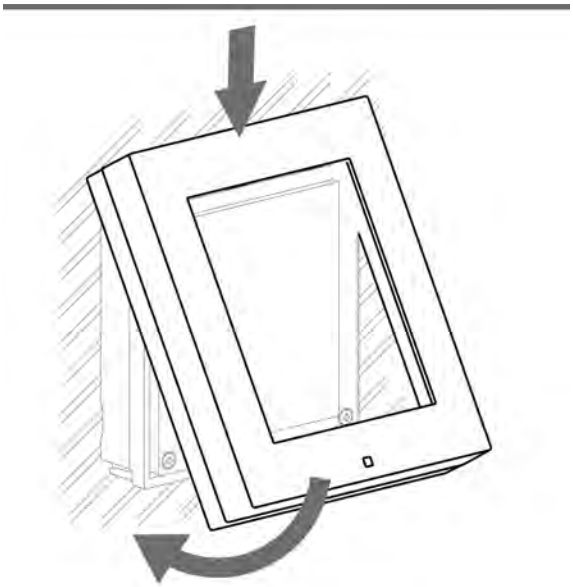


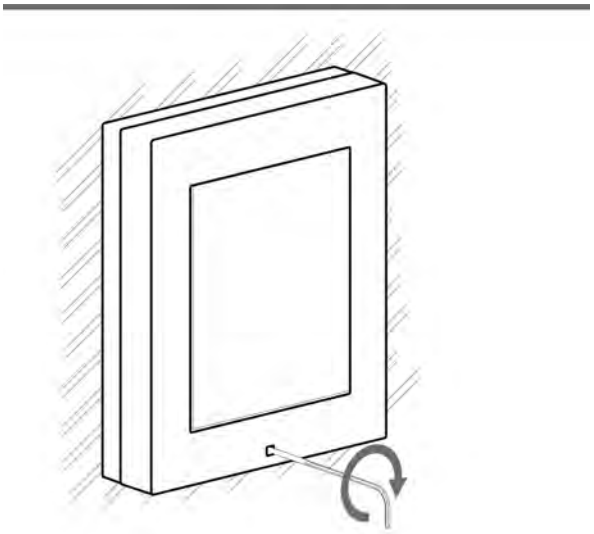


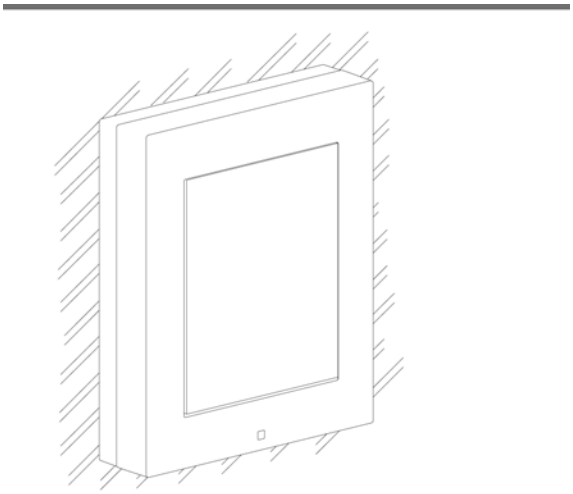






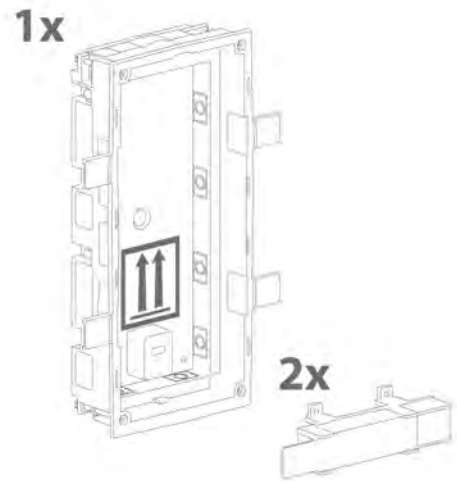


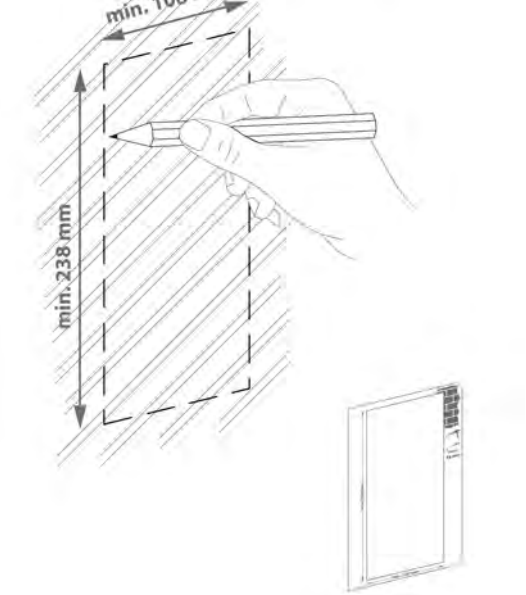


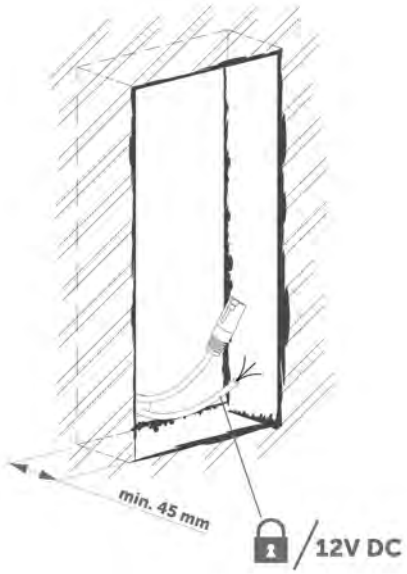


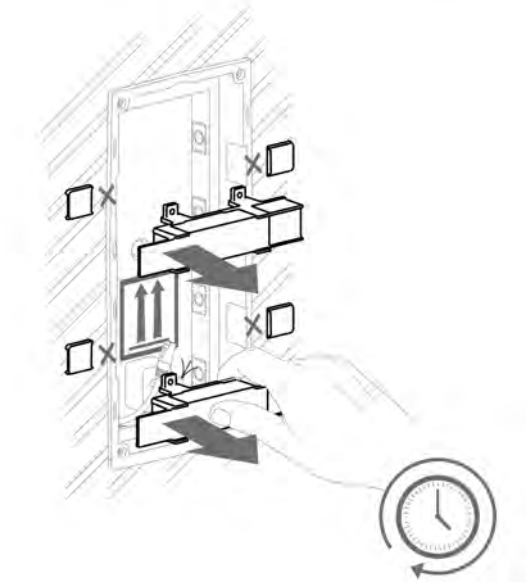
2.2.2 Two Module Box

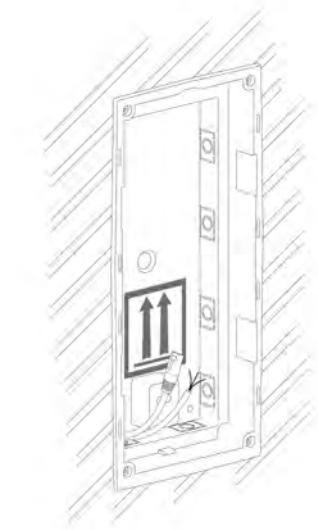
Flush mounting- classic bricks



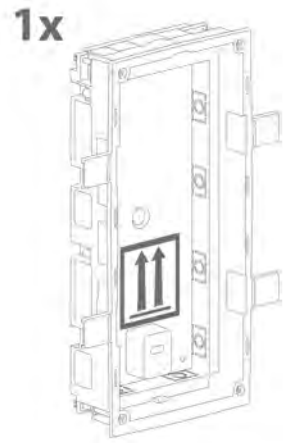


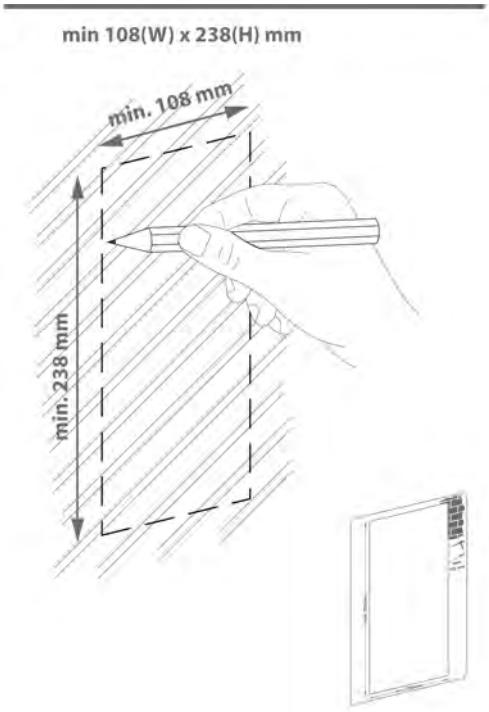


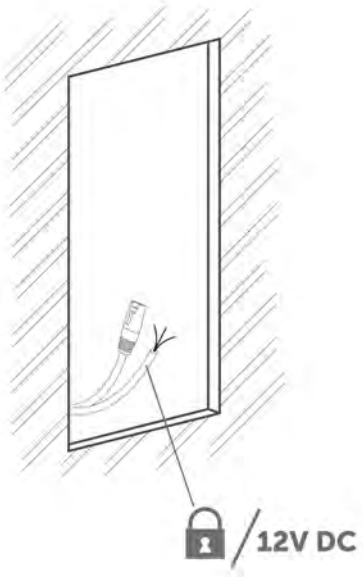


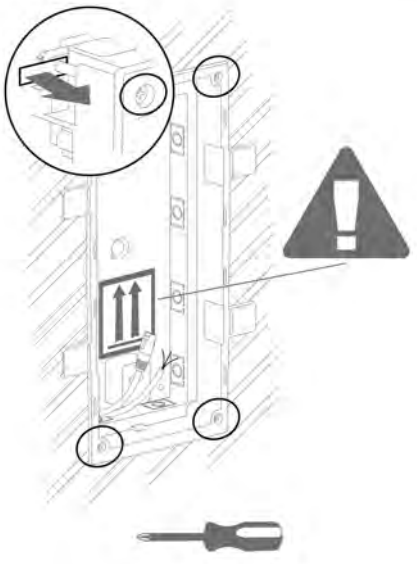


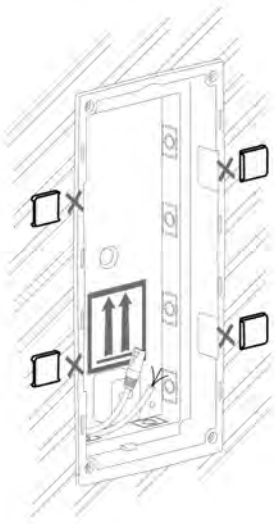
Flush mounting - plasterboard

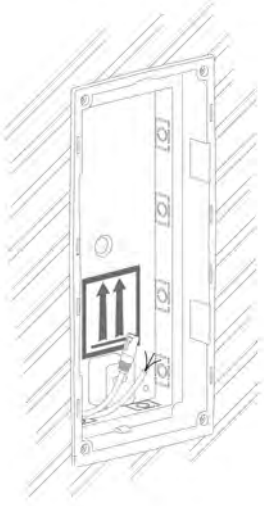




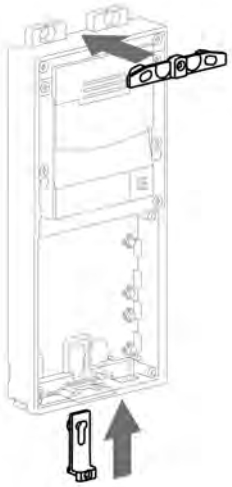


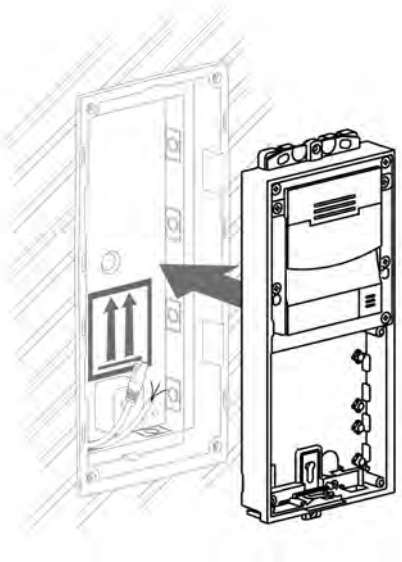


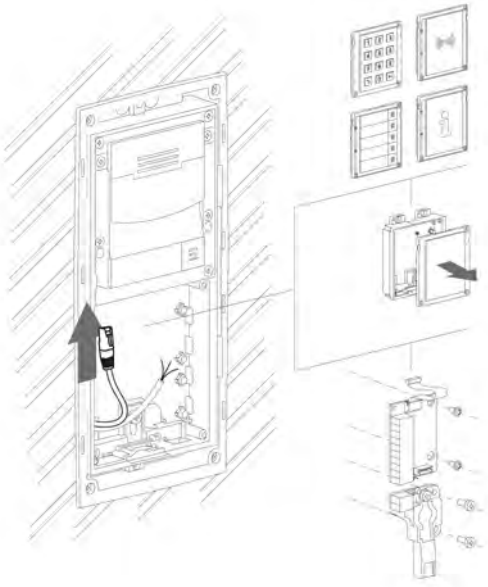


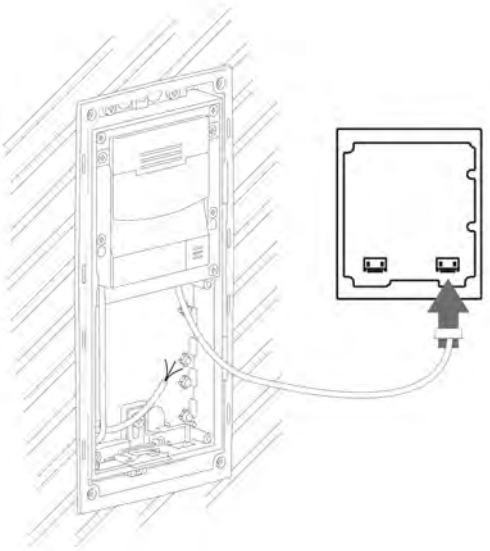


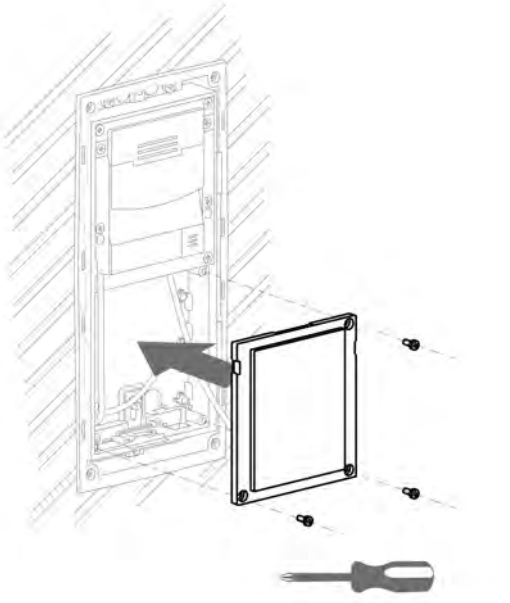
Module flush mounting

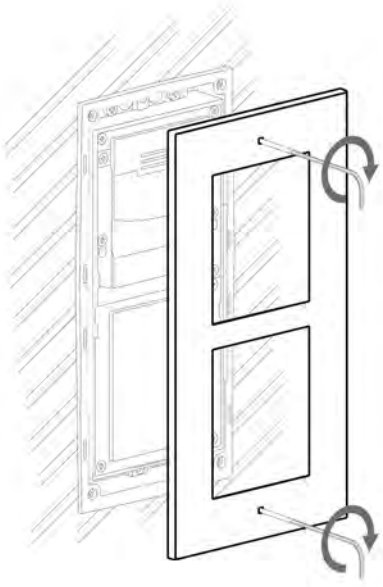


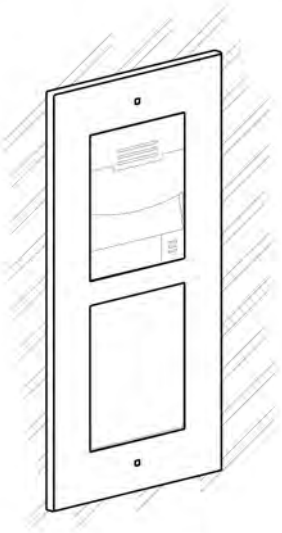




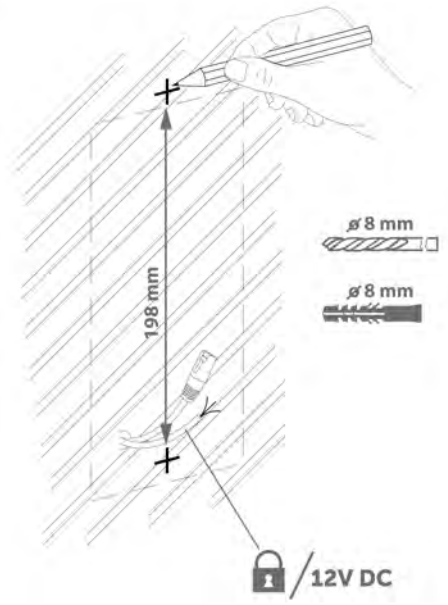


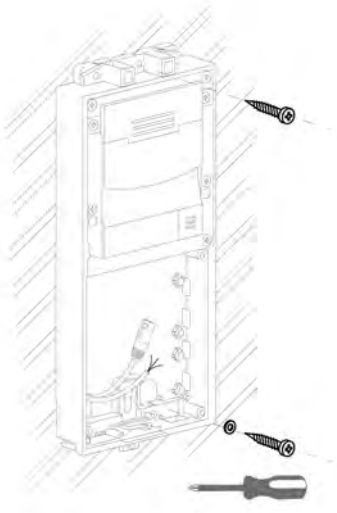


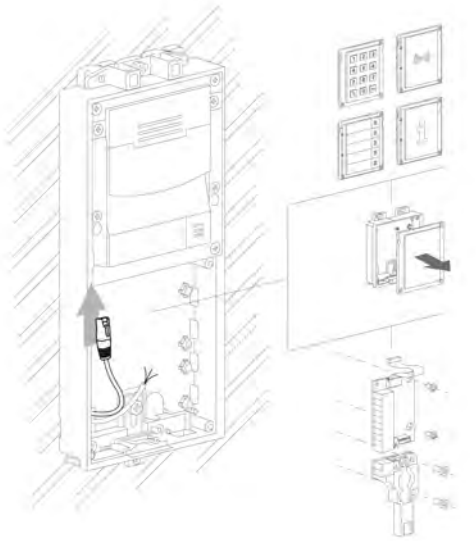


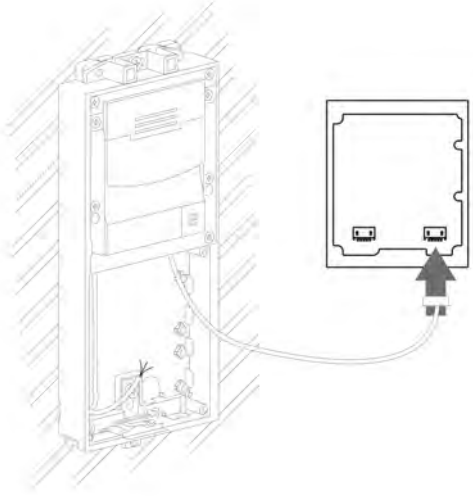


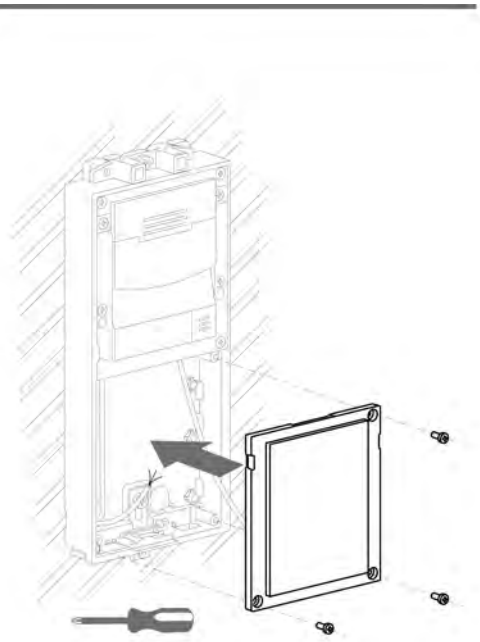
Wall mounting

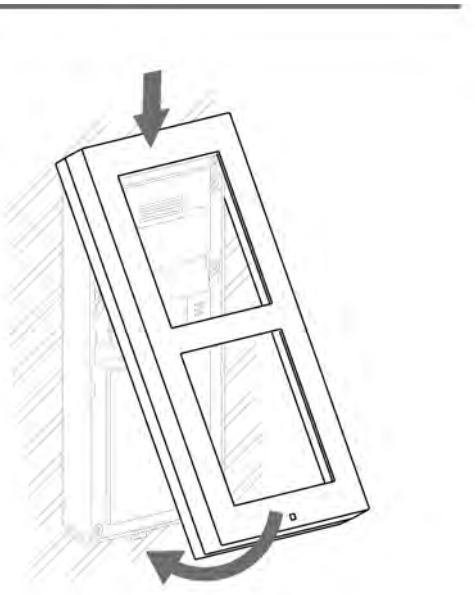


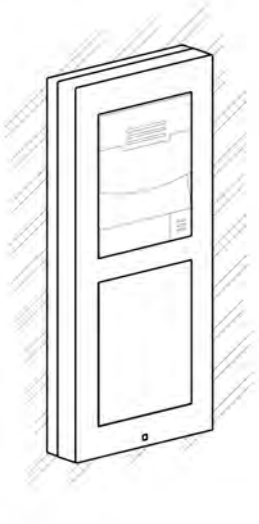






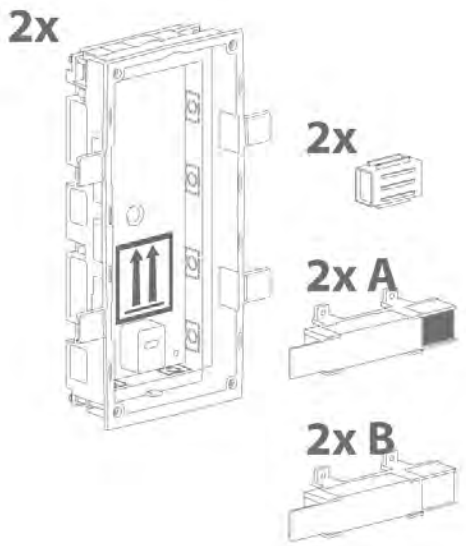


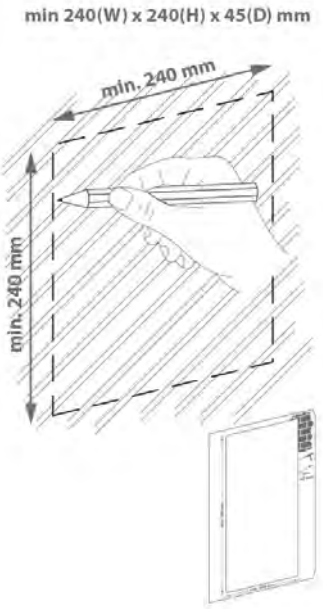


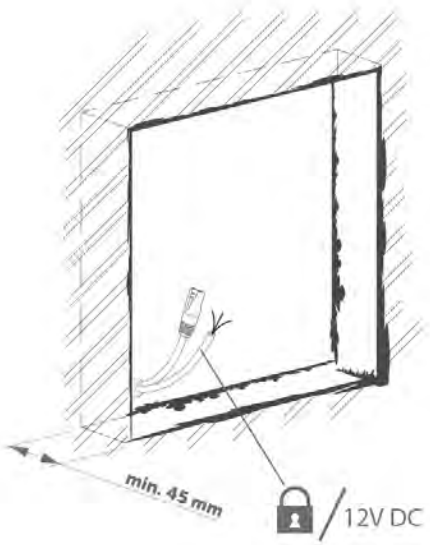


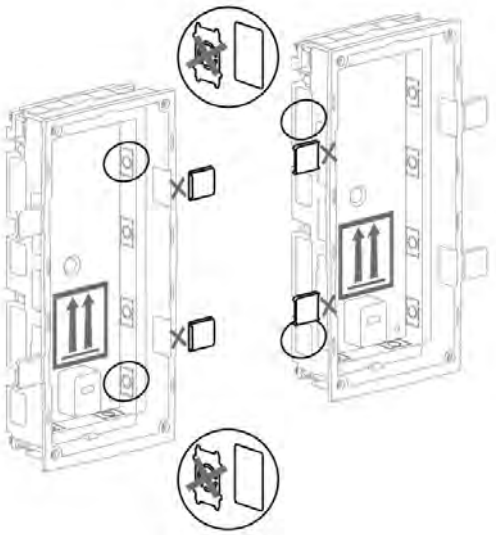
2.2.3 Multiple Two Module Boxes

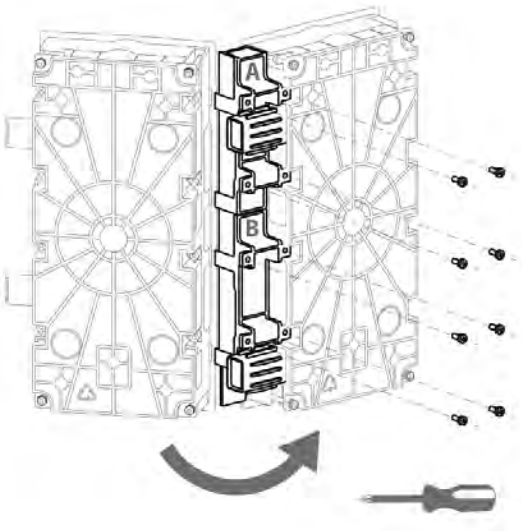
Flush mounting - classic bricks

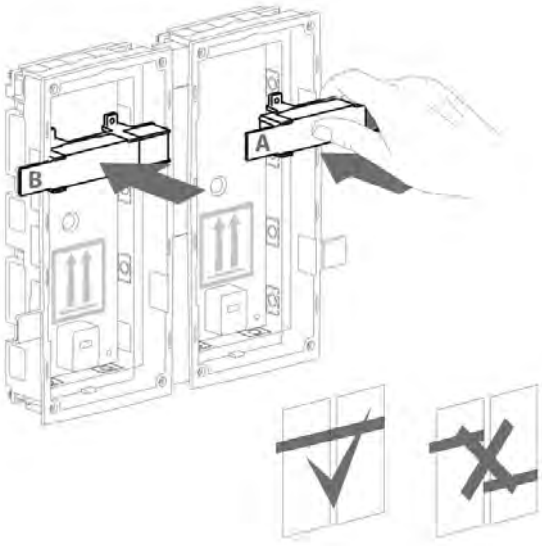


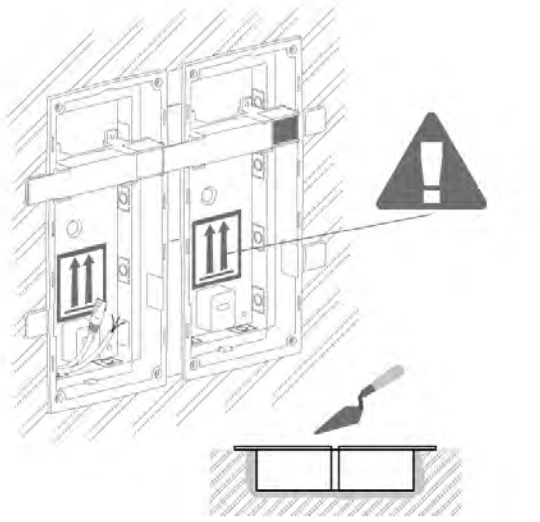


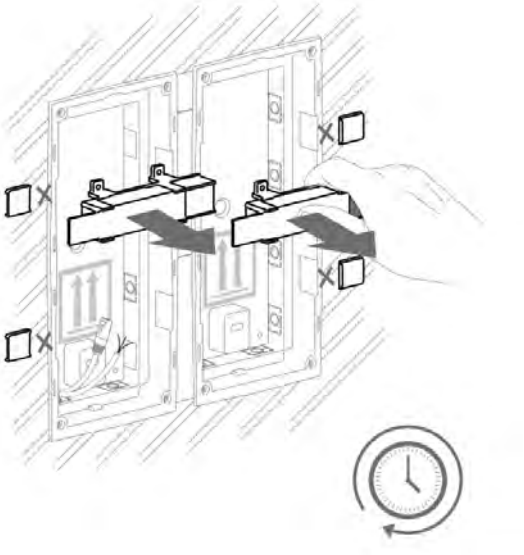

min. 45 mm
12V DC



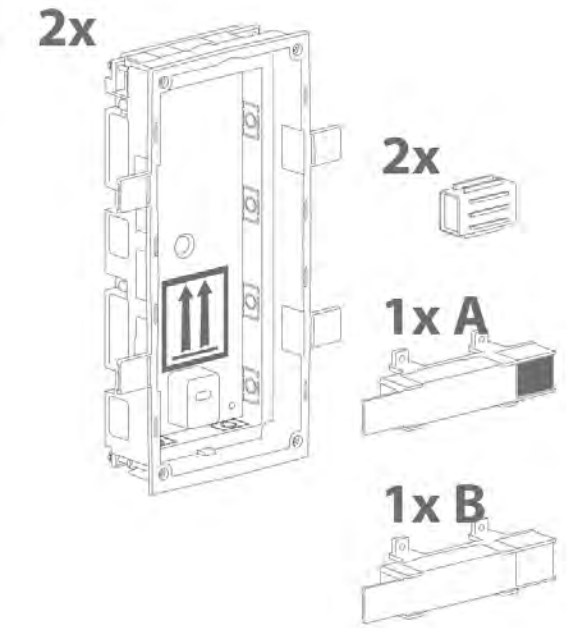

A
B

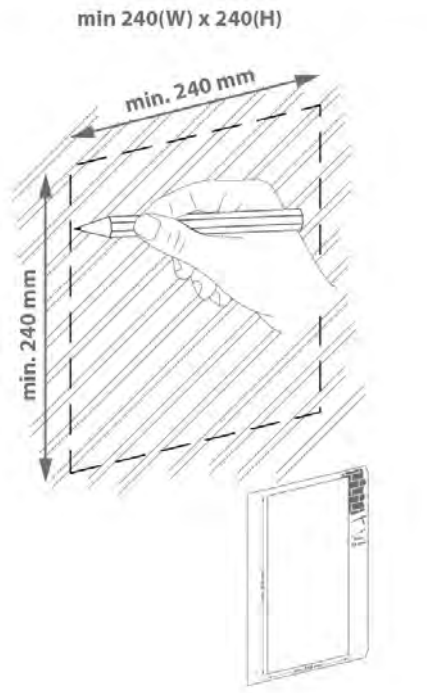

A
B

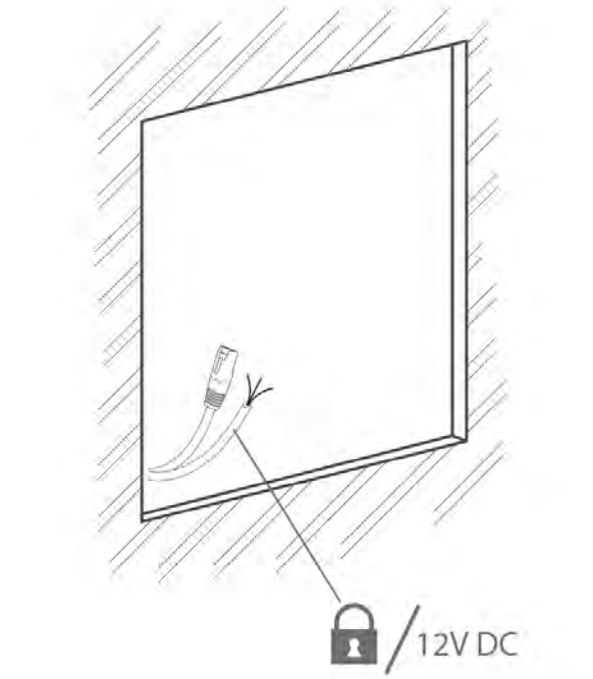


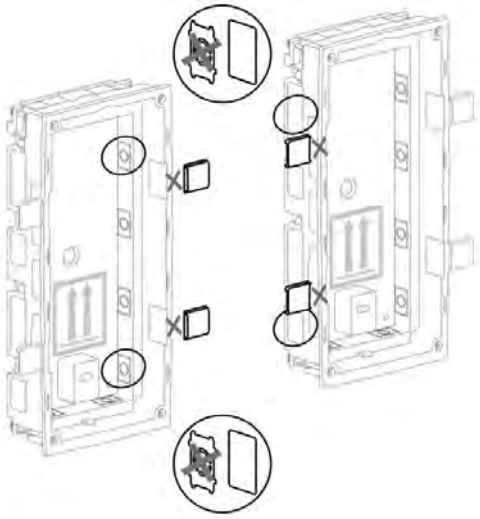


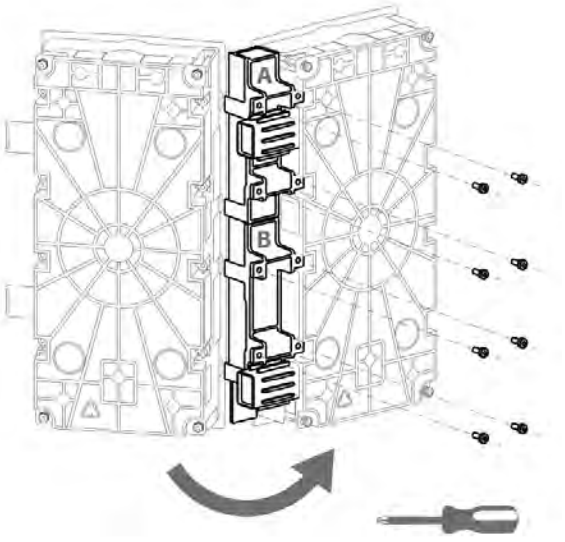
Flush mounting - plasterboard

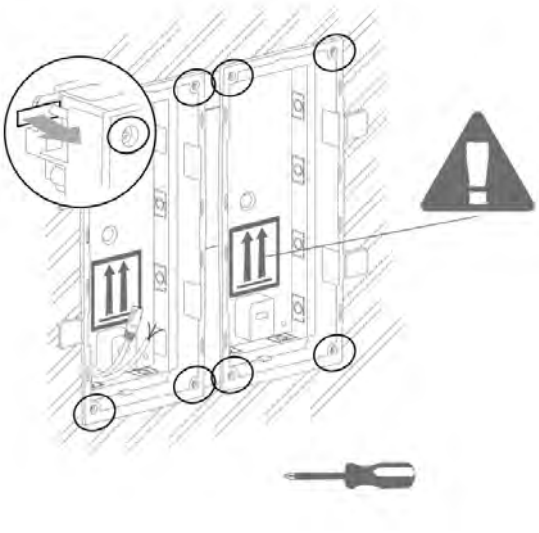


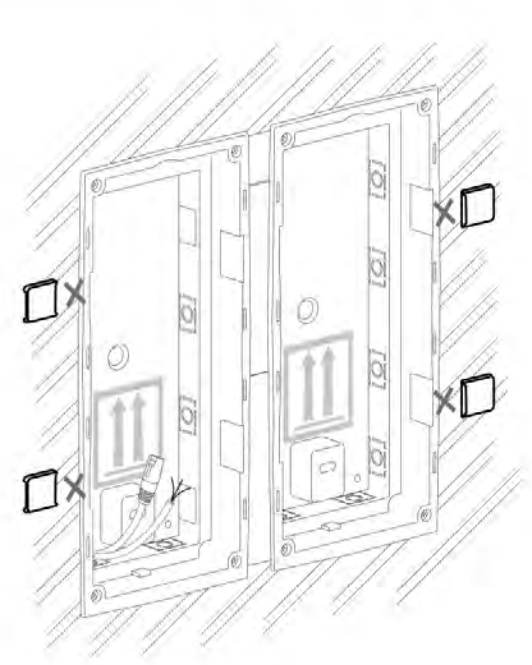


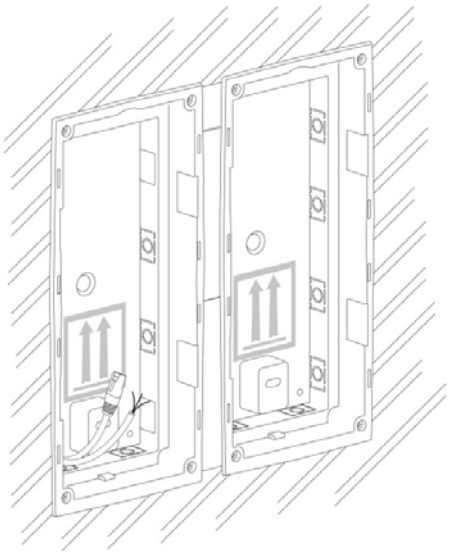

12V DC



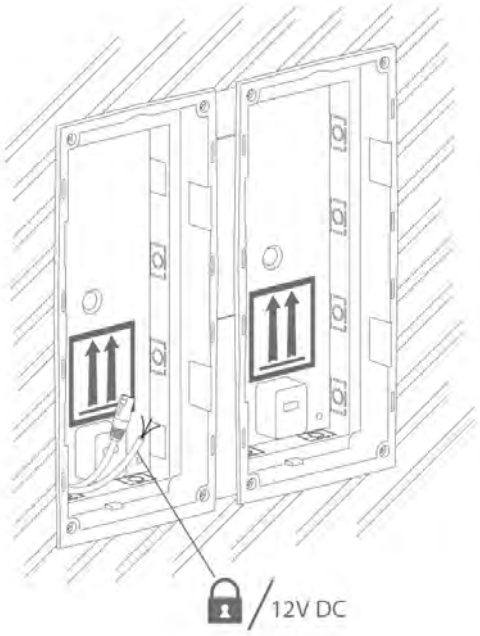

A
B

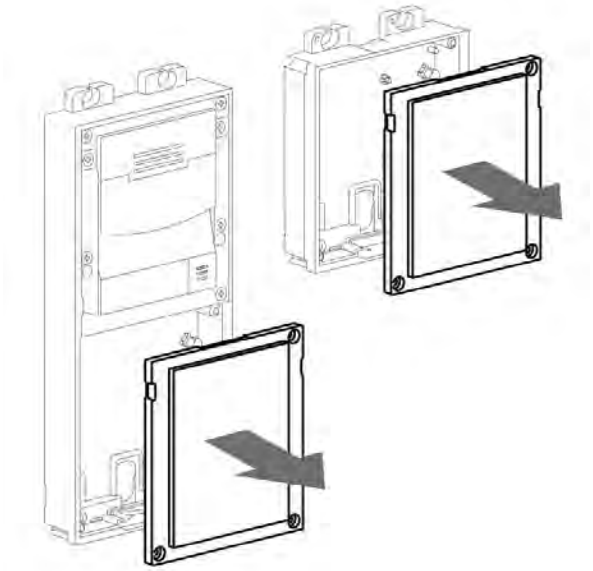


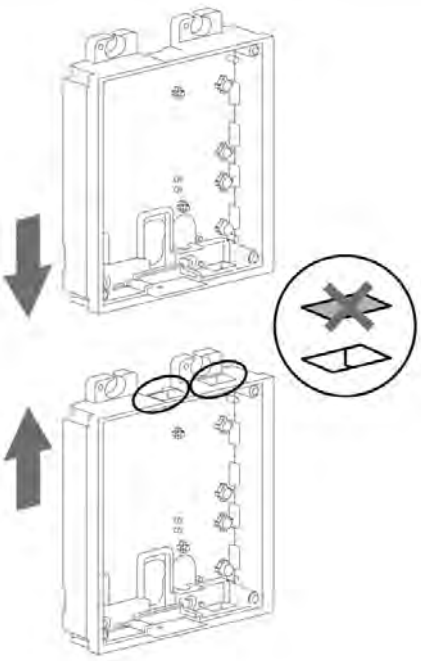


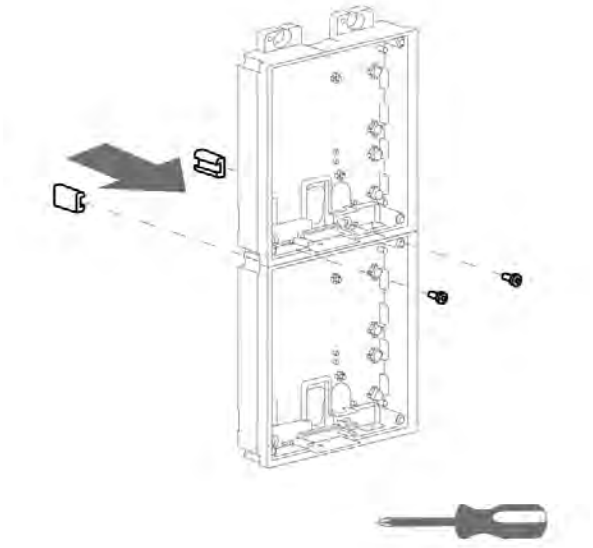


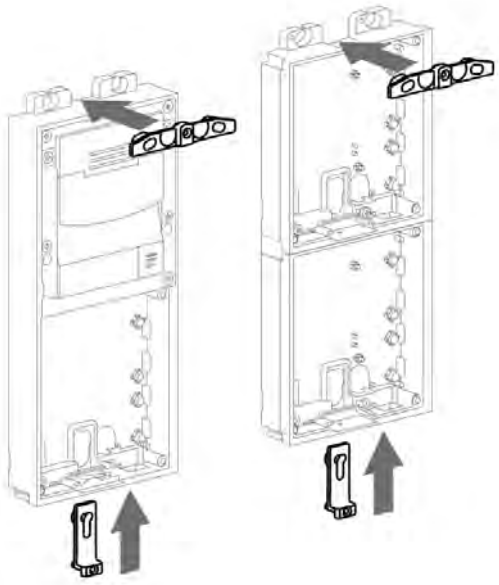
Module flush mounting

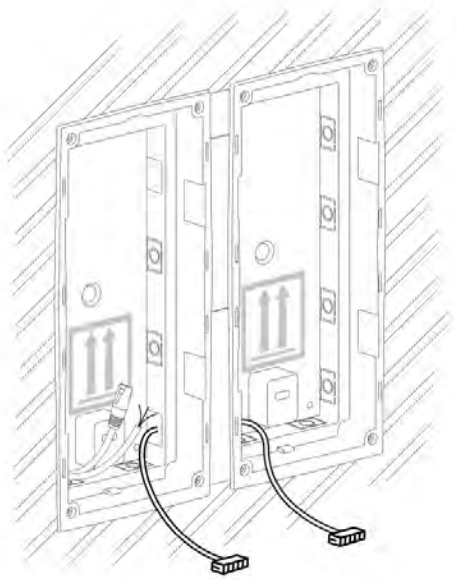


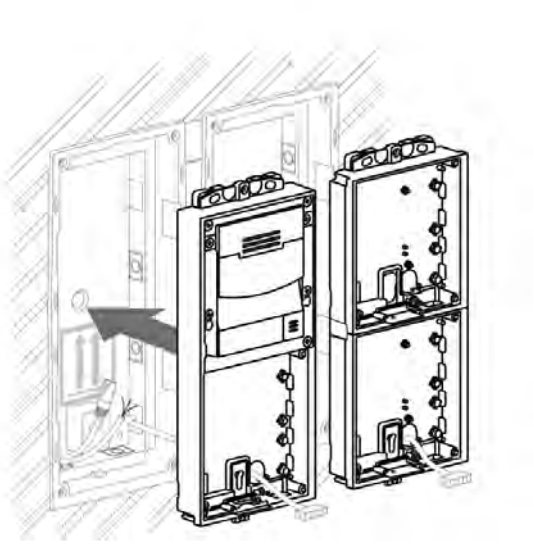


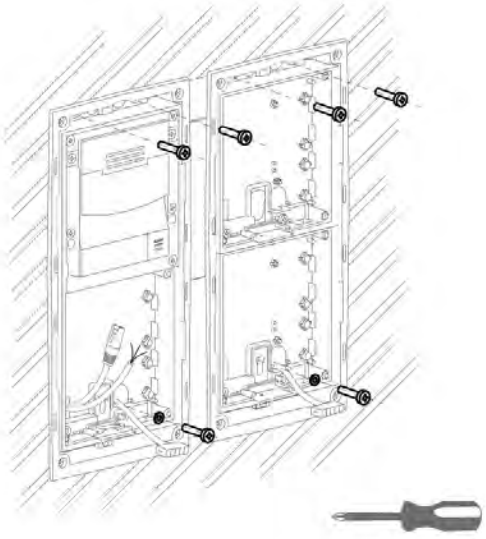


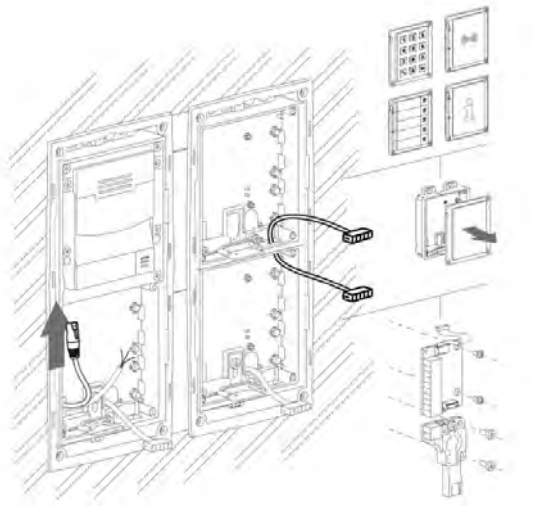


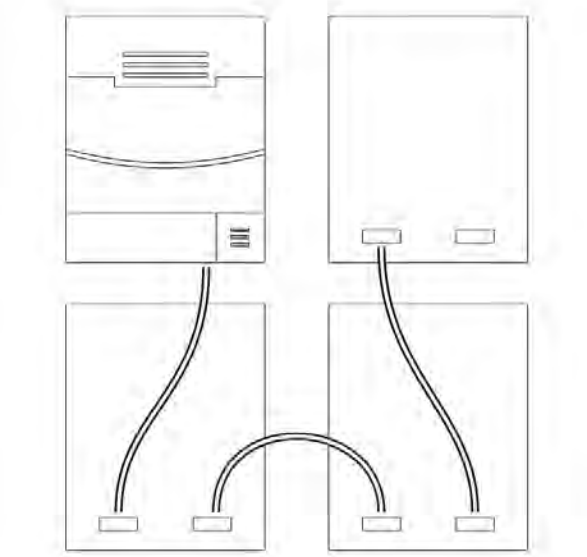


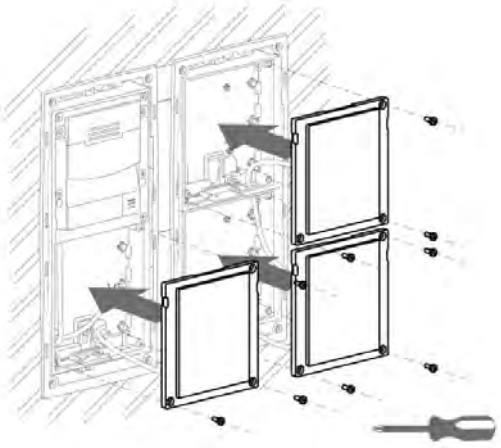


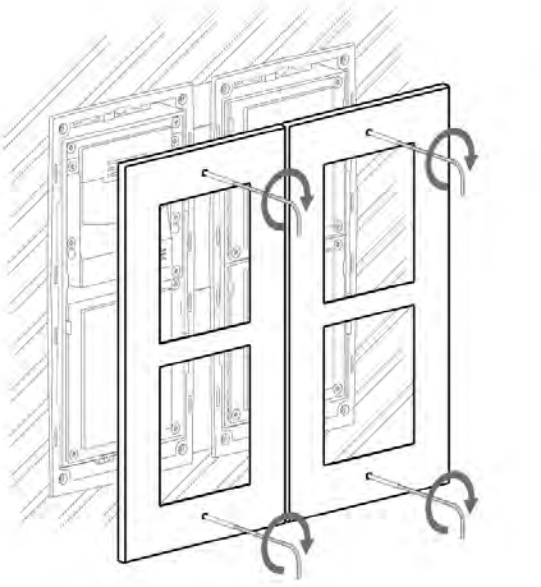




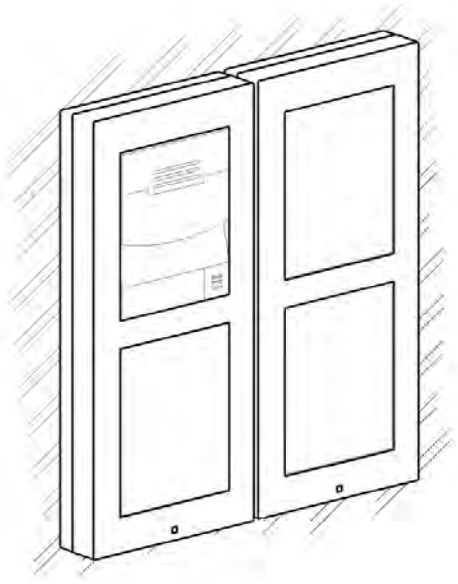


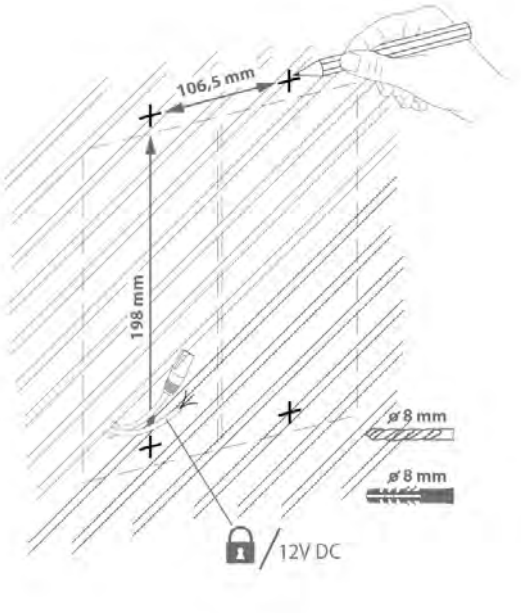


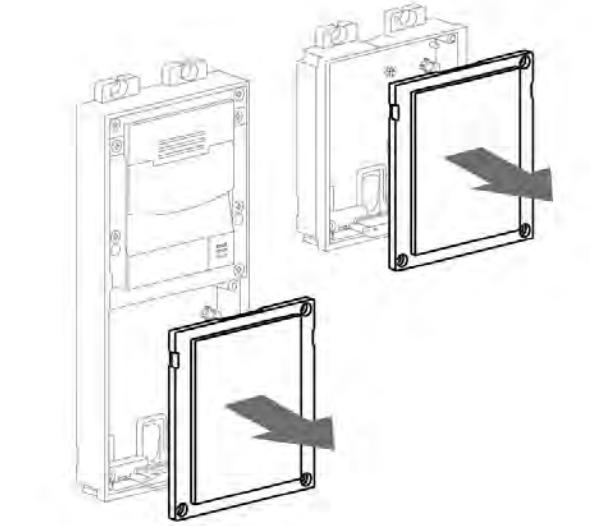


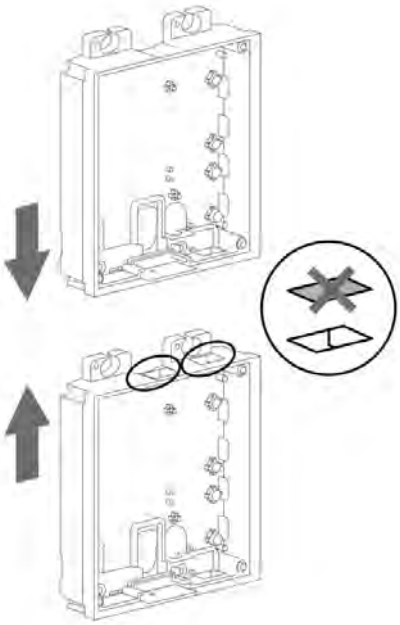


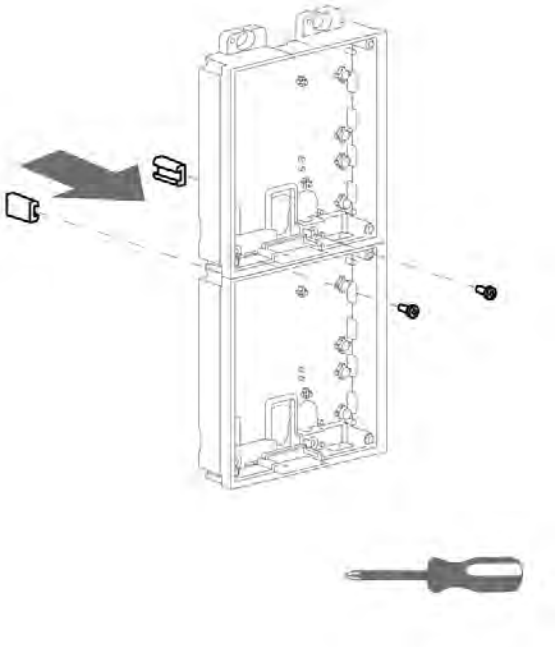
Wall mounting

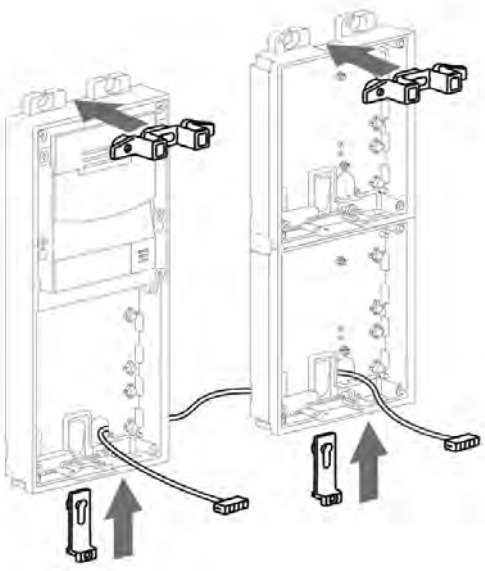


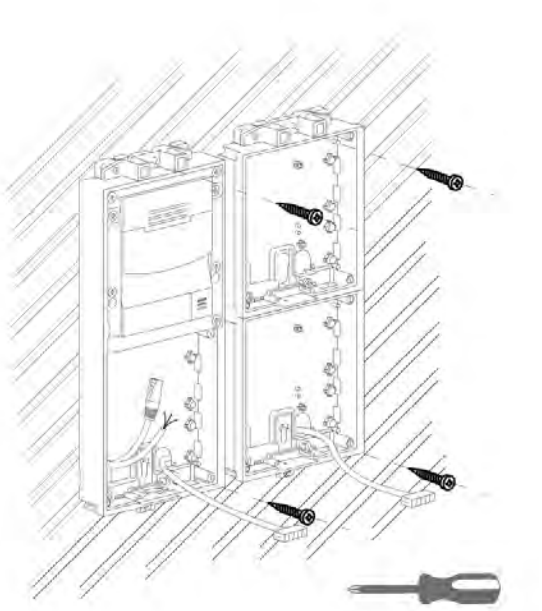


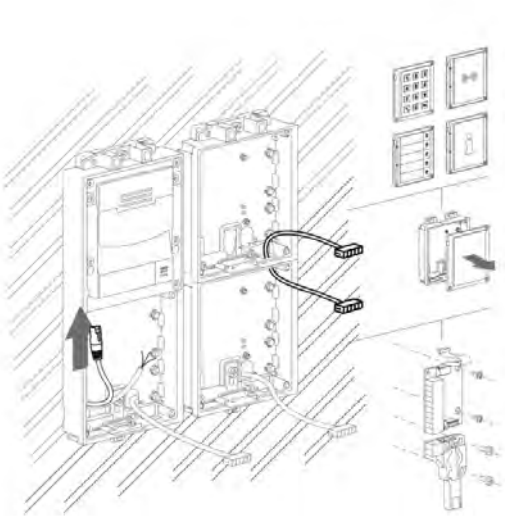


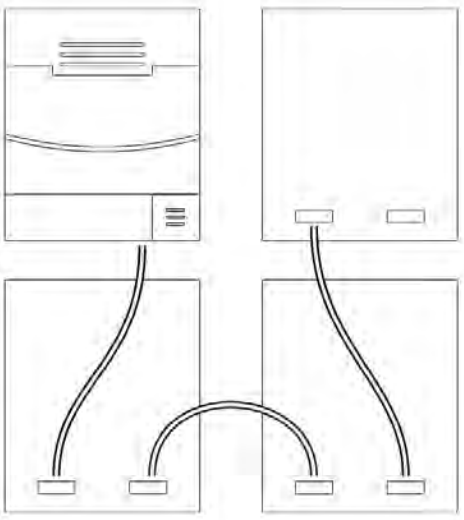






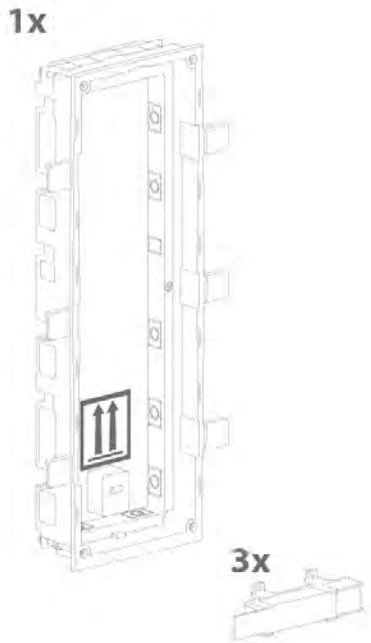


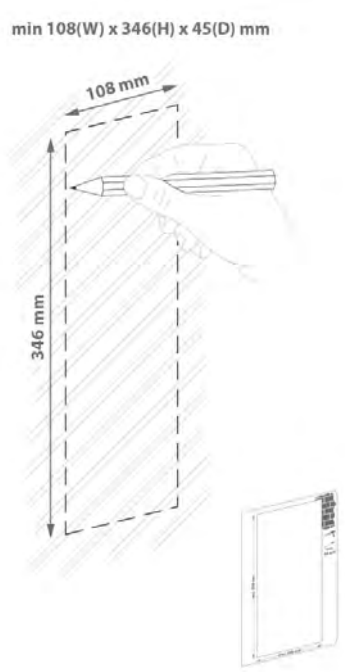


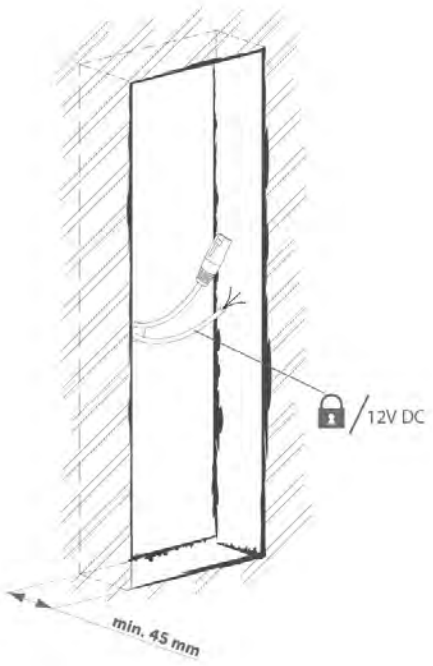


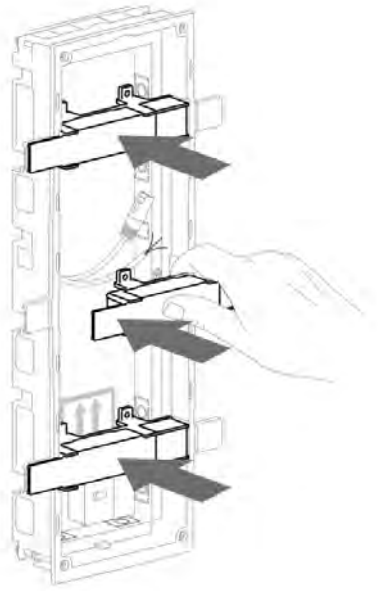
2.2.4 Three Module Box

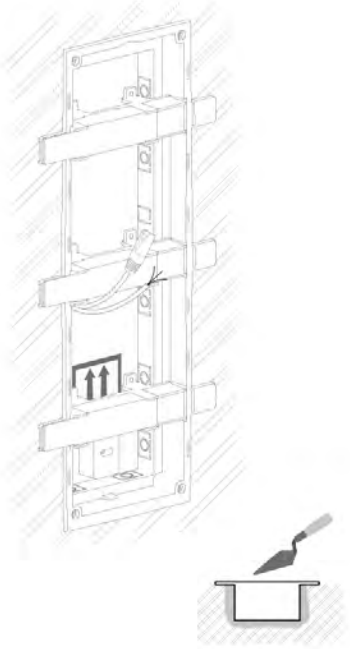
Flush mounting - classic bricks

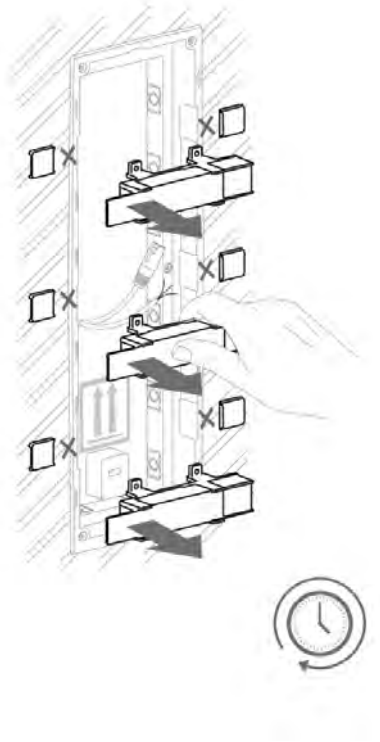


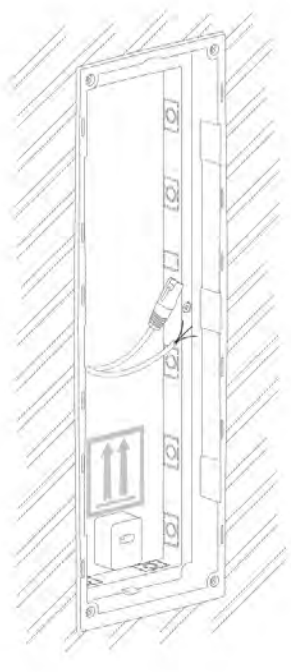



12V DC
min. 45 mm

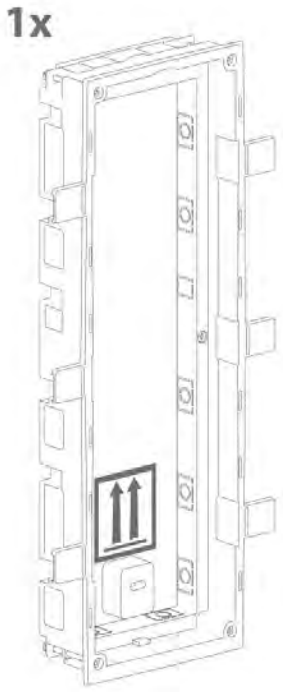


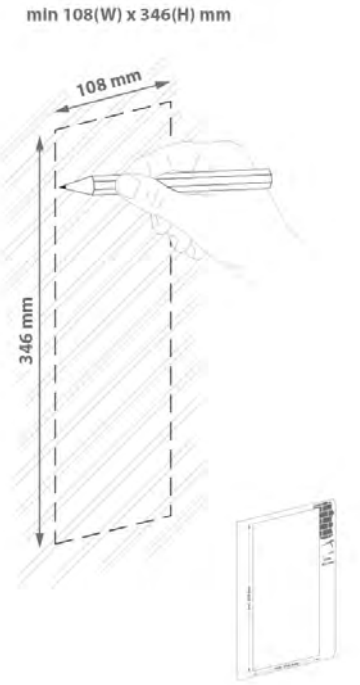


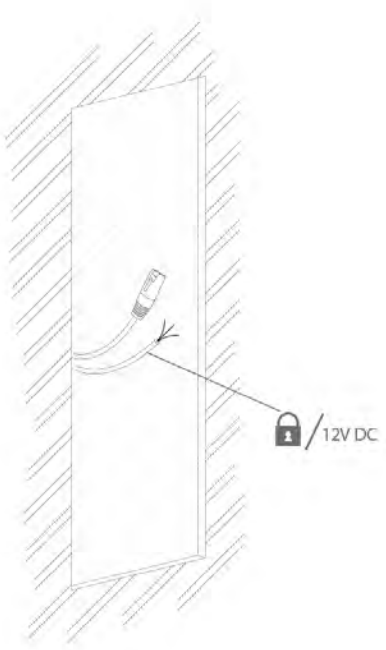


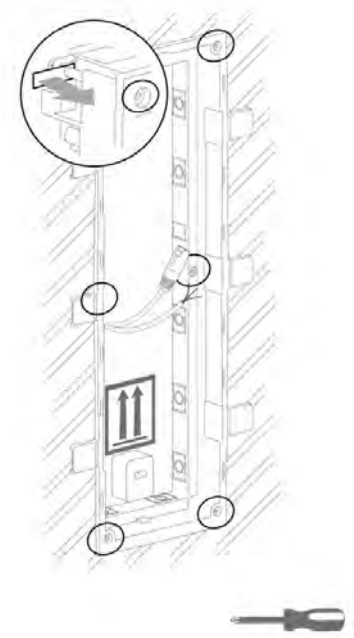


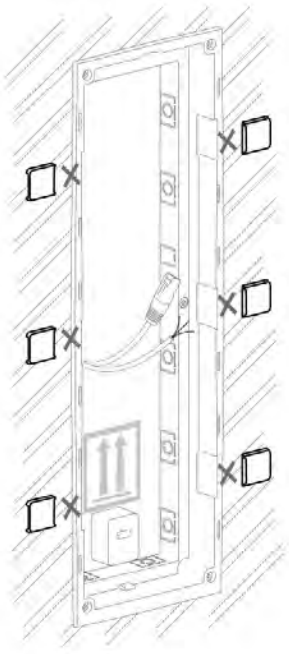
Flush mounting - plasterboard

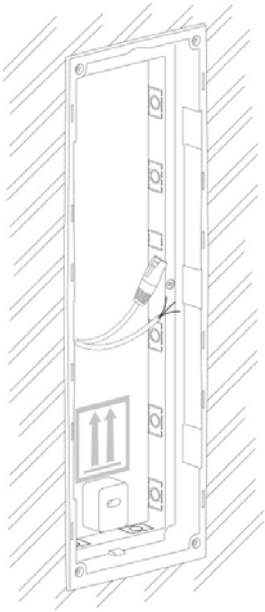




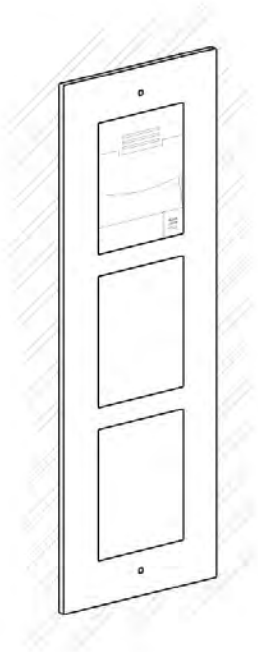

12V DC

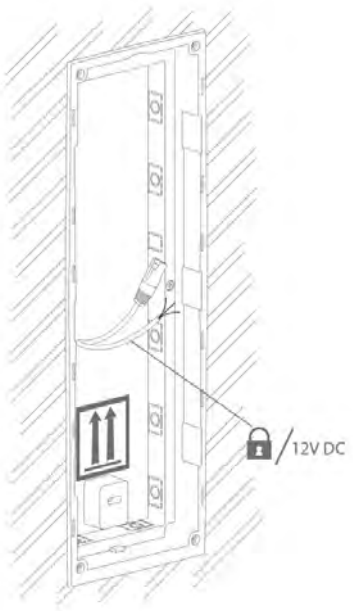


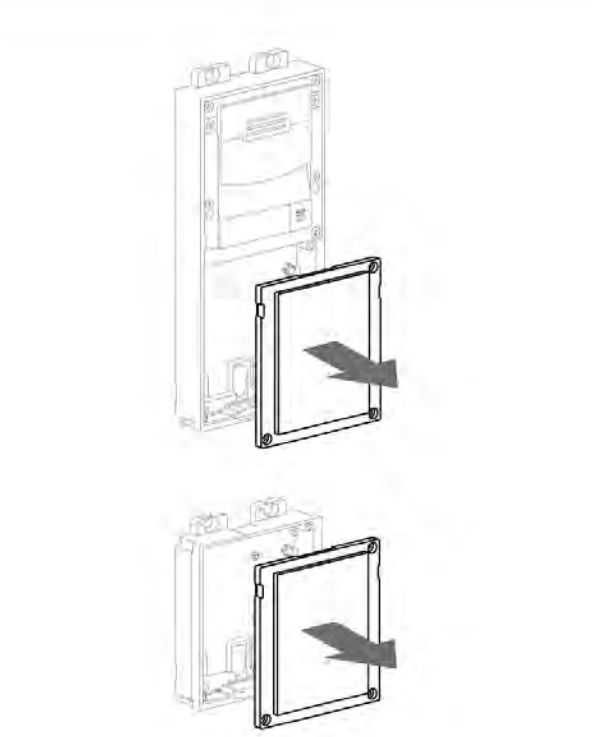


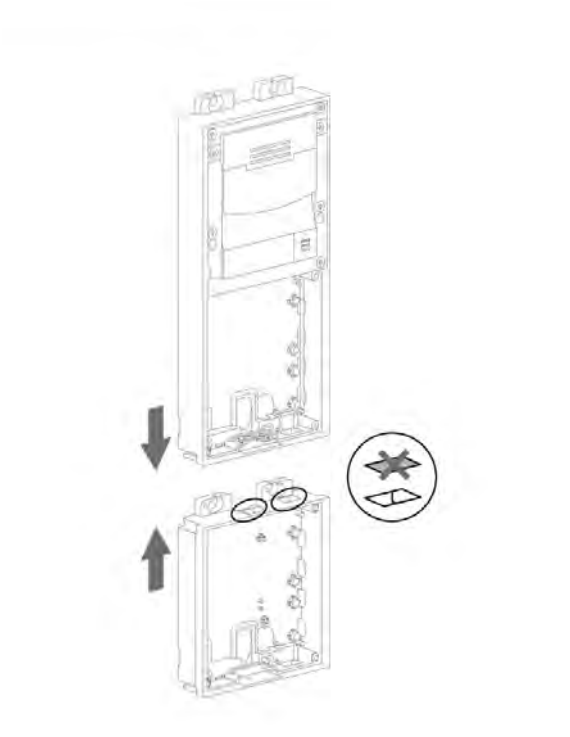


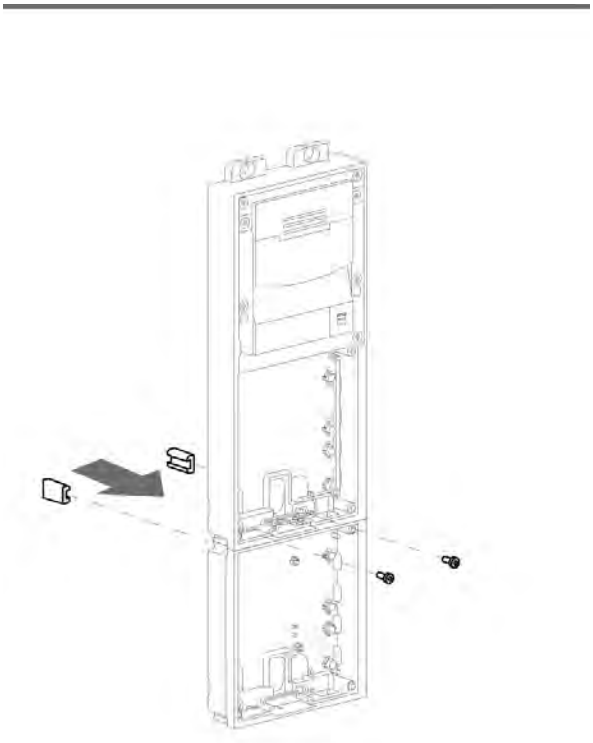
Module flush mounting

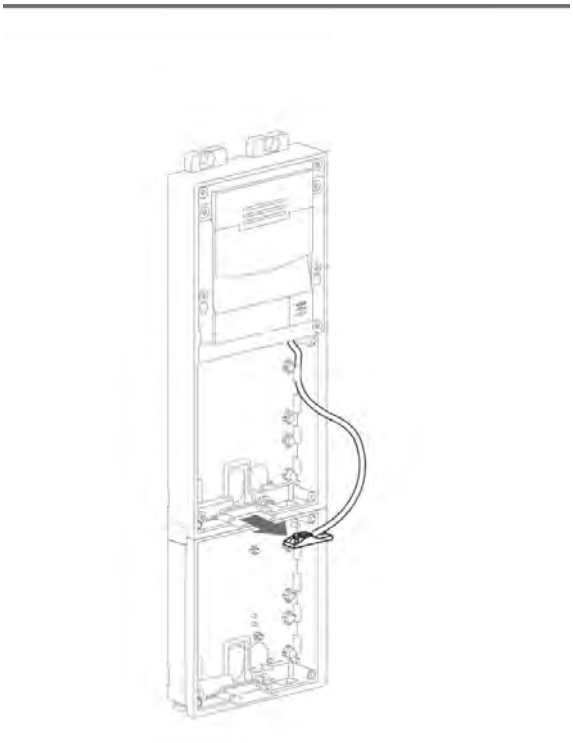


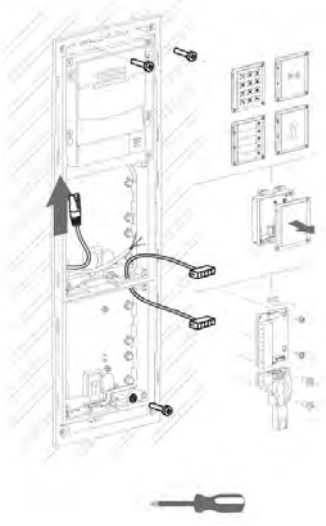


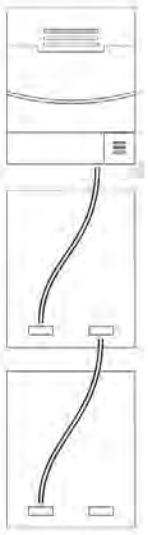


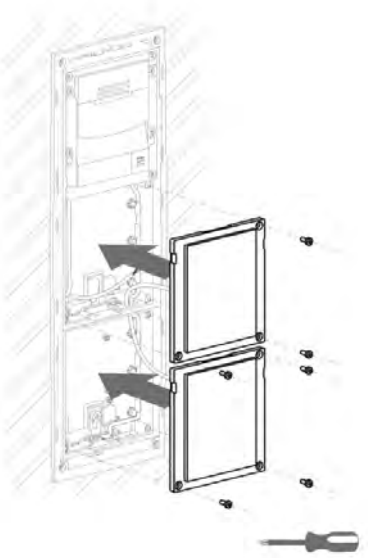




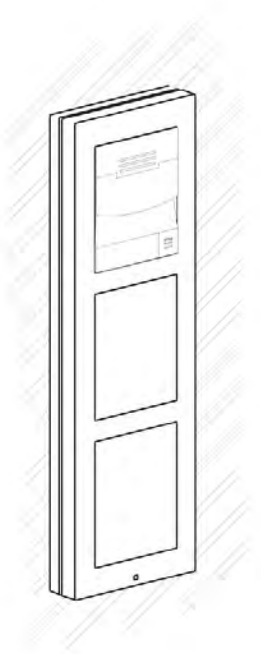


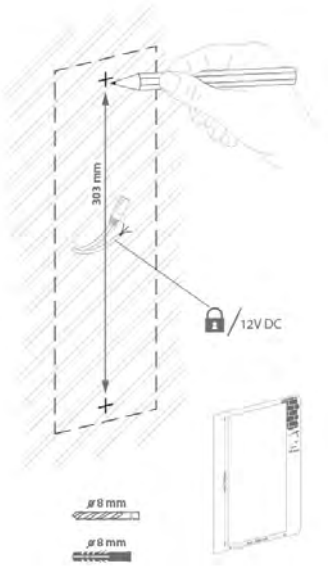


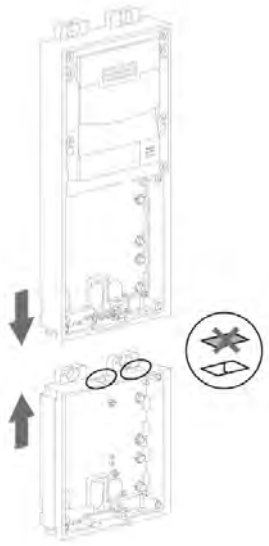


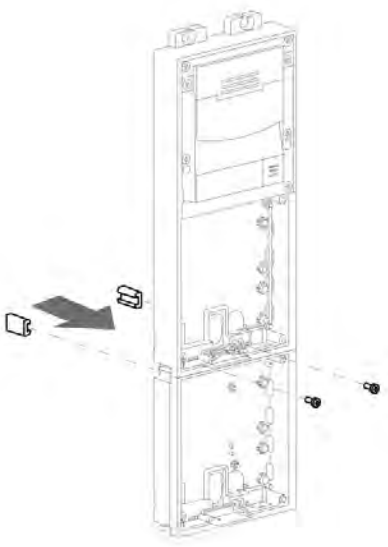


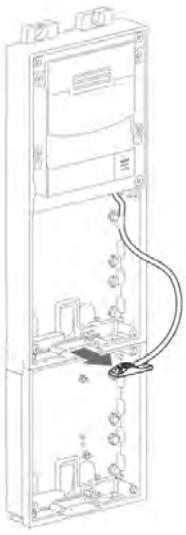
Wall mounting

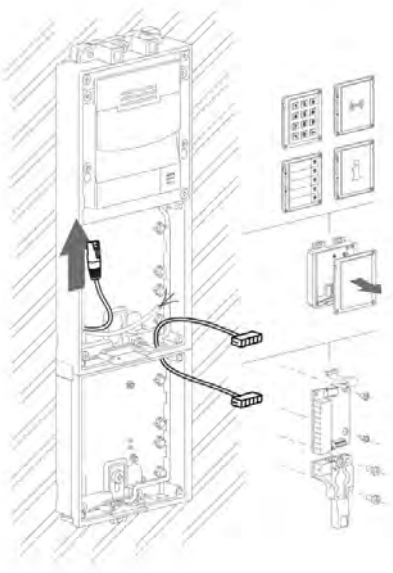


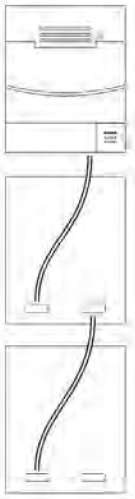


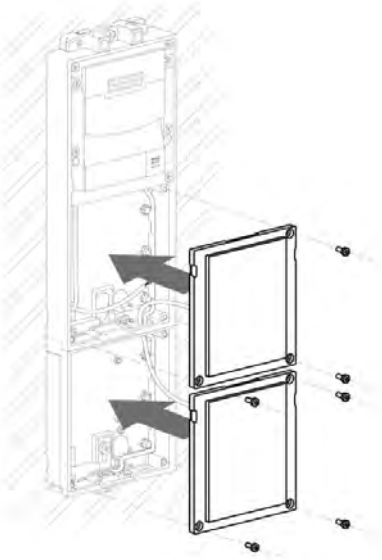


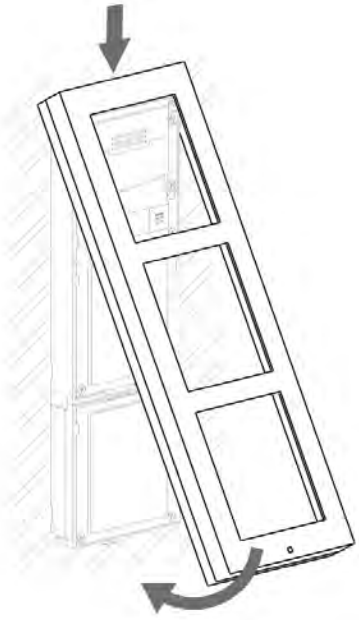


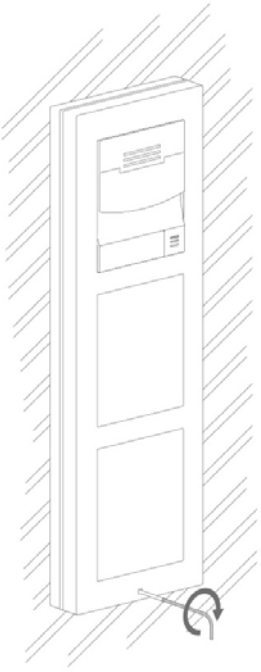






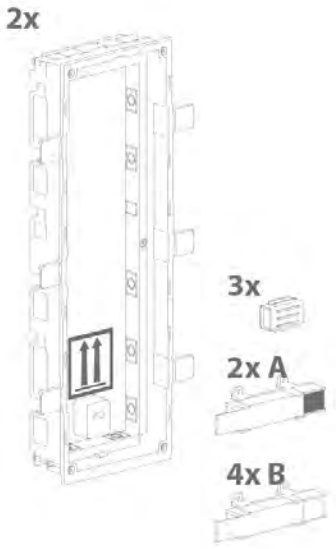


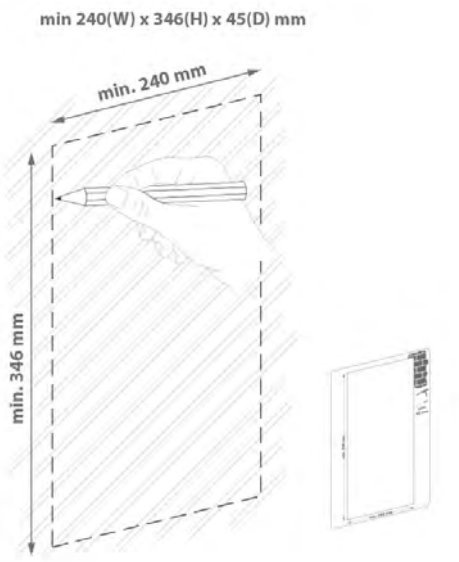


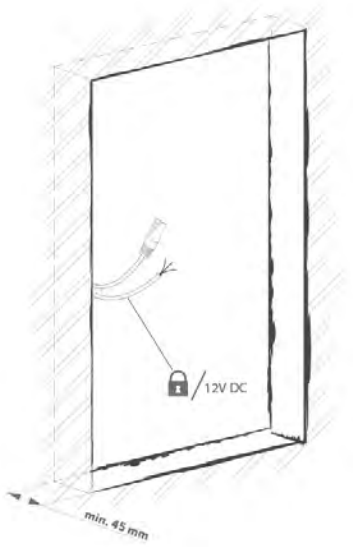


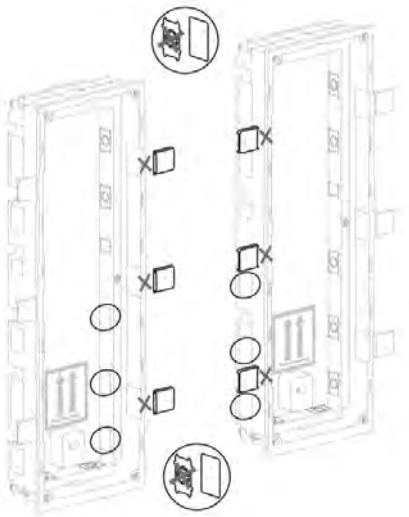
2.2.5 Multiple Three Module Boxes

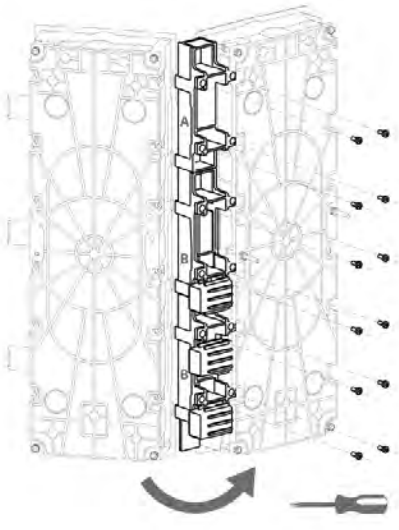
Flush mounting - classic bricks

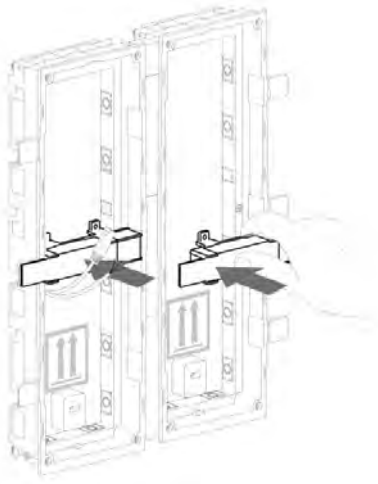


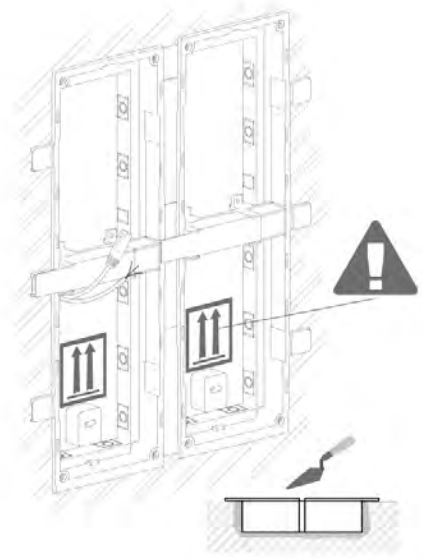


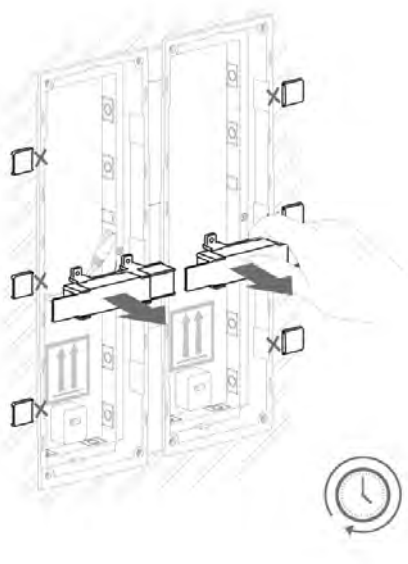

12V DC
min. 45 mm

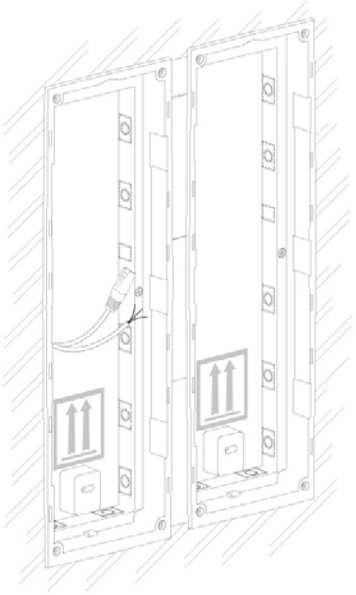



A
B

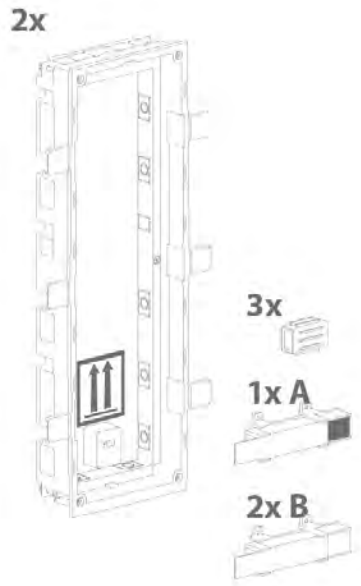


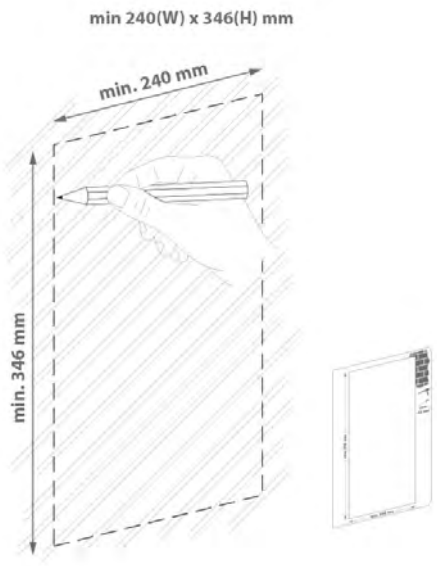


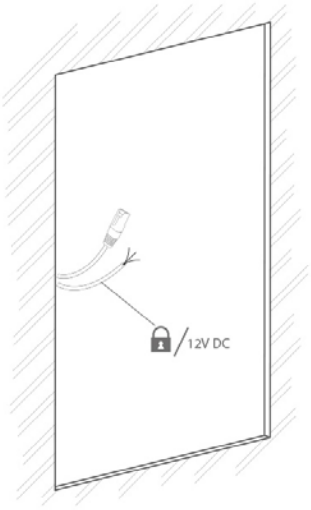


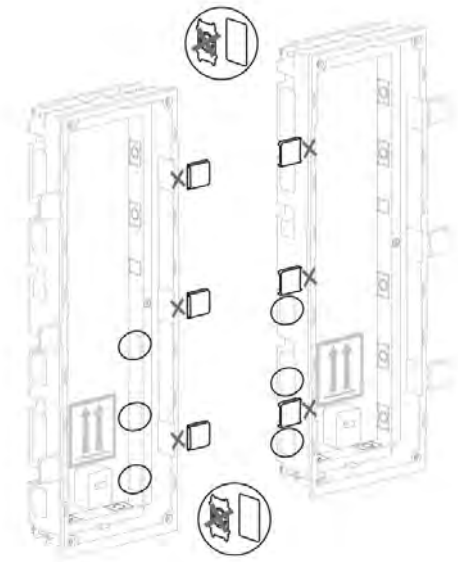


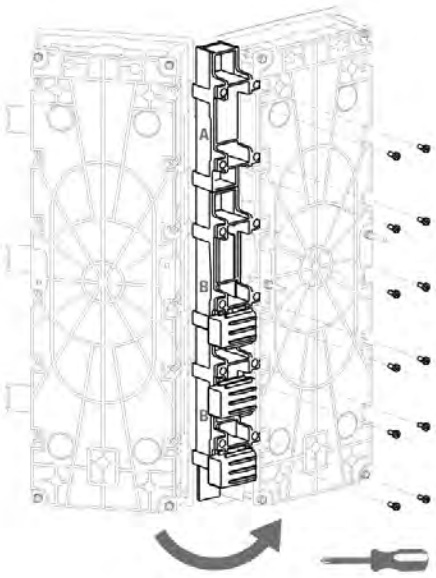
Flush mounting - plasterboard

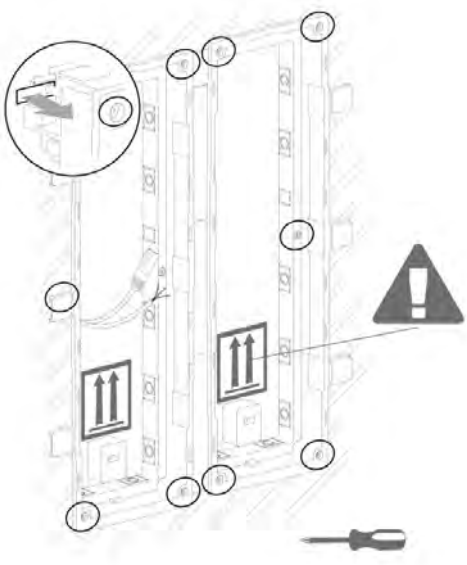


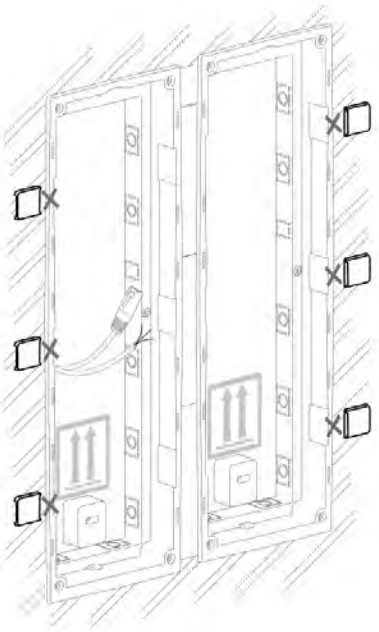


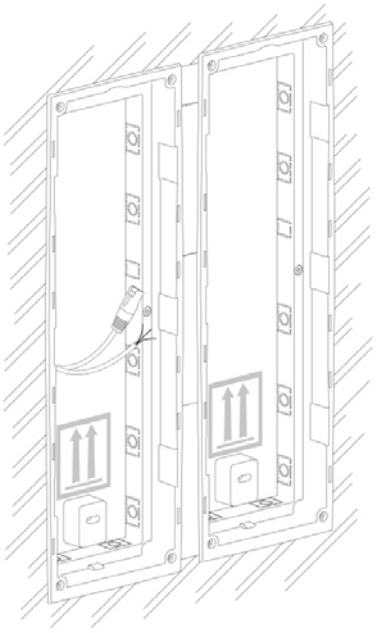

12V DC



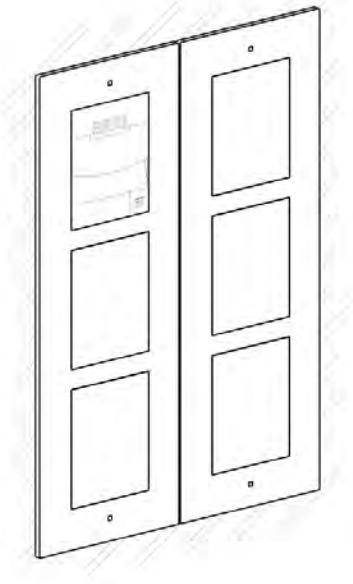


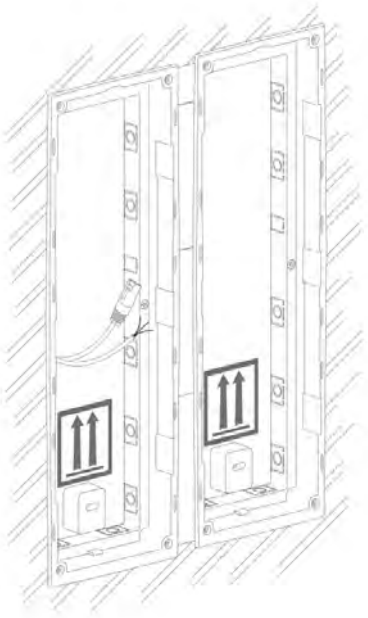


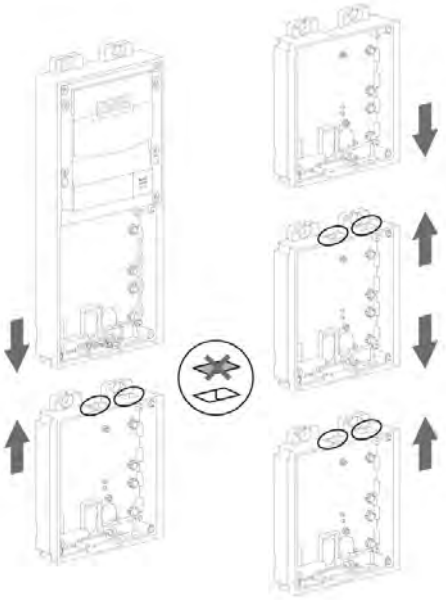


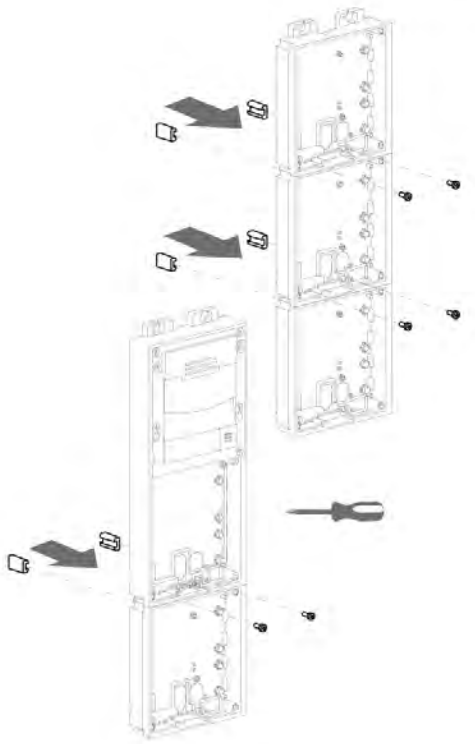


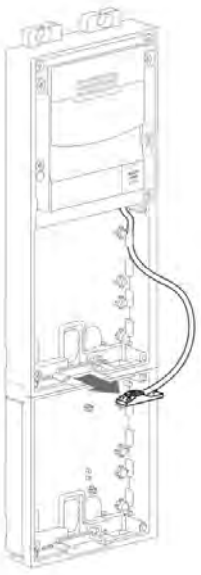
Module flush mounting

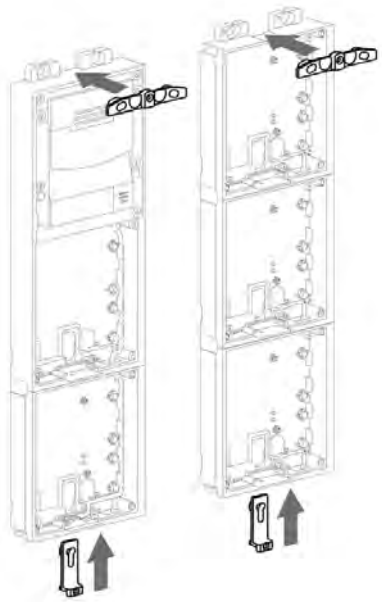


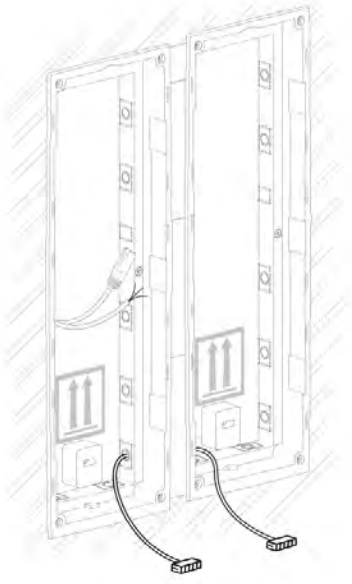


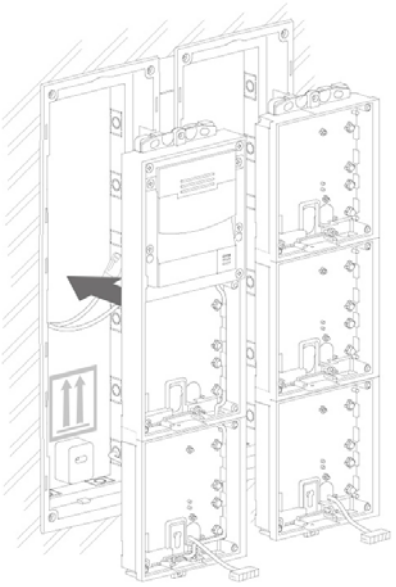


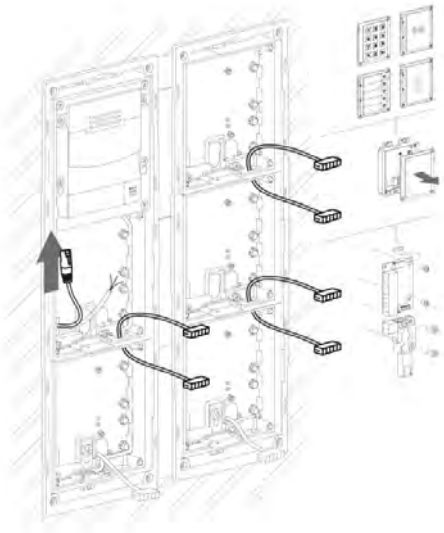


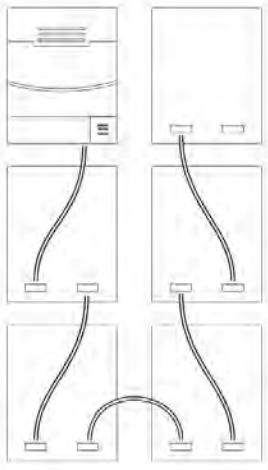


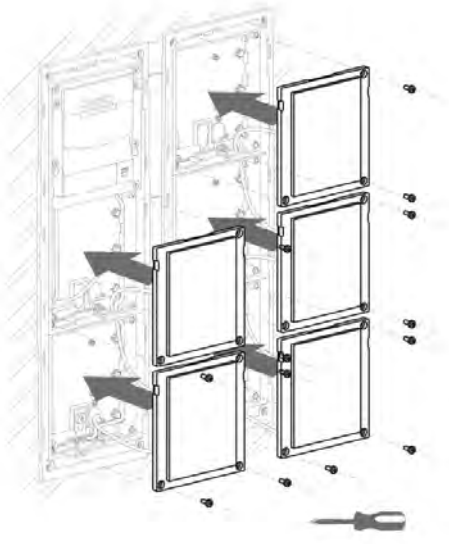


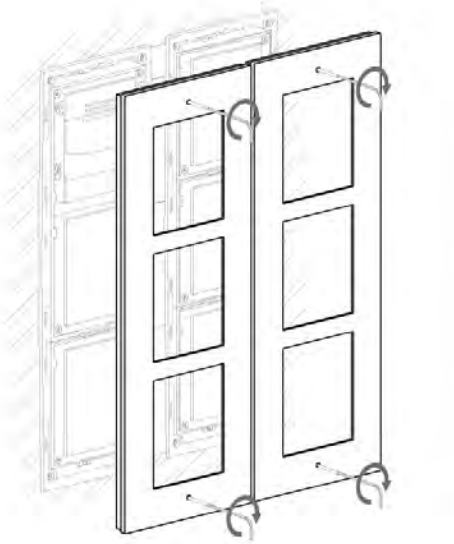




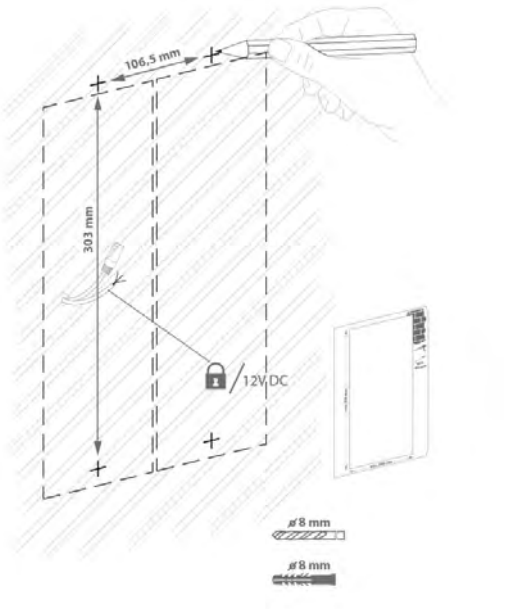


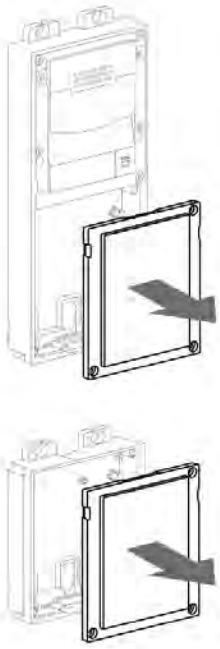


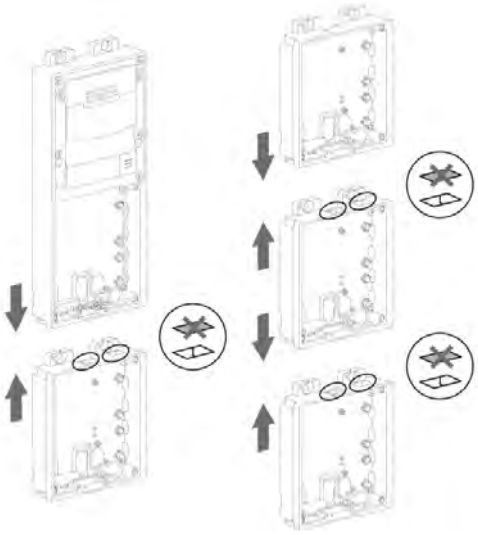


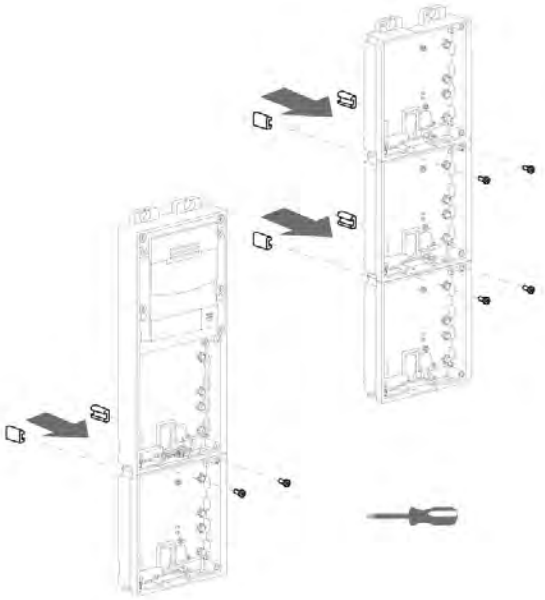


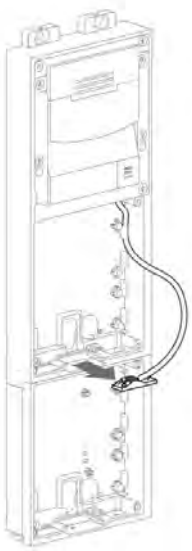
Wall mounting

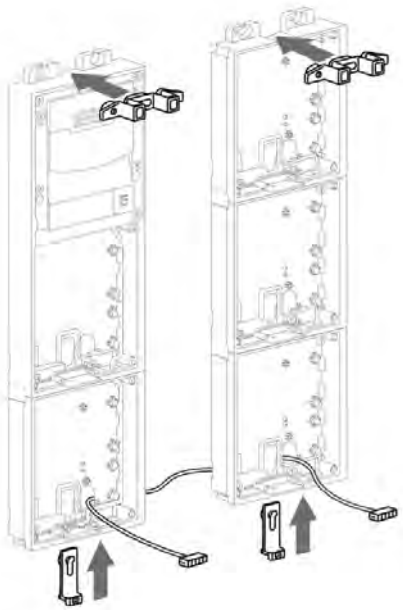


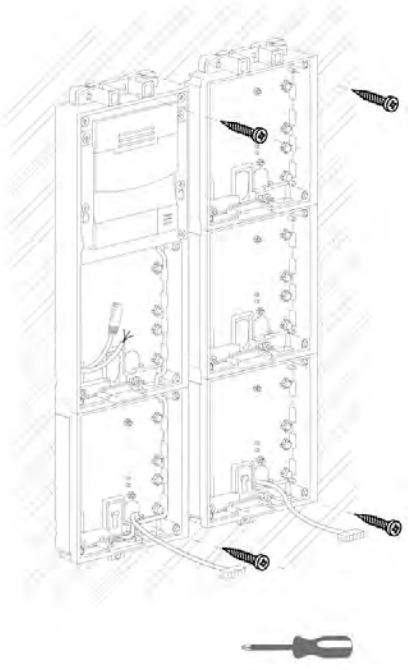


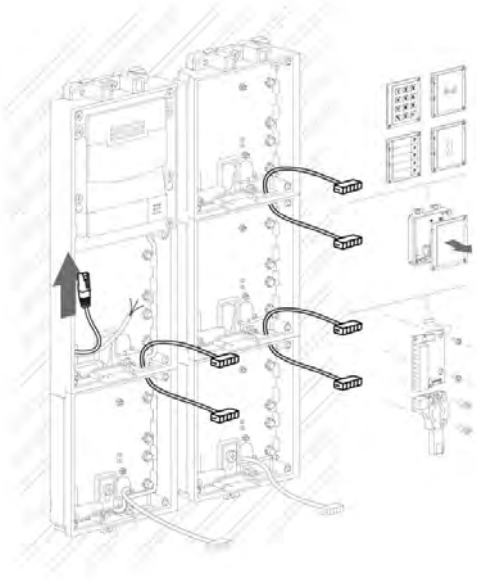


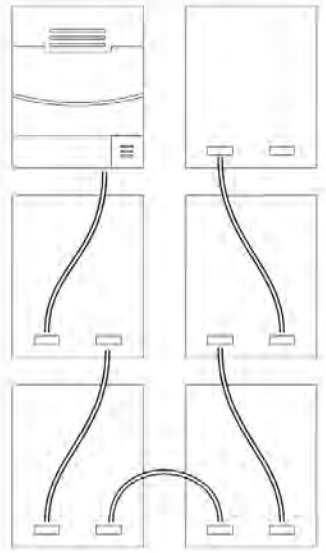


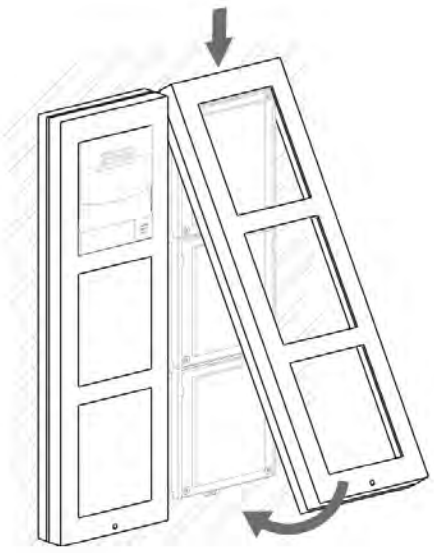




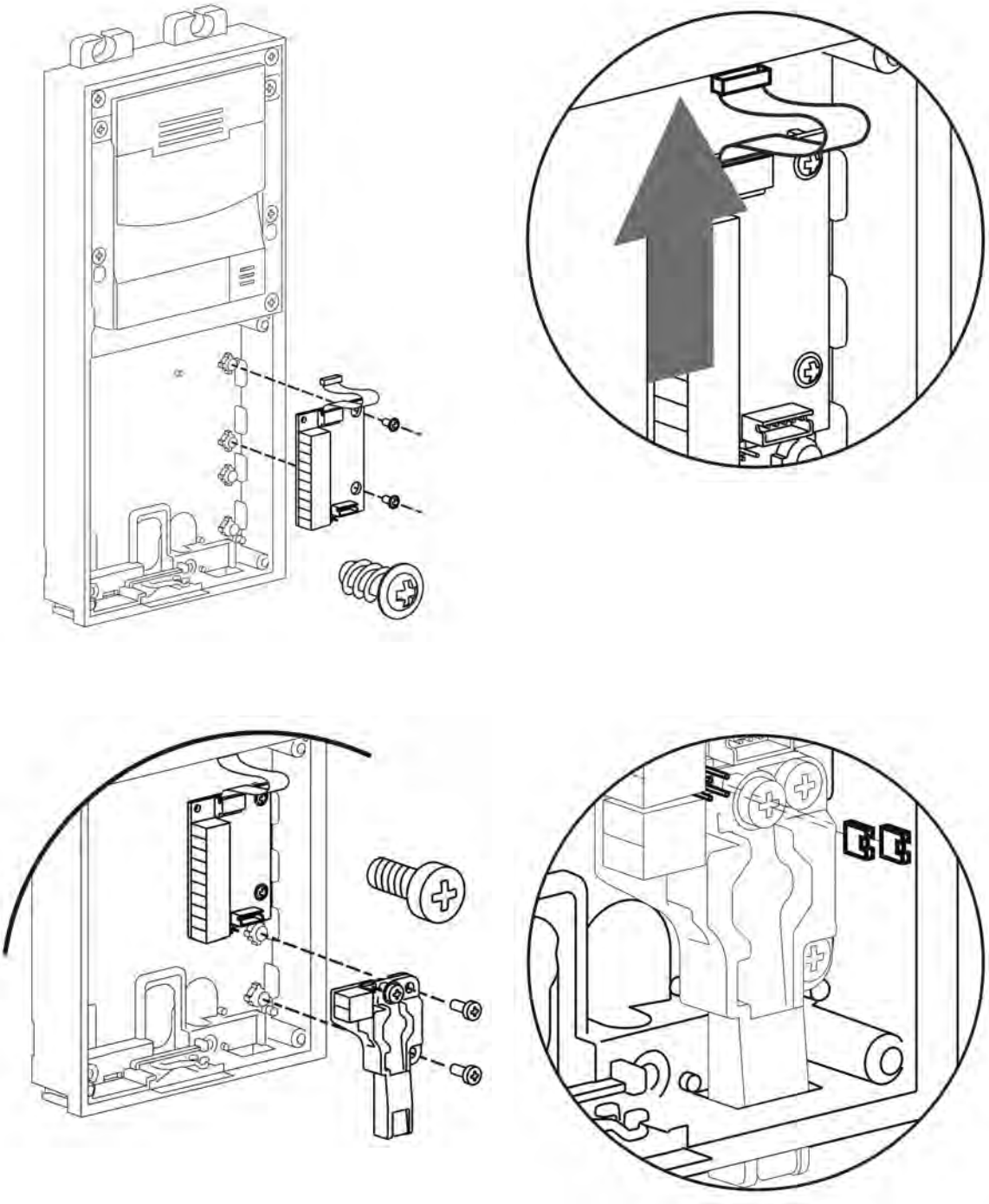








2.2.6 Tamper Switch and I/O Module



2.3 Electric Installation

This subsection describes how to install the modules and connect the **2N® Access Unit** basic unit to the power supply and LAN and how to connect other elements.

Version A - One Module Base

1. Place the base on the flush mounting box / pre-drilled holes with dowels and pull the cables through the bottom holes. Pull the Ethernet cable including the connector through the bottom hole to the left if necessary.
2. Insert the metal fitting elements up and down and screw the base plate tight. You can level the base slightly if you are mounting just one base.

Version B - Two Module Base

1. Place the base on the flush mounting box / predrilled holes with dowels and pull the cables through the bottom holes. Pull the Ethernet cable including the connector through the bottom hole to the left if necessary.
2. Insert the metal fitting elements up and down and screw the base plate tight. You can level the base slightly if you are mounting just one base.

Version C - Three Module Base

1. Unscrew the cover of the additional base.
2. Use a flat screwdriver to take out the cover.
3. Slide the additional base to the basic unit base and secure its position with the small side wedges and screws.
4. Remove the microphone from the basic unit base and loosen the microphone cable.
5. Lead the microphone to the third module base as shown in the figure.
6. Place the joined bases on the flush mounting box / predrilled holes with dowels and pull the cables through the bottom holes. Feed the Ethernet cable without the connector from the additional base to the basic unit base if necessary.

Version D - Additional Columns

1. Unscrew and remove the blank modules from the additional bases with a flat screwdriver.
2. Insert the bases into each other as projected and secure their positions with the small side wedges and screws.
3. Place the cover on the flush mounting box / predrilled holes with dowels and pull the cables if any through the bottom holes.
4. Pull the bus using the cable bushing available in the flush mounting box.

Basic Unit

Power Supply Connection

2N® Access Unit can be powered either from an external 12 V / 2 A DC source or directly from the LAN equipped with PoE 802.3af supporting network elements. Owing to different power outputs, the power supply selection affects the maximum count and applicability of the modules connected to the basic unit.

External power supply

For reliability reasons, use a 12 V ±15 % SELV supply dimensioned to the current consumption as required for feeding of the basic unit and connected modules.

Current consumption [A]	Part No.	Available power output [W]
2	91341481E	24
3		36

PoE power supply

2N® Access Unit e is compatible with the PoE 802.3af (Class 0 – 12.95 W) technology and can be fed directly from the LAN via the compatible network elements. If your LAN does not support this technology, insert a PoE injector, **Part No. 91378100**, between **2N® Access Unit** and the nearest network element. This power supply provides **2N® Access Unit** with 12 W for feeding of the basic unit and connected modules.

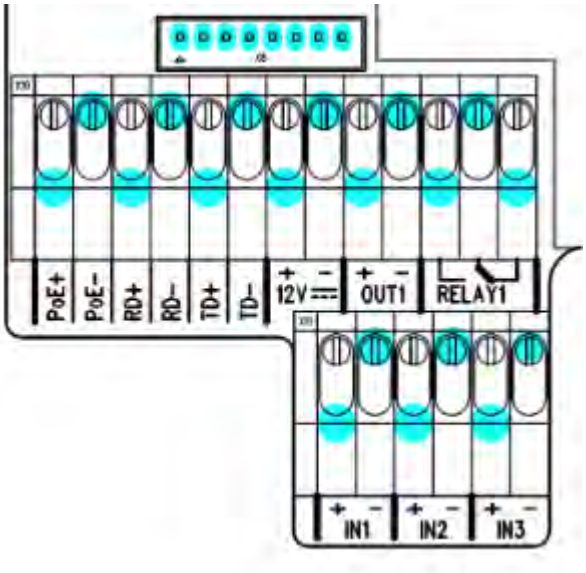
Combined power supply

2N® Access Unit can be fed from an external power supply and PoE at the same time. In this configuration, the maximum power for the connected modules is available.

LAN Connection

2N® Access Unit is connected to the Local Area Network (LAN) via the UTP/STP cable (Cat 5e or higher) terminated with an RJ-45 (LAN) connector. As the device is equipped with the Auto-MDIX function, both the straight and crossed cable can be used.

Basic Unit Connector Configuration



Legend to the figure	
X10,X8	LAN (PoE according to 802.1af) connector
IN1	IN1 terminals for input in passive/ active mode (−30 V to +30 V DC) ▪ OFF = open OR U_{IN} > 1.5 V ▪ ON = closed contact OR U_{IN} < 1.5 V
OUT1	OUT1 terminals of active input for **2N® Helios IP Security Relay** or electric lock connection: 8 up to 12 V DC depending on power supply (PoE: 10 V; adapter: power supply voltage minus 2 V), up to 400 mA
RELAY1	RELAY1 terminals with accessible 30 V / 2 A AC/DC NO/NC contact
12V / 2A	External 12 V / 2 A DC supply terminals (3 A for multiple modules)
GND	Grounding terminal
RESET	RESET / FACTORY RESET button
RGY	LED indicators (red/green/yellow)
LINE OUT	LINE OUT connector (1 V_{RMS})
MIC	MIC connector for microphone connection
BUS	**2N® Access Unit** bus connector

Device Restart

Press the RESET button shortly to restart the device.

Factory Reset

2N® Access Unit is equipped with a RESET button. Press the button shortly (< 1 s) to restart the system without changing configuration.

Follow the instructions below **to identify the current IP address**:

- Press and hold the RESET button.
- Wait until the red and green LEDs on the device come on simultaneously (approx. 20 s).
- Release the RESET button.
- The device announces the current IP address via the speaker automatically.

Follow the instructions below **to switch on the Static IP address mode** (DHCP OFF):

- Press and hold the RESET button.
- Wait until the red and green LEDs on the device come on simultaneously (approx. 20 s).
- Wait until the red LED goes off (approx. 5 s).
- Release the RESET button.

The following network parameters will be set after restart:

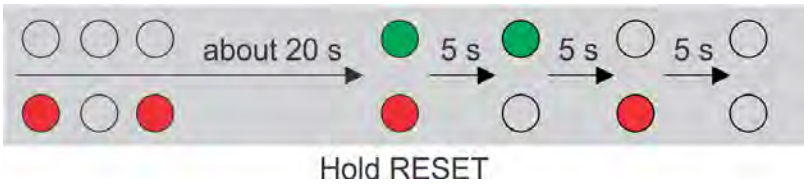
- IP address: 192.168.1.100
- Network mask: 255.255.255.0
- Default gateway: 192.168.1.1

Follow the instructions below **to switch on the Dynamic IP address mode** (DCHP ON):

- Press the RESET button.
- Wait until the red and green LEDs on the device come on simultaneously (approx. 20 s).
- Wait until the red LED goes off (approx. 5 s).
- Wait until the green LED goes off and the red LED comes on again (another 5 s).
- Release the RESET button.

Follow the instructions below **to reset the factory default values**:

- Press the RESET button.
- Wait until the red and green LEDs on the device come on simultaneously (approx. 20 s).
- Wait until the red LED goes off (approx. 5 s).
- Wait until the green LED goes off and the red LED comes on again (another 5 s).
- Wait until the red LED goes off (approx. 5 s).
- Release the RESET button.



Available Switches

Location	Name	Description
Basic Unit	Relay 1	**Passive switch:** NO/NC contact, up to 30 V / 1 A AC/DC
	Output 1	**Active switch output:**8 up to 12 V DC depending on power supply (PoE: 10 V; adapter: power supply voltage minus 2 V), up to 400 mA

More modules marked by * can be used.

2.4 Extending Module Connection

2N® Access Unit allows to connect following extending modules:

- Infopanel
- Keypad module
- RFID card reader, 125 kHz
- RFID card reader, 13.56 MHz
- I/O module
- 5-button module
- Electronic buttons
- Wiegand module
- Tamper switch
- Blank module
- Security relay

Module Bus Interconnection

All the **2N® Access Unit** modules, except for the Tamper Switch, are interconnected via a bus. The bus starts on the basic unit and goes over all the modules. The order of modules on the bus is irrelevant. And it also irrelevant which bus connector on the module is used as the input and which is used as the output.

The modules include a 220 mm long bus interconnecting cable; the Wiegand (**Part No. 9155037**) and I/O modules (**Part No. 9155034**) include an 80 mm long bus interconnecting cable.

You can order a separate 1 m long bus cable (**Part No. 9155050**) for remote installation of the **2N® Access Unit** modules. Typically, it helps install an RFID card reader on the opposite side of the wall on which the **2N® Access Unit** intercom is installed. This 1m cable (**Part No. 9155050**) can only be used once on the bus.

The modules can be combined in each base as follows:

Module	Externally mounted (visible module)	Internally mounted (invisible module)	Internally mounted on bottom base edge
Infopanel	X		
Keypad module	X		
RFID card reader, 125 kHz	X		
RFID card reader, 13.56 MHz	X		
I/O module		X	
5-button module	X		
Electronic buttons	X		
Wiegand module		X	
Tamper switch			X
Blank module	X		

Module Power Supply

Except for the Tamper Switch, all the **2N® Access Unit** modules are powered from the bus. The available bus power output depends on the power supply type. Basic units 571v3 and higher can use a 3A power supply to increase the bus power available for the modules connected.

Power supply	Specification	Available power output
External supply	12 V ±15% / 2 A (3 A)	24 W (36 W)
PoE	802.3af (Class 0 – 12.95 W)	12 W
Combined	External supply + PoE	30 W (42 W)

The count of modules on the bus is limited by the available power supply output. The maximum count of the modules on the bus is 30.

Basic unit (571v3)	Consumption [W] (Maximum value)
At relax	1.2
OUT 1	4.8
Total	**6**

Module	Idle consumption [W] (Minimum value)	Full load [W] (Maximum value)	Special elements [W]
Basic unit (571v3)	1.2	6	
Infopanel (version 2)	0.17	0.64	
Keypad module (579v2)	0.20	1.55	
RFID card reader, 125 kHz (584v2)			
RFID card reader, 13.56 MHz (583v2)	0.42	0.89	
I/O module (577v2)	0.35	0.66	Closed relay 0.13
5-button module (578v2)	0.15	0.98	
Electronic buttons			
Wiegand module (581v1)			
Tamper switch	0	0	

Specimen configuration consumption computation:

Module	Minimum consumption [W]	Maximum consumption [W]
Basic unit	1.2	6
RFID card reader, 13.56 MHz (583v2)	0.42	0.89
I/O module (577v2)	0.35	0.66
Tamper switch	0	0
5-button module (578v2)	0.15	0.98
5-button module (578v2)	0.15	0.98
Tamper switch	0	0
Wiegand module (581v1)	x	x
Total	**2.27**	**9.51**

It is obvious from the specimen configuration that all the modules have sufficient

outputs when an external power supply is used. When a PoE supply is used, the power output is insufficient for all the modules, which results in automatic decrease in backlight level, active output current supply, volume and LED intensity.

Some modules need a specific power output for their specific activities: the I/O module, e.g., requires 0.13 W for relay closing (not included in the minimum consumption).

Infopanel Module

The Infopanel module (**Part No. 9155030**) is one of the **2N® Access Unit** elements and is used for inserting and backlighting of printed information.

- The module contains two **2N® Access Unit** bus connectors.
- These two connectors are fully interchangeable and can be used both as inputs from the basic unit and outputs to other modules.
- If this module is the last one on the bus, one of the connectors remains unconnected.
- The module package includes a 220 mm long interconnecting cable.
- Name tag dimensions: 69.2 (W) x 86.7 (H) mm (dimensional tolerance: +0; -0.5 mm).
- Refer to www.2n.cz for the printing template.

Keypad Module

The Keyboard module (**Part No. 9155031**) is one of the **2N® Access Unit** elements and provides a numerical input in the system.

- The module contains two **2N® Access Unit** bus connectors.
- These two connectors are fully interchangeable and can be used both as inputs from the basic unit and outputs to other modules.
- If this module is the last one on the bus, one of the connectors remains unconnected.
- The module package includes a 220 mm long interconnecting cable.

RFID Card Reader Module 125 kHz

The 125 kHz RFID Card Reader (**Part No. 9155032**) is one of the **2N® Access Unit** elements and is used for reading RFID card Ids in the 125 kHz band.

- The module contains two **2N® Access Unit** bus connectors.
- These two connectors are fully interchangeable and can be used both as inputs from the basic unit and outputs to other modules.
- If this module is the last one on the bus, one of the connectors remains unconnected.
- The module package includes a 220 mm long interconnecting cable.

The following RFID cards can be read:

- EM4100, EM4102, HID Proximity

RFID Card Reader Module 13.56 MHz

The 13.56 MHz RFID Card Reader (**Part No. 9155033**) is one of the **2N® Access Unit** elements and is used for reading RFID card Ids in the 13.56 MHz band.

- The module contains two **2N® Access Unit** bus connectors.
- These two connectors are fully interchangeable and can be used both as inputs from the basic unit and outputs to other modules.
- If this module is the last one on the bus, one of the connectors remains unconnected.
- The module package includes a 220 mm long interconnecting cable.

The following RFID cards can be read:

- ISO14443A

  Mifare Classic 1k & 4k, DESFire EV1, Mini, Plus S&X, SmartMX, Ultralight, Ultralight C, SLE44R35, my-d move (SLE66Rxx), PayPass, Legic Advant

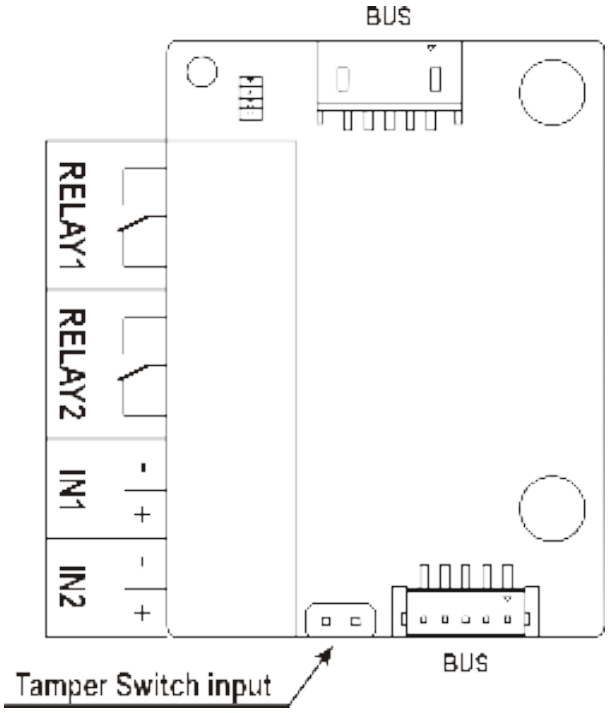
- ISO14443B

  Calypso, CEPAS, Moneo, SRI512, SRT512, SRI4K, SRIX4K, PicoPass, HID iCLASS

I/O Module

The I/O module (**Part No. 9155034**) is one of the **2N® Access Unit** elements and is used for extending of the number of inputs and outputs.

- The module contains two **2N® Access Unit** bus connectors.
- These two connectors are fully interchangeable and can be used both as inputs from the basic unit and outputs to other modules.
- If this module is the last one on the bus, one of the connectors remains unconnected.
- The module package includes an 80 mm long interconnecting cable.
- The inputs / outputs are addressed as follows: **<module_name>.<input/output_name>**, e.g. module5.relay1. Configure the module name in the Module name parameter in the Hardware / Extenders menu.



RELAY1	RELAY1 terminals with accessible 30 V / 1 A AC/DC NO/NC contact
RELAY2	RELAY2 terminals with accessible 30 V / 1 A AC/DC NO/NC contact
IN1	IN1 terminals for input in passive/ active mode (−30 V to +30 V DC) OFF = open or U_{IN} > 1.5 V ON = short-circuit or U_{IN} < 1.5 V
IN2	IN2 terminals for input in passive/active mode (−30 V to +30 V DC) OFF = open or U_{IN} > 1.5 V ON = short-circuit or U_{IN} < 1.5 V
TAMPER	Tamper switch input, **Part No. 9155038**

5-Button Module

The 5-button module (**Part No. 9155035**) is one of the **2N® Access Unit** elements and is used for extending of the number of buttons.

- The module contains two **2N® Access Unit** bus connectors.
- These two connectors are fully interchangeable and can be used both as inputs from the basic unit and outputs to other modules.
- If this module is the last one on the bus, one of the connectors remains unconnected.
- The module package includes a 220 mm long interconnecting cable.
- Name tag dimensions:
  - 1 button: 52,0 (W) x 15.2 (H) mm (dimensional tolerance: +0; - 0.5 mm).
  - 5 buttons: 57.5 (W) x 89.0 (H) mm (dimensional tolerance: +0; - 0.5 mm).
- Refer to www.2n.cz for the printing template.

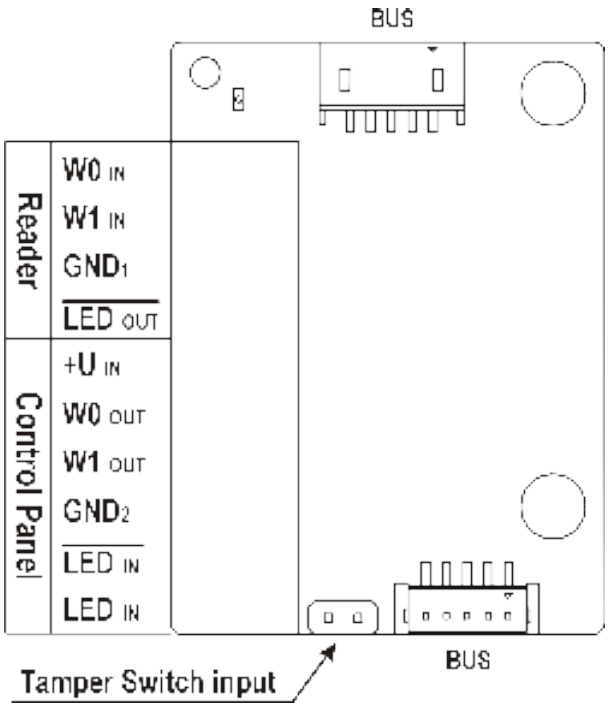
Electronic Buttons

The Electronic button module (**Part No. 9155036**) is under preparation.

Wiegand Module

The Wiegand module (**Part No. 9155037**) is one of the **2N® Access Unit** elements and helps connect an external Wiegand device (RFID card reader, fingerprint or other biometric data reader) and/or connecting the **2N® Access Unit** system to an external security exchange. All the inputs and outputs are galvanically isolated from the **2N® Access Unit** system with the insulation strength of 500 V DC.

- The module contains two **2N® Access Unit** bus connectors.
- These two connectors are fully interchangeable and can be used both as inputs from the basic unit and outputs to other modules.
- If this module is the last one on the bus, one of the connectors remains unconnected.
- The module package includes an 80 mm long interconnecting cable.
- Configure the module name in the Module name parameter in the Hardware / Extenders menu.
  - The LED IN input is addressed as follows: **<module_name>.<input1>**, e.g. module2.input1.
  - The Tamper input is addressed as follows: **<module_name>.<tamper>**, e.g. module2.tamper.
  - The LED OUT (negated)output is addressed as follows: **<module_name>.<output1>**, e.g. module2.output1.



Reader	W0 IN, W1 IN, GND1	Isolated 2-wire WIEGAND IN
	LED OUT	Isolated open LED OUT switched against GND1 on WIEGAND IN side (up to 24 V / 50 mA)
Control Panel	+U IN	+UIN (5 to 15 V DC) WIEGAND OUT power supply input
	W0 OUT, W1 OUT, GND2	Isolated 2-wire WIEGAND OUT
	LED IN (negated)	Isolated input for open LED IN, input activated by GND_2
	LED IN	Isolated input for open LED IN, input activated by +U
	G	+U IN WIEGAND OUT active supply LED indicator
	TAMPER	Tamper switch (**Part No. 9155038**) input

Tamper Switch Module

The Tamper Switch module (**Part No. 9155038**) is one of the **2N® Access Unit** elem ents and helps secure the system against tampering. One tamper switch is automaticaly fitted in basic unit **2N® Access Unit .**

- The module contains two switches that open whenever the front frame is removed:
  - One switch leads directly to the terminal board and is designed for connection to an external security exchange (32 V DC / 50 mA max)
  - . The other switch, together with the **I/O module (Part No. 9155034)** or **Wiegand module (Part No. 9155037)**, can be used for alarm signalling via the Automation interface in the **2N® Access Unit** . configuration.
  - This module is not connected to the bus.

Figure: Tamper switch mounting

Blank Module

The Blank module (**Part No. 9155039**) helps fill in an empty position.

Security Relay

The Security Relay (**Part No. 9159010**) is used for enhancing security between the intercom and the connected electric lock. The **2N® Helios IP Security Relay** is designed for any **2N® Helios IP** intercom model with firmware versions 1.15 and higher. It significantly enhances security of the connected electric lock as it prevents unlocking by forced intercom opening.

Function:

The **2N® Helios IP Security Relay** is a device installed between an intercom (outside the secured area) and the electric lock (inside the secured area). The **2N® Helios IP Security Relay** includes a relay that can only be activated if the valid opening code is received from the intercom.

Specifications:

- Passive switch: NO and NC contacts, up to 30 V / 1 A AC / DC
- Active switch output: 9 to 13 V DC depending on power supply (PoE: 9 V; adapter: power supply voltage minus 1 V), up to 700 mA
- Dimensions: (56 × 31 × 24) mm
- Weight: 20 g

Installation:

Install the **2N® Helios IP Security Relay** onto a two-wire cable between the intercom and the electric lock inside the area to be secured (typically behind the door). The device is powered and controlled via this two-wire cable and so can be added to an existing installation. Thanks to its compact dimensions, the device can be installed into a standard mounting box.

Connection:

Connect the **2N® Helios IP Security Relay** to the intercom as follows:

- To the intercom active output (OUT1 or OUT2) , or
- To the intercom relay output (RELAY1 or RELAY 2) in series with a 12 V DC external power supply.

Connect the electric lock to the **2N® Helios IP Security Relay** output as follows:

- To the active 12 V / 700 mA DC output, or
- To the passive output in series with an external power supply.

The device also supports a Departure button connected between the 'PB' and '-HeliosIP' terminals. Press the Departure button to activate the output for 5 seconds.

Status signalling:

Green LED	Red LED	Status
flashing	off	Operational mode
on	off	Activated output
flashing	flashing	Programming mode – waiting for initialisation
on	flashing	Error – wrong code received

Configuration:

- Connect the **2N® Helios IP Security Relay** to the properly set intercom security output; refer to the **2N® Helios IP Configuration Manual**. Make sure that one LED at least is on or flashing.
- Press and hold the **2N® Helios IP Security Relay** Reset button for 5 seconds to put the device in the programming mode (both the red and green LEDs are flashing).
- Activate the intercom switch using the keypad, telephone, etc. The first code sent from the intercom will be stored in the memory and considered valid. After code initialisation, the **2N® Helios IP Security Relay** will pass into the operational mode (green LED flashing).

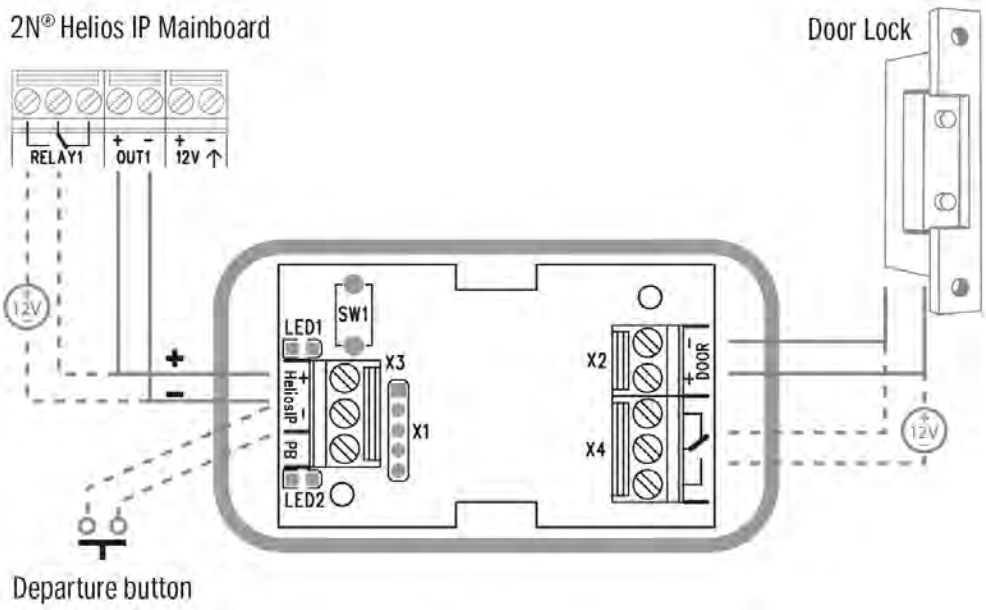
Tip

- FAQ: 2N® Helios IP Security Relay – device description and use with 2N® Helios IP

Tip

- Video Tutorial: Door intercoms 2N® Helios IP - Security Relay

Connection:


2N® Helios IP Mainboard
Door Lock
RELAY1
OUT1
12V
LED1
SW1
X3
X1
X2
X4
DOOR
HeliosIP
PB
LED2
12V
12V
Departure button

2.5 Extending Module Connection

Installation Completion

Check the connection of all wires and the RJ-45 plug to the board connector.

> **Caution**
> - Make sure that the terminals of all the unused connectors are tightened properly to avoid sound vibrations.

Name tag Placing

Every intercom package includes a piece of transparent foil, which can be laser printed. Cut the printed foil and insert the name tags in the buttons.

We recommend you to put a name tag in every button in the 5-button module. Refer to www.2n.cz for the name tag printing template.

Name tag dimensions for 5-button module:

- 1 button: 52.0 (W) x 15.2 (H) mm (dimensional tolerance: +0; - 0.5 mm)
- 5 buttons: 57.5 (W) x 89.0 (H) mm (dimensional tolerance: +0; - 0.5 mm)

Infopanel name tag dimensions: 69.2 (W) x 86.7 (H) mm (dimensional tolerance: +0; - 0.5 mm).

> **Caution**
> - The area where name tags are placed is called a wet zone. After heavy rain, water can penetrate to the name tag. Water in this area does not affect the intercom functionality in any way and evaporates soon.
> - Always use waterproof foil (enclosed or other) for the name tags. Never use paper or ink jet printing to avoid damage due to water leakage!

Name tag inserting/replacing:

1. Remove the frame.
2. Lift up the button door. The 5-button module buttons have just one door.
3. Remove the used name tag and insert a new one.
4. Close the button door.
5. Replace the frame.

Frame Replacement

Check the frame sealing before replacing the frame.

Version A

Screw the flush mounting frame in the upper and bottom parts.

Version B

Hang the wall mounting frame on the hook in the upper part and then screw it tight in the bottom part.

Caution

- Improper mounting may deteriorate the intercom waterproofness and water may damage the electronic part.
- Make sure that all the holes are filled with some waterproof material – the top part, around the cables and the screws.
- Use silicone or some other sealant to seal the box against the wall if uneven to avoid water leakage and wall damping.

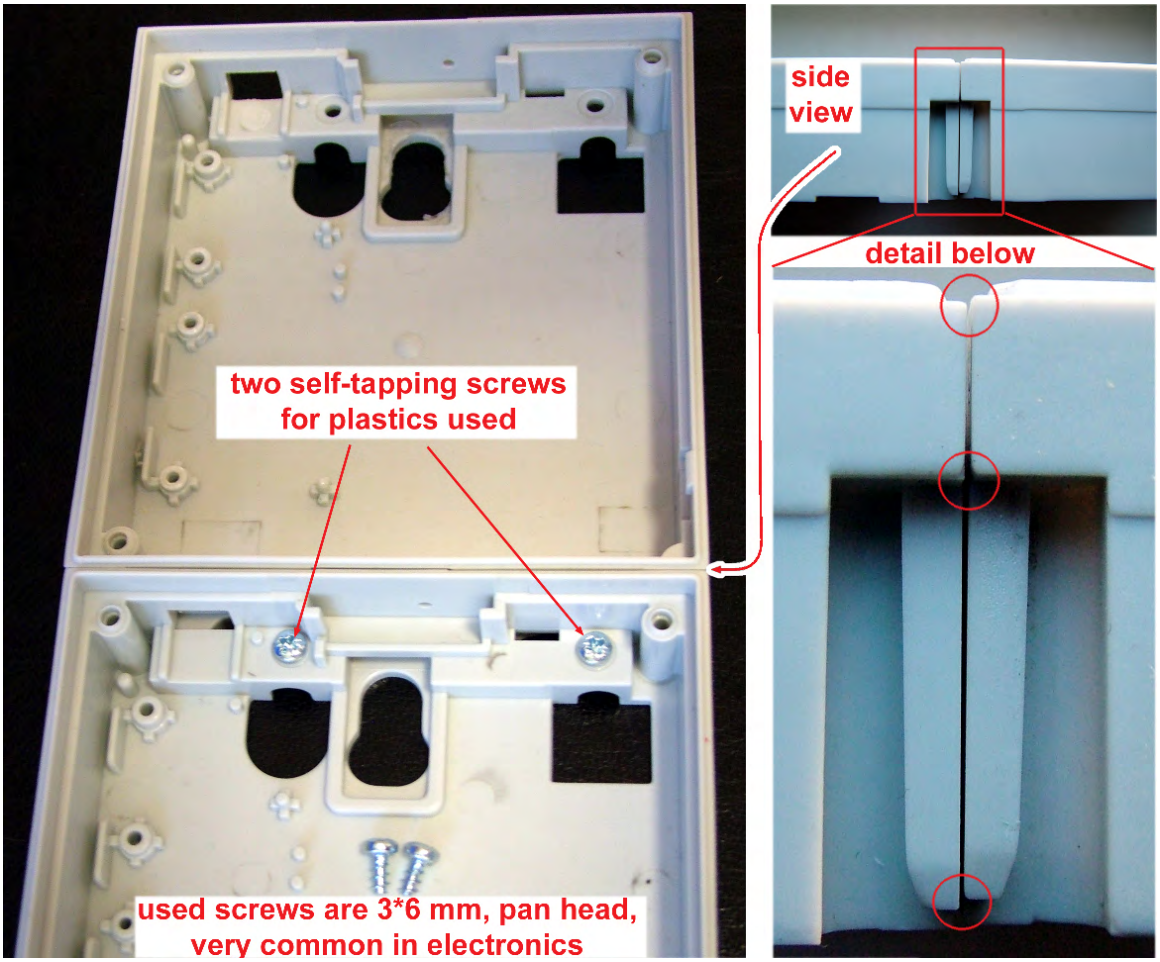
Most Frequent Mounting Errors

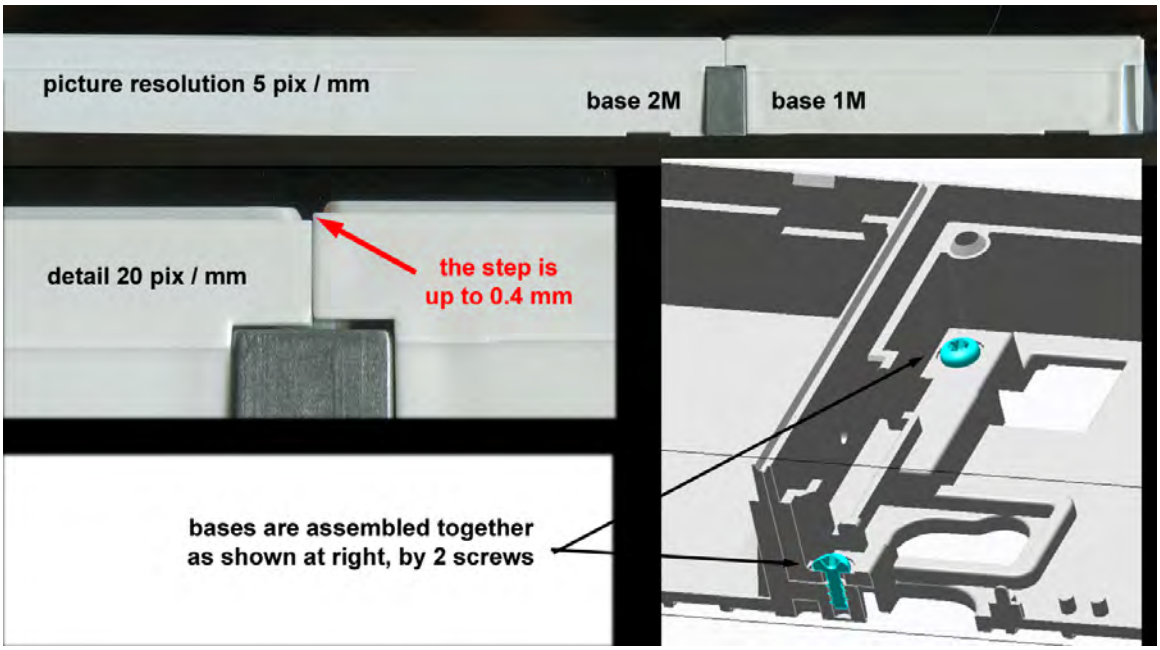
At first, mount the metal bolts, level the bases on an even surface and tighten the screws.

Caution

- Make sure that the bases are levelled properly to avoid water leakage and electronic damage.

The examples in the figures below show incorrectly assembled bases. This happens, in particular, where the screws are tightened first.


two self-tapping screws
for plastics used
used screws are 3*6 mm, pan head,
very common in electronics
side
view
detail below


picture resolution 5 pix / mm
base 2M
base 1M
detail 20 pix / mm
the step is
up to 0.4 mm
bases are assembled together
as shown at right, by 2 screws

3. Maintenance

If used frequently, the device surface, the keypad in particular, gets dirty. Use a piece of soft cloth moistened with clean water to clean the device.

Warning

- Do not use aggressive detergents (such as abrasives or strong disinfectants).

Warning

- Prevent water from getting inside the intercom.

Tip

- Clean the device in dry weather so that waste water can evaporate quickly.

4. Technical Parameters

Buttons

- **Button design:** White-backlight transparent buttons with replaceable name tags
- **Button count:** 1 and increments of 5
- **Button extenders:** Up to 30 modules, limited by power supply
- **Numeric keypad:** Optional

Audio

- **Speaker:** 0.8 W / 8 Ω

Interface

- **Power supply:** 12 V ±15 % / 2 A DC (3 A for multiple modules) and/or PoE
- **PoE:** PoE 802.3af (Class 0 – 12.95 W)
- **LAN:** 10/100BASE-TX with Auto-MDIX, RJ-45, terminal board or pigtail RJ-45
- **Recommended cabling:** Cat-5e or higher
- **Supported protocols:** DHCP opt. 66, SMTP, 802.1x, TFTP, HTTP, HTTPS, Syslog
- **Passive switch:** NO/NC contact, up to 30 V / 1 A AC / DC
- **Active switch output:**8 up to 12 V DC depending on power supply (PoE: 10 V; adapter: power supply voltage minus 2 V), up to 400 mA
- **Inputs: passive / active mode (-30 V to +30 V DC)**

  OFF = open or U_{in} > 1.5 V

  ON = short-circuit or U_{in} < 1.5 V

RFID Card Reader

- **13.56 MHz NFC** (card serial number is only read)
  - ISO14443A
    - Mifare Classic 1k & 4k, DESFire EV1, Mini, Plus S&X, SmartMX, Ultralight,
    - Ultralight C, SLE44R35, my-d move (SLE66Rxx), PayPass, Legic Advant
  - ISO14443B
    - Calypso, CEPAS, Moneo, SRI512, SRT512, SRI4K, SRIX4K, PicoPass, HID iCLASS
  - NFC
    - SmartPhone with NFC/HCE support, since Android version 4.3

Mechanical Properties

- **Cover:** Robust zinc casting with surface finish
- **Working temperature:** −40°C to 60°C
- **Working relative humidity:** 10% – 95% (non-condensing)
- **Storing temperature:** −40°C to 70°C
- **Dimensions**
  - Wall mounting frame:
    - 1 module: 107 (W) x 130 (H) x 28 (D) mm
    - 2 modules: 107 (W) x 234 (H) x 28 (D) mm
    - 3 modules: 107 (W) x 339 (H) x 28 (D) mm
  - Flush mounting frame:
    - 1 module: 130 (W) x 153 (H) x 5 (D) mm
    - 2 modules: 130 (W) x 257 (H) x 5 (D) mm
    - 3 modules: 130 (W) x 361 (H) x 5 (D) mm
  - Flush mounting box (minimum hole dimensions):
    - 1 module: 108 (W) x 131 (H) x 45 (D) mm
    - 2 modules: 108 (W) x 238 (H) x 45 (D) mm
    - 3 modules: 108 (W) x 343 (H) x 45 (D) mm
- **Weight – Max net weight:** 2 kg / max gross weight: 0.5 kg - based on configuration
- **Covering level:** IP54

5. Supplementary Information

Here is what you can find in this section:

- 5.1 Troubleshooting
- 5.2 Directives. Laws and Regulations
- 5.3 General Instructions and Cautions

5.1 Troubleshooting

For the most frequently asked questions refer to faq.2n.cz.

5.2 Directives. Laws and Regulations

Europe

2N® Access Unit conforms to the following directives and regulations:

Directive 1999/5/EC of the European Parliament and of the Council, of 9 March 1999 – on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity

Directive 2006/95/EC of the European Parliament and of the Council of 12 December 2006 on the harmonisation of the laws of Member States relating to electrical equipment designed for use within certain voltage limits

Directive 2004/108/EC of the Council of 15 December 2004 on the harmonisation of the laws of Member States relating to electromagnetic compatibility

Commission Regulation (EC) No. 1275/2008, of 17 December 2008, implementing Directive 2005/32/EC of the European Parliament and of the Council with regard to ecodesign requirements for standby and off mode electric power consumption of electrical and electronic household and office equipment

Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment

Regulation (EC) No. 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No. 793/93 and Commission Regulation (EC) No. 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC

Directive 2012/19/EC of the European Parliament and of the Council of 4 July 2012 on waste electrical and electronic equipment.

Industry Canada

This Class B digital apparatus complies with Canadian ICES-003. / Cet appareil numérique de la classe B est conforme a la norme NMB-003 du Canada.

FCC

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help.

Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

5.3 General Instructions and Cautions

Please read this User Manual carefully before using the product. Follow all instructions and recommendations included herein.

Any use of the product that is in contradiction with the instructions provided herein may result in malfunction, damage or destruction of the product.

The manufacturer shall not be liable and responsible for any damage incurred as a result of a use of the product other than that included herein, namely undue application and disobedience of the recommendations and warnings in contradiction herewith.

Any use or connection of the product other than those included herein shall be considered undue and the manufacturer shall not be liable for any consequences arisen as a result of such misconduct.

Moreover, the manufacturer shall not be liable for any damage or destruction of the product incurred as a result of misplacement, incompetent installation and/or undue operation and use of the product in contradiction herewith.

The manufacturer assumes no responsibility for any malfunction, damage or destruction of the product caused by incompetent replacement of parts or due to the use of reproduction parts or components.

The manufacturer shall not be liable and responsible for any loss or damage incurred as a result of a natural disaster or any other unfavourable natural condition.

The manufacturer shall not be held liable for any damage of the product arising during the shipping thereof.

The manufacturer shall not make any warrant with regard to data loss or damage.

The manufacturer shall not be liable and responsible for any direct or indirect damage incurred as a result of a use of the product in contradiction herewith or a failure of the product due to a use in contradiction herewith.

All applicable legal regulations concerning the product installation and use as well as provisions of technical standards on electric installations have to be obeyed. The manufacturer shall not be liable and responsible for damage or destruction of the product or damage incurred by the consumer in case the product is used and handled contrary to the said regulations and provisions.

The consumer shall, at its own expense, obtain software protection of the product. The manufacturer shall not be held liable and responsible for any damage incurred as a result of the use of deficient or substandard security software.

The consumer shall, without delay, change the access password for the product after installation. The manufacturer shall not be held liable or responsible for any damage incurred by the consumer in connection with the use of the original password.

The manufacturer also assumes no responsibility for additional costs incurred by the consumer as a result of making calls using a line with an increased tariff.

Electric Waste and Used Battery Pack Handling

Do not place used electric devices and battery packs into municipal waste containers. An undue disposal thereof might impair the environment!

Deliver your expired electric appliances and battery packs removed from them to dedicated dumpsites or containers or give them back to the dealer or manufacturer for environmental-friendly disposal. The dealer or manufacturer shall take the product back free of charge and without requiring another purchase. Make sure that the devices to be disposed of are complete.

Do not throw battery packs into fire. Battery packs may not be taken into parts or short-circuited either.

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