2N® LTE Verso

Modular LTE Intercom

Installation Manual

Firmware: 1.5
Version: 1.5

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 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.

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.

Content:

- 1. Product Overview
  - 1.1 Components and Associated Products
  - 1.2 Terms and Symbols
- 2. Description and Installation
  - 2.1 Before You Start
  - 2.2 Mechanical Installation
    - 2.2.1 One Module Box
    - 2.2.2 Two Modules Boxes
    - 2.2.3 More Two Modules Boxes
    - 2.2.4 Three Modules Box
    - 2.2.5 More Than Three Modules Boxes
    - 2.2.6 Tamper and I/O Module
    - 2.2.7 Module dimensions
    - 2.2.8 Example of Mounting Plate Installation
  - 2.3 Electric Installation
    - 2.3.1 Overvoltage Protection
  - 2.4 Extending Module Connection
  - 2.5 Completion
- 3. Function and Use
  - 3.1 Configuration
  - 3.2 Intercom Control as Viewed by External User
  - 3.3 Touch Display Intercom Control As Viewed by External User
  - 3.4 Intercom Control as Viewed by Internal User
  - 3.5 Maintenance
  - 3.6 Downloads
- 4. Technical Parameters
  - 4.1 General drawings
- 5. Supplementary Information
  - 5.1 Troubleshooting
  - 5.2 Directives, Laws and Regulations
  - 5.3 General Instructions and Cautions

1. Product Overview

Here is what you can find in this section:

- 1.1 Components and Associated Products
- 1.2 Terms and Symbols

Basic Features

2N® LTE Verso is an elegant and reliable LTE intercom equipped with lots of useful functions, which are not quite common in this category of devices. A mobile LTE connection makes it possible to install devices where no LAN cable connection is available. The My2N portal helps make calls to mobile phones and appropriate 2N devices without complex configuration. Thanks to SIP support and compatibility with major brands of PBX manufacturers, it can benefit from using VoIP networks. 2N® LTE Verso can be used as a door or special purpose intercom for office buildings, residential areas and other applications.

2N® LTE Verso is a modular system: the user determines its configuration according to the needs of the particular installation. Unlike other intercoms, 2N® LTE Verso is not delivered as a compact unit. After choosing the installation mode and particular modules, the user gets separate parts to be assembled using the plug&play connections. This approach allows for unique individual combinations and also leaves space for adding of additional modules later on.

Wide angle HD camera – allows the tenant to see the calling person on his or her videophone or PC screen in high resolution. The camera itself is hidden behind a darkened glass, so it is not visible. The intercom is equipped with night vision, which automatically selects the night/day mode according to light.

Quick dial buttons – there are 146 quick dial buttons in total in multiple button modules. For each button, up to three separate phone numbers plus substitute users can be defined, which ensures that the called user is reached whenever needed. The buttons are backlit with a clear mechanical response. The nametag surface is scratch resistant.

Keypad – is a keypad module that allows the user to use the intercom as a code lock and dial a phone number or phonebook position of the called user.

RFID card reader – the card reader module brings the access control functionality according to the RFID card or keyfob. With the advanced features, other functions can be RFID card controlled too.

Electric lock control – as part of the access system, the electrical lock can be controlled by a code entered on the keypad or the called phone, with the RFID card, via a PC application, etc. When necessary, more electrical outputs can be added. Numerous parameters allow for a wide spectrum of applications.

Robustness – **2N® LTE Verso** is designed as a vandal resistant intercom, which withstands mechanical or weather conditions with no need to purchase extra accessories.

Audio quality – using the automatic echo cancelling system, full duplex communication is available at any time.

2N ® LTE Verso installation – simply assemble the modules, insert a SIM card and connect a power supply. The modules are plug&play, so you do not have to configure them manually. The intercom is fed from a 12V power supply.

2N® LTE Verso configuration – use a PC equipped with any Internet browser.

Advantages of Use

- Easy connection via LTE data network without LAN cabling
- Elegant design
- Weather resistant
- Various modes of installation (flush, surface, plasterboard)
- Sensitive microphone and loud speaker
- Both-way audio communication – acoustic echo cancellation
- Integrated colour HD camera with wide-angle lense and hidden night vision
- Selectable number of quick dial buttons with nametags and backlight
- Optional numeric keypad with backlight
- Option to have multiple modules of the same kind – for example, card reader for both entering and leaving the building
- Integrated switches of electric locks with wide setting options
- Optional integrated RFID card reader module
- 12 V DC power supply
- Configuration using web interface
- VoIP standard SIP 2.0 support
- 10 000 Phone Book positions
- 20 user time profiles
- Video codecs (H.263, H.263+, H.264, MPEG-4, MJPEG)
- Audio codecs (G.711, G.729, G.722, L16/16kHz)
- HTTP server for configuration
- SNTP client for time synchronisation
- SMTP client for email sending, Picture to Email feature
- TFTP/HTTP client for automated firmware and configuration upgrade and update

1.1 Components and Associated Products

Main Units

Part No. 9155401C-E 	• Main unit **LTE® Verso** • European LTE support only • HD camera • There may be just one main unit in every installation. The main unit installation requires two frame/box positions one of which is left for additional installation of a module or internal antenna stuck to a plastic blind.
Part No. 9155401C-U1 	• Main unit **LTE® Verso** • US LTE support only • HD camera • There may be just one main unit in every installation. The main unit installation requires two frame/box positions one of which is left for additional installation of a module or internal antenna stuck to a plastic blind. ⚠ **Caution** • **LTE® Verso** supports T-Mobile and AT&T for the US.

Part No. 9155401CB-E 	• Main unit LTE® Verso • European LTE support only • HD camera • There may be just one main unit in every installation. The main unit installation requires two frame/box positions one of which is left for additional installation of a module or internal antenna stuck to a plastic blind. • Exposure to direct sunlight is not recommended.
Part No. 9155401CB-U1 	• Main unit LTE® Verso • US LTE support only • HD camera • There may be just one main unit in every installation. The main unit installation requires two frame/box positions one of which is left for additional installation of a module or internal antenna stuck to a plastic blind. • Exposure to direct sunlight is not recommended. **Caution** • LTE® Verso supports T-Mobile and AT&T for the US.

Caution

- There may be just one main unit (with/without a camera) in every installation. The main unit installation requires two frame/box positions one of which is left for additional installation of a module or internal antenna stuck to a plastic blind.
- One blind module with a stuck LTE antenna is supplied with the main unit.

Warning

- Removing the stuck LTE antenna from the blind module and subsequent placement into another device part, under any card reader module, e.g., results in interference and deteriorated functionality of the whole device.

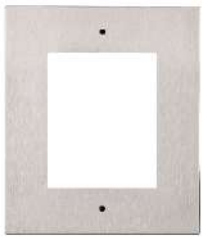
External Antennas

2N Part No. 9155048 Axis Part No. 01943-001 	• 2N® LTE Verso – external antenna • optional accessories for weak signals with an internal antenna in a blind • suitable for all LTE networks • Gain: 4.1 dB • Cable length: 2m

Diagnostic device

2N Part. No. 9155049 	• 2N® LTE Verso – debug LAN module • used fot 2N® LTE Verso troubleshooting and configuration

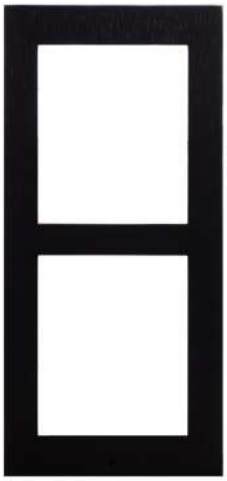
Frames

2N Part No. 9155011 Axis Part No. 01278-001 	• Flush mounting frame, 1 module
2N Part No. 9155011B Axis Part No. 01279-001 	• Flush mounting frame, 1 module
2N Part No. 9155012 Axis Part No. 01280-001 	• Flush mounting frame, 2 modules

2N Part No. 9155012B Axis Part No. 01281-001 	• Flush mounting frame, 2 modules
2N Part No. 9155013 Axis Part No. 01282-001 	• Flush mounting frame, 3 modules

2N Part No. 9155013B Axis Part No. 01283-001 	• Flush mounting frame, 3 modules
2N Part No. 9155021 Axis Part No. 01287-001 	• Surface mounting frame, 1 module

2N Part No. 9155021B Axis Part No. 01288-001 	• Surface mounting frame, 1 module
2N Part No. 9155022 Axis Part No. 01289-001 	• Surface mounting box, 2 modules

2N Part No. 9155022B Axis Part No. 01290-001 	• Surface mounting box, 2 modules
2N Part No. 9155023 Axis Part No. 01291-001 	• Surface mounting box, 3 modules

2N Part No. 9155023B Axis Part No. 01292-001 	• Surface mounting box, 3 modules

Tip

- The 1-module frame is used when another module is added to the existing installation or when the module is mounted to an extended interconnecting cable for an outgoing reader, for example.

Tip

- Be sure to order the covering frame for the flush or plasterboard mounting box together with the flush mounting box
  - 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

2N Part No. 9155030 Axis Part. No. 01252-001 	• 2N® IP/LTE Verso – Infopanel • The Infopanel module helps you place such information into the intercom installation as house number, opening hours and similar data. The Infopanel backlight is software controlled.
2N Part No. 9155031 Axis Part No. 01253-001 	• 2N® IP/LTE Verso – Keypad • The numeric keypad module helps you dial users via their phonebook positions or phone numbers, control the lock and use other code-accessible functions. The keypad digits and symbols are backlit.
2N Part No. 9155031B Axis Part No. 01254-001 	• 2N® IP/LTE Verso – Keypad • The numeric keypad module helps you dial users via their phonebook positions or phone numbers, control the lock and use other code-accessible functions. The keypad digits and symbols are backlit.

2N Part No. 9155047 Axis Part No. 01277-001 	• **2N® IP/LTE Verso** – Touch keypad • The numeric touch keypad module helps you dial users via their phonebook positions or phone numbers, control the lock and use other code-accessible functions. The keypad digits and symbols are backlit.
2N Part No. 9155032 Axis Part No. 01255-001 	• **2N® IP/LTE Verso** – RFID reader, 125 kHz • The card reader module provides you with access control via contactless cards or keyfobs. The module supports the 125 kHz EM4xxx cards.

2N Part No. 9155081
Axis Part No. 01636-001
 	
	• **2N® IP/LTE Verso** – Touch keypad & RFID reader 125kHz, 13.56MHz, NFC
	• The touch keypad and card reader module provides you with access control via contactless cards or keyfobs. The module supports the following 125 kHz and 13.56 MHz cards or other carriers (only card serial number is read):
	  • **125 kHz**
	  • EM4xxx
	  • **13.56 MHz**
	  • ISO14443A (Mifare, DESFire)
	  • PicoPass (HID iClass)
	  • FeliCa
	  • ST SR(IX)
	  • 2N® Mobile Key

2N Part No. 9155082
Axis Part No. 01637-001
 	
	• 2N® IP/LTE Verso – Bluetooth & RFID reader 125kHz, 13.56MHz, NFC
	• The bluetooth and card reader module provides you with access control via contactless cards or keyfobs. The module supports the following 125 kHz and 13.56 MHz cards or other carriers (only card serial number is read):
	  • 125 kHz
	  • EM4xxx
	  • 13.56 MHz
	  • ISO14443A (Mifare, DESFire)
	  • PicoPass (HID iClass)
	  • FeliCa
	  • ST SR(IX)
	  • 2N® Mobile Key

2N Part No. 9155083
Axis Part No. 01638-001
 	
	• **2N® IP/LTE Verso** – Touch keypad & RFID reader 125kHz, secured 13.56MHz, NFC
	• The touch keypad card reader module provides you with access control via contactless cards or keyfobs. The module supports the following 125 kHz and 13.56 MHz cards or other carriers (only card serial number is read):
	  • **125 kHz**
	  • EM4xxx
	  • **13.56 MHz**
	  • ISO14443A (Mifare, DESFire)
	  • PicoPass (HID iClass)
	  • FeliCa
	  • ST SR(IX)
	  • 2N® Mobile Key
	  • HID SE (Seos, iClass SE, Mifare SE)

2N Part No. 9155084
Axis Part No. 01639-001
 	
	• **2N® IP/LTE Verso** – Bluetooth & RFID reader 125kHz, secured 13.56MHz, NFC
	• The bluetooth card reader module provides you with access control via contactless cards or keyfobs. The module supports the following 125 kHz and 13.56 MHz cards or other carriers (only card serial number is read):
	  • **125 kHz**
	  • EM4xxx
	  • **13.56 MHz**
	  • ISO14443A (Mifare, DESFire)
	  • PicoPass (HID iClass)
	  • FeliCa
	  • ST SR(IX)
	  • 2N® Mobile Key
	  • HID SE (Seos, iClass SE, Mifare SE)

2N Part No. 9137422E Axis Part No. 01402-001 	2N® IP/LTE external Bluetooth reader (USB interface) An external Bluetooth reader connecting to your computer via USB. It can be used to pair new users who want to use their SmartPhones and 2N® Mobile Key application for access to controlled areas. A USB driver is required for the external reader to work properly.

2N Part No. 9155034
Axis Part No. 01257-001
 	
	• 2N® IP/LTE Verso – I/O
	• The module provides logical inputs and outputs for sensor integration. The module is installed under another module, i.e. needs no separate position.
	• Inputs and outputs
	  • 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 = closed contact 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 = closed contact OR U_{IN} < 1.5 V
	  • TAMPER – Tamper switch (9155038) input

2N Part No. 9155035 Axis Part No. 01258-001 	• 2N® IP/LTE Verso – 5 buttons • A module with 5 mechanical quick dial buttons. The buttons are backlit and can include nametags.
2N Part No. 9155036 Axis Part No. 01275-001 	• 2N® IP/LTE Verso – Touch display • The touchscreen module allows visitors to dial users in a smartphone-like way. It features a structured phonebook and a keypad.
2N Part No. 9155037 Axis Part No. 01259-001 	• 2N® IP/LTE Verso – Wiegand • The module helps you interconnect your system with other systems via the Wiegand interface. The module is installed under another module, i.e. needs no separate position.

2N Part No. 9155038 Axis Part No. 01260-001 	• 2N® IP/LTE Verso – Tamper switch • The module secures your system against tampering by detecting intercom opening or top frame removing. The module is installed on a special place and needs no separate position. • Remember to purchase an I/O module, Part No. 9155034, together with the tamper switch.
2N Part No. 9155039 Axis Part No. 01261-001 	• 2N® IP/LTE Verso – Blind Panel • One blind panel module is supplied with the main unit.

2N Part No. 9155040
Axis Part No. 01262-001
 	
	• 2N® IP/LTE Verso – RFID reader NFC support, 13.56 MHz
	• The card reader module provides you with access control via contactless cards or keyfobs. The module supports the following 13.56 MHz cards or other carriers (only card serial number is read):
	  ◦ ISO14443A (Mifare, DESFire)
	  ◦ PicoPass (HID iClass)
	  ◦ FeliCa
	  ◦ ST SR(IX)
	• 2N® Mobile Key

2N Part No. 9155041 Axis Part No. 01263-001 	• 2N® IP/LTE Verso – Induction loop • The induction loop module is used to transmit an audio signal directly into a hearing aid via a magnetic field.

2N Part No. 9155086
Axis Part No. 01264-001
 	
	• 2N® IP/LTE Verso – Secured RFID card reader NFC support, 13.56 MHz
	• Compatible with firmware 2.13 and higher
	• The card reader module provides you with access control via contactless cards or keyfobs. The module supports the following 13.56 MHz cards or other carriers (optionally card serial number or PAC ID is read):
	  • ISO14443A (Mifare, DESFire)
	  • PicoPass (HID iClass)
	  • FeliCa
	  • ST SR(IX)
	  • 2N® Mobile Key
	  • HID SE (Seos, iClass SE, Mifare SE)

2N Part No. 9155046 Axis Part No. 01266-001 	• 2N® IP/LTE Verso – Bluetooth reader • The Bluetooth reader is used for reading users' secure IDs from Android and iOS SmartPhone applications.

2N Part No. 9155045 Axis Part No. 01276-001 	• 2N® IP/LTE Verso – Fingerprint reader • The Fingerprint reader is used for verification of human fingers for access control and intercom control.
2N Part No. 9155050 Axis Part No. 01267-001 	• 1 m extension cable • Only one extension cable is allowed. • Maximum bus length is 7 m.
2N Part. No. 9155051 Axis Part No. 01270-001 	• Blind button

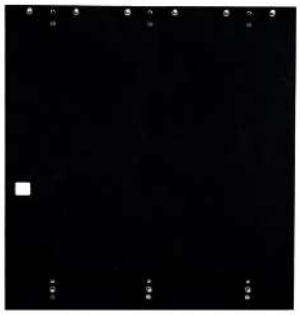
2N Part No. 9155054 Axis Part No. 01268-001 	• 3 m extension cable • Only one extension cable is allowed. • Maximum bus length is 7 m.
2N Part No. 9155055 Axis Part No. 01269-001 	• 5 m extension cable • Only one extension cable is allowed. • Maximum bus length is 7 m.

Mounting Accessories

2N Part No. 9155014 Axis Part No. 01284-001 	• Flush mounting box • 1 module • Designed for flush or plasterboard mounting of 1-module sets and delivered including accessories for multiple box assemblies
2N Part No. 9155015 Axis Part No. 01285-001 	• Flush mounting box • 2 modules • Designed for flush or plasterboard mounting of 2-module sets and delivered including accessories for multiple box assemblies

2N Part No. 9155016 Axis Part No. 01286-001 	• Flush mounting box • 3 modules • Designed for flush or plasterboard mounting of 3-module sets and delivered including accessories for multiple box assemblies
2N Part No. 9155061 Axis Part No. 01293-001 	• Backplate, 1 module • For glass or uneven surface installations
2N Part No. 9155062 Axis Part No. 01294-001 	• Backplate, 2 modules • For glass or uneven surface installations

2N Part No. 9155063 Axis Part No. 01295-001 	• Backplate, 3 modules • For glass or uneven surface installations
2N Part No. 9155064 Axis Part No. 01296-001 	• Backplate, 2 (w) x 2 (h) modules • For glass or uneven surface installations
2N Part No. 9155065 Axis Part No. 01297-001 	• Backplate, 3 (w) x 2 (h) modules • For glass or uneven surface installations

2N Part No. 9155066 Axis Part No. 01298-001 	• Backplate, 2 (w) x 3 (h) modules • For glass or uneven surface installations
2N Part No. 9155067 Axis Part No. 01299-001 	• Backplate, 3 (w) x 3 (h) modules • For glass or uneven surface installations

2N Part No. 9155072 Axis Part No. 01940-001 	• Wedge backplate • 25° gradient mounting backplate

Choose the proper frame and, if necessary, mounting box type depending on your particular 2N® LTE Verso installation needs. 2N® LTE Verso is designed for outdoor applications and requires no additional roof.

Internal Units and Accessories

Part Numbers: 2N Part No. 91378375 Axis Part No. 01668-001 2N Part No. 91378376 Axis Part No. 01670-001 	• 2N® Indoor Touch 2.0 – black • WiFi version (latter Part No.) • 2N® Indoor Touch 2.0, an elegant internal touch panel, is suitable for all the 2N IP/LTE intercoms. You can display and start conversation with the person standing at the door, unlock the door or turn on the entrance hall light.
Part No. 91378382 Axis Part No. 01425-001 	• 2N® Indoor Touch desk stand – black
Part Numbers: 2N Part No. 91378375WH Axis Part No. 01669-001 2N Part No. 91378376WH Axis Part No. 01671-001 	• 2N® Indoor Touch 2.0 – white • WiFi version (the latter Part No.) • 2N® Indoor Touch 2.0, an elegant internal touch panel, is suitable for all the 2N IP/LTE intercoms. You can display and start conversation with the person standing at the door, unlock the door or turn on the entrance hall light.

2N Part No. 91378382W Axis Part No. 01426-001 	• 2N® Indoor Touch desk stand – white

VoIP Phones

2N Part No. 91378357 Axis Part No. 01422-001 	• Grandstream GXV3240 VoIP video telephone • GXV3240 is the successor to the popular GXV3140 model, which allows comfortable video calls in the IP network. Touchscreen and keypad control.
2N Part No. 91378358 Axis Part No. 01421-001 	• Grandstream GXV3275 VoIP telephone • GXV3275 is the successor to the popular GXV3175 model, which allows comfortable video calls in the IP network. Touchscreen control.

Electric Locks

Part No. 932071E 	• BEFO 11211 • 12 V / 230 mA DC • Low consumption
Part No. 932081E 	• BEFO 11221 with momentum pin • 12 V / 230 mA DC • Low consumption • A short electrical pulse is sufficient to unlock and open the door. The lock then remains open until someone closes the door.
Part No. 932091E 	• BEFO 11211MB with mechanical blocking • 12 V / 230 mA DC • Low consumption • Enables to close or open the lock mechanically. Once opened, the lock remains so all the time. Once closed, the lock behaves as a standard electrical lock.

Part No. 932061E 	• BEFO 211211 door signalling, low consumption • 12 V / 230 mA • A regular lock with a built-in contact to indicate whether the door is open or closed.
Part No. 932072E 	• BEFO 31211 • fail-safe • 12 V / 170 mA DC • The fail-safe lock is closed when electricity is switched on. When electricity is interrupted, the lock is opened.
Part No. 932062E 	• BEFO 321211 • fail-safe, door signalling • 12 V / 170 mA • The fail-safe lock is closed when electricity is switched on. When electricity is interrupted, the lock is opened. • It contains a built-in contact to indicate whether the door is open or closed.

Tip

- FAQ: Electric locks – Difference between locks in 2N IP/LTE intercom accessories

Power Supply

Part No. 91341481E 	• Stabilised 12 V / 2 A power supply needs to be used where no PoE is available.
Part No. 932928 	• 12 V transformer • For 230 V mains voltage. • For 12 V AC external power supply of the lock.

13 MHz RFID

2N Part No. 9159031
Axis Part No. 01390-001
 	
	• External 13.56 MHz Mifare RFID card reader, Wiegand
	• Secondary reader for connection to an internal reader. Allows for card entry control from both sides of the door. IP68 cover, also suitable for exteriors. Reads cards:
	  • ISO14443A (Mifare, DESFire)
	  • PicoPass (HID iClass)
	  • FeliCa
	  • ST SR(IX)
	  • 2N® Mobile Key

2N Part No. 9137421E
Axis Part No. 01400-001
 	
	• **Ext. RFID Reader 13.56 MHz, 125 kHz + NFC/HCE (USB interface)**
	• External RFID card reader for connection to PC using a USB interface. Suitable for system administration and adding 13.56 MHz, 125 kHz cards and Android platform devices supporting NFC/HCE using **2N IP intercom** web interface or the **2N® Access Commander** application. It reads the same types of cards and devices as card readers in **2N IP intercoms**:
	  • **125 kHz**
	  • EM4xxx
	  • **13.56 MHz**
	  • ISO14443A (Mifare, DESFire)
	  • PicoPass (HID iClass)
	  • FeliCa
	  • ST SR(IX)
	  • 2N® Mobile Key

2N Part No. 9137424E
Axis Part No. 01527-001
 	
	• **Ext. secured RFID Reader 13.56 MHz, 125 kHz + NFC /HCE (USB interface)**
	• External secured RFID card reader for connection to PC using a USB interface. Suitable for system administration and adding 13.56 MHz, 125 kHz cards and Android platform devices supporting NFC/HCE using **2N IP intercom** web interface or the **2N® Access Commander** application. It reads the same types of cards and devices as card readers in **2N IPintercoms**:
	  • **125 kHz**
	  • EM4xxx
	  • **13.56 MHz**
	  • ISO14443A (Mifare, DESFire)
	  • PicoPass (HID iClass)
	  • FeliCa
	  • ST SR(IX)
	  • 2N® Mobile Key
	  • HID SE (Seos, iClass SE, Mifare SE)

2N Part No. 9134173 Axis Part No. 01384-001 	• Mifare Classic 1k RFID card, 13.56 MHz

2N Part No. 9134174 Axis Part No. 01385-001 	• Mifare Classic 1k RFID fob, 13.56 MHz

125 kHz RFID

2N Part No. 9159030 Axis Part No. 01389-001 	• External 125 kHz RFID card reader • Secondary reader for connection to an internal reader. Allows for card entry control from both sides of the door. IP67 cover, also suitable for exteriors. Reads EM4xxx cards.
2N Part No. 9137420E Axis Part No. 01399-001 	• USB RFID card reader, 125 kHz • External RFID card reader for PC connection via a USB interface. Suitable for system management and addition of EM41xx cards via the **2N® Access Commander** PC application.
2N Part No. 9134165E Axis Part No. 01395-001 	• EM4100 RFID card, 125 kHz

2N Part No. 9134166E Axis Part No. 01396-001 	• EM4100 RFID fob, 125 kHz

Biometry

2N Part No. 9137423E Axis Part No. 01401-001 	• 2N® IP intercom - external fingerprint reader (USB interface)

External Switches

2N Part No. 9159010 Axis Part No. 01386-001 	• 2N® Security Relay • A handy add-on that significantly enhances door entry security as it prevents tampering with the intercom and forced lock opening. To be installed between the intercom and lock, powered by the intercom.
2N Part No. 9137410E Axis Part No. 01397-001 	• External IP relay – 1 output • Standalone IP device which can be controlled by the 2N IP/LTE intercom HTTP commands, which can thus control devices over an unlimited distance.
2N Part No. 9137411E Axis Part No. 01398-001 	• External IP relay – 4 outputs, PoE • Standalone IP device which can be controlled by t he 2N IP/LTE intercom HTTP commands, which can thus control devices over an unlimited distance.

2N Part No. 9160501 Axis Part No. 0820-001 	• AXIS A9188 Network I/O relay module • Lift control relay module for up to 8 floors

Induction Loop

2N Part No. 9155043 Axis Part No. 01265-001 	• Induction loop module – antenna • External antenna boosts the range of usability of the induction loop so that a hearing impaired user with a telecoil hearing aid can receive the audio signal in a wider area. It has to be used with **Part No. 9155041**. A 40 cm long interconnecting cable is included. • Dimensions: 233 (W) x 233 (H) mm

Tip

- FAQ: **Induction loop – How to connect it with 2N IP/LTE intercom**

Sensors and Switches

Part No. 9159013 	• Exit button • Connection button to a logic input for opening a door inside a building.
2N Part No. 9154004 Axis Part No. 01479-001 	• Water-proof metal button
2N Part No. 9159012 Axis Part No. 01388-001 	• Magnetic door contact • Door installation set that enables the door opening status to be ascertained. Used where the intercom is used for door protection, to detect open door or door violation.

Additional Modules

2N Part No. 9159011 Axis Part No. 01387-001 	• The 2N® Wiegand Isolator is designed for galvanic isolation of two devices separately power supplied and interconnected via the Wiegand bus. The 2N® Wiegand Isolator protects the interconnected devices against communication errors and/or damage.

License

2N Part No. 9137905 Axis Part No. 01376-001	• Enhanced Audio
2N Part No. 9137906 Axis Part No. 01377-001	• Enhanced Video
2N Part No. 9137907 Axis Part No. 01378-001	• Enhanced Integration
2N Part No. 9137908 Axis Part No. 01379-001	• Enhanced Security
2N Part No. 9137909 Axis Part No. 01380-001	• Gold
2N Part No. 9137910 Axis Part No. 01381-001	• InformaCast
2N Part No. 9137915 Axis Part No. 01382-001	• NFC

2N Part No. 9137916 Axis Part No. 02001-001	• Lift Module

Tip

- Refer to the Configuration Manual for 2N IP intercoms, Subs. **3.2 Function Licensing** for details.

Tip

- For more accessories and specific advice please contact your local distributor of 2N products.

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 Completion

2.1 Before You Start

Product Completeness Check

Before you start please check whether the contents of the package of your new 2N® LTE Verso complies with the following list.

- 1x 2N® LTE Verso
- 1x brief manual
- 1x Certificate of ownership

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 mounting types.

Flush mounting – classic bricks

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

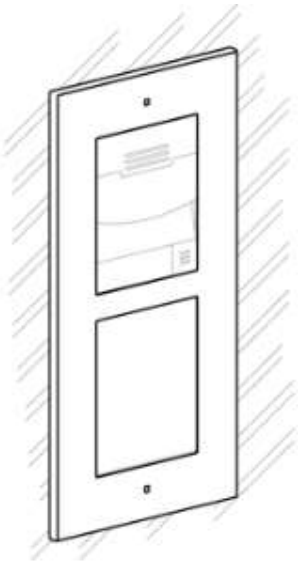
What you need for mounting:

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



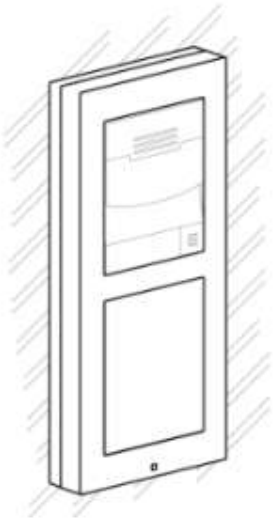
Surface mounting

- concrete and steel structures, entry barrier columns, interior, etc.

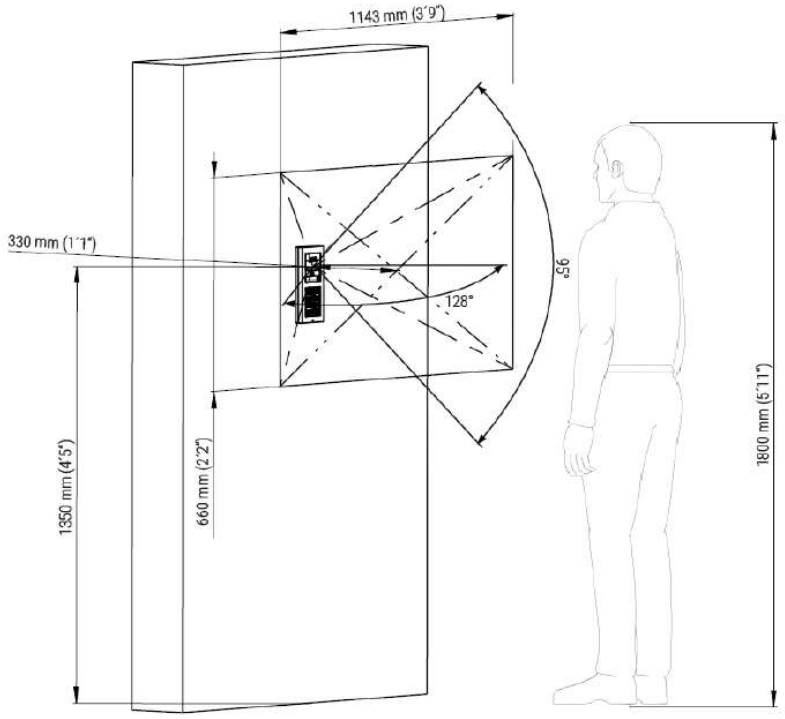
What you need for mounting:

- 2N® IP/LTE Verso plus the respective frames
  - 1x module: frame Part No. 9155021
  - 2x modules: frame Part No. 9155022
  - 3x modules: frame Part No. 9155023

For not flat surface use according to the module number backplate Part No 9155061–9155067.



- The recommended standard installation height is 1350 mm from the ground to the device camera level. The installation height may vary depending on the device use.



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. 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 communicator 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!
- Do not remove the plastic film on the seal inside the frame, otherwise water may leak and damage the electronic components.

General Mounting Principles

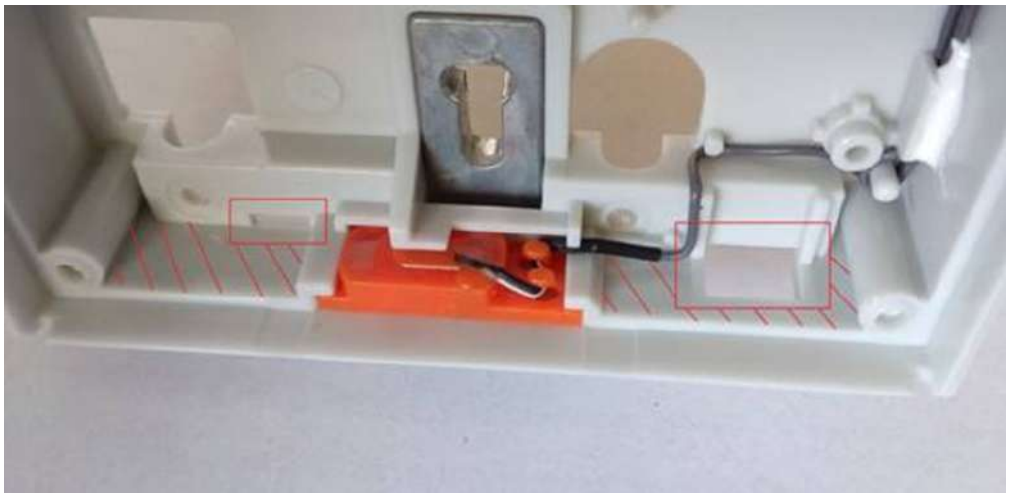
Tip

- 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 boxes in advance and commission your building company to do the masonry for you. This approach helps you put your intercom exactly in the vertical position.

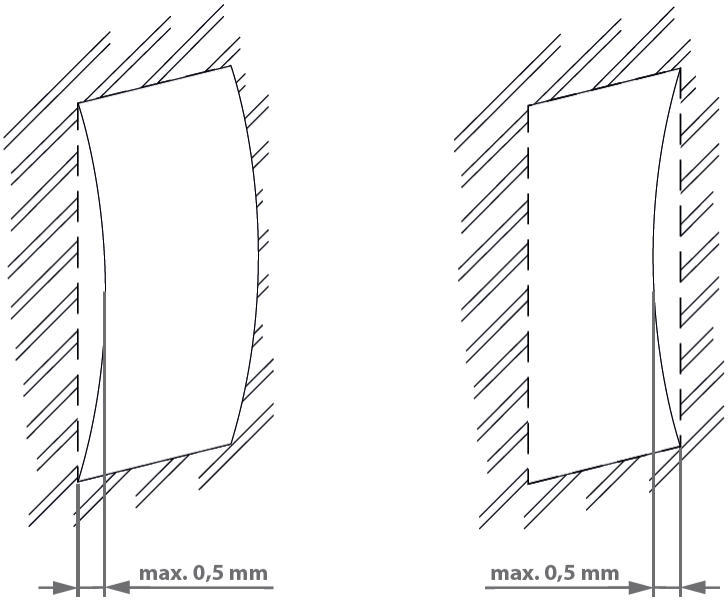
Caution

- Before starting the mechanical installation on a selected place, make sure carefully that the preparations connected with it (drilling, wall cutting) cannot damage the electrical, gas, water and other existing wires and pipes.
- 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 their pulling out of the wall!
- Having removed the front panel, make sure that no dirt gets inside the product (especially onto the sealing surface).
- Never turn 2N® IP Verso to align the box assembly 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.
- Make sure that the installation surface is perfectly flat with the maximum inequality of 0.5 mm. (e.g. boards, glass, cut stone, etc). If this is not the case, use a flush mounting backplate Part No 9155061–9155067, or level the wall surface.
- Always use an installation backplate for uneven installation surfaces.
- While flush mounting, make sure that the box is installed properly, i.e. with the box frame on the wall surface. There are snap-off protrusions on both sides of the flush mounting box to facilitate positioning. Make sure that the frame is placed precisely onto the flush mounting box off the wall to provide effective sealing and avoid water penetration into the intercom. Refer to the pictorial instructions inside the flush mounting box package.
- Any intentional mechanical damage (drilling, main unit tampering, etc.) results in a loss of warranty.

Warning!



- It is forbidden to use silicone or any other sealing material on the marked and hatched places.



Safety

- Eliminate the risk of personal injury! Surface 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 Modules Box
- 2.2.3 More Two Module Boxes
- 2.2.4 Three Modules Boxes
- 2.2.5 More Than Three Modules Boxes
- 2.2.6 Tamper and I/O Modules
- 2.2.7 Module dimension

Instalace příslušenství pro montáž

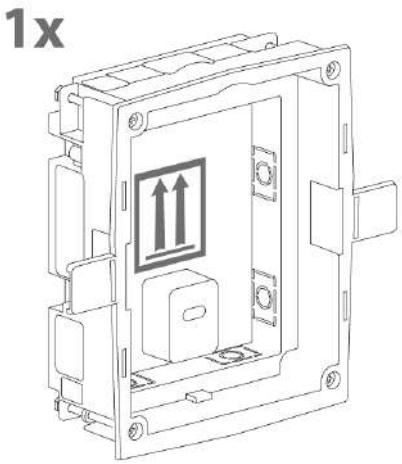
- 2.2.8 Instalace montážní desky

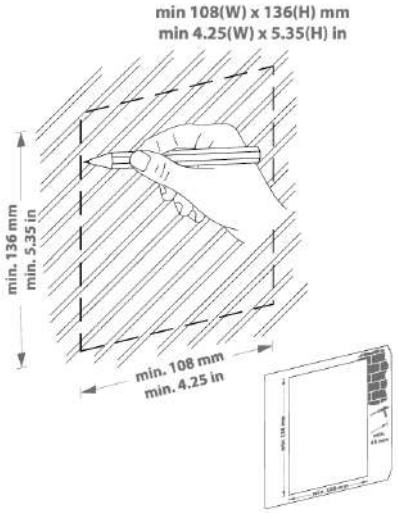
2.2.1 One Module Box

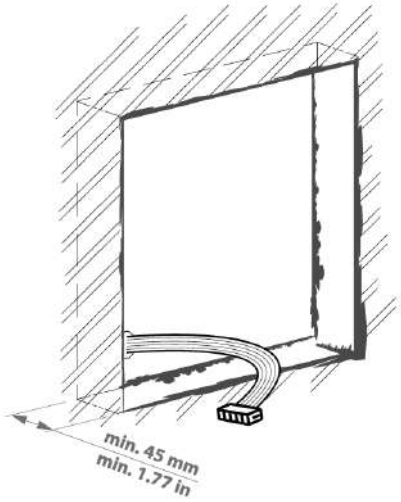
Caution

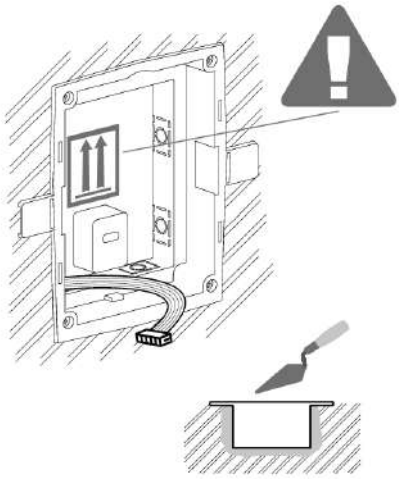
- The one-module box is designed for stand-alone installations of extending modules such as departure readers. A two-module box is required for the main unit installation.

Flush mounting box mounting – classic bricks

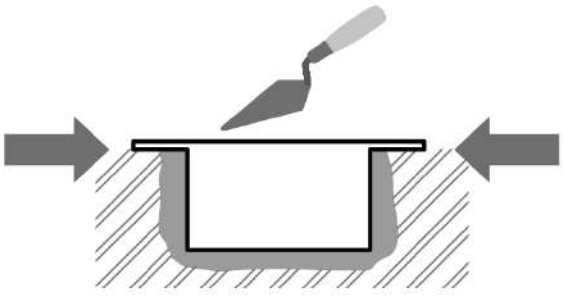



min 108(W) x 136(H) mm
min 4.25(W) x 5.35(H) in
min. 136 mm
min. 5.35 in
min. 108 mm
min. 4.25 in

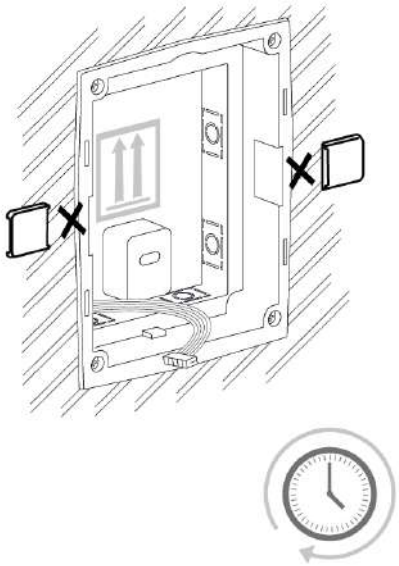

min. 45 mm
min. 1.77 in



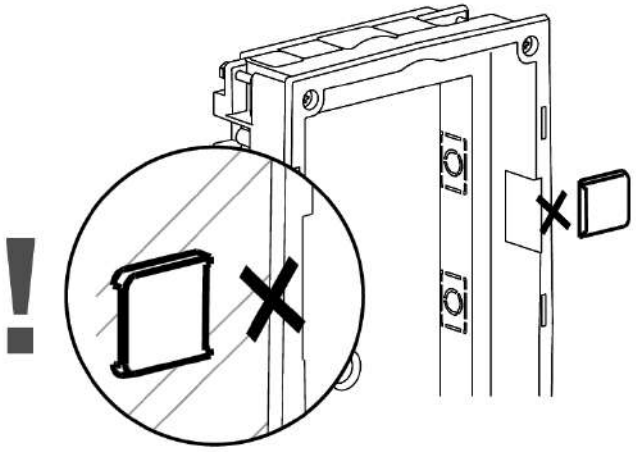
Warning



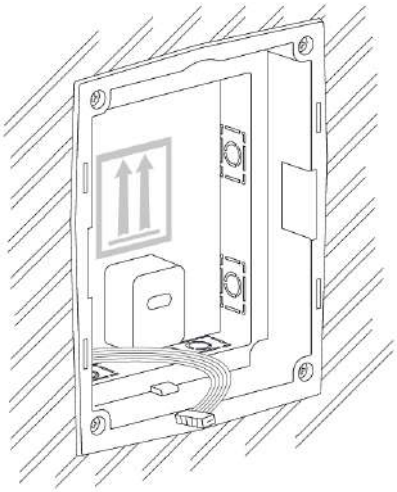
- Make sure that the flush mounting box is slightly above the wall surface not aligning with the wall. A wrong installation may lead to water penetration and subsequent damage of the device. Use the side protrusions to achieve the proper flush mounting.



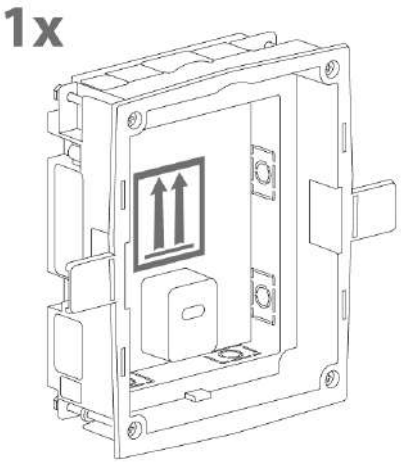
Caution

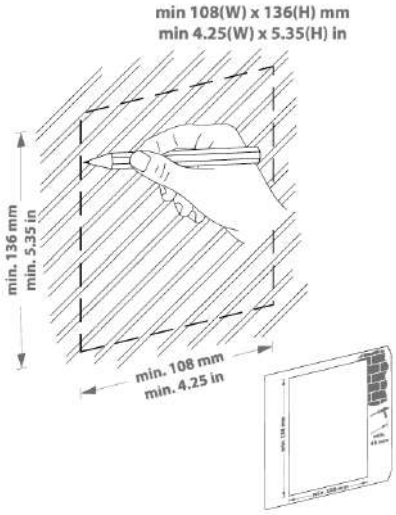


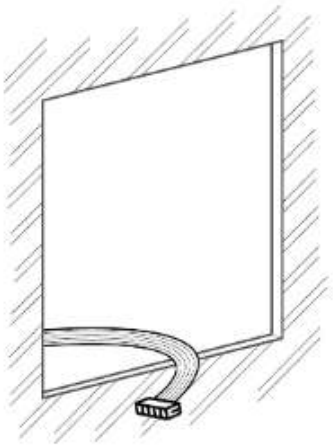
- Break off the side protrusions when the walling material has hardened.

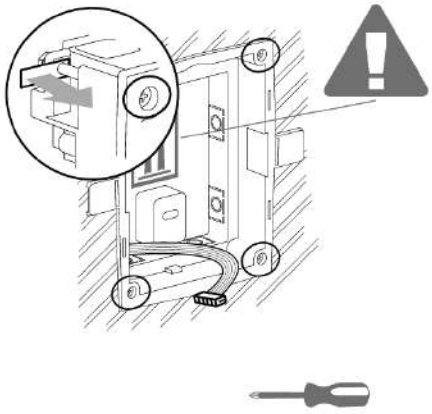


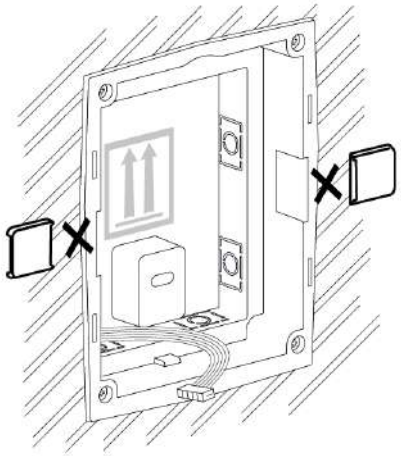
Flush mounting box mounting – plasterboard

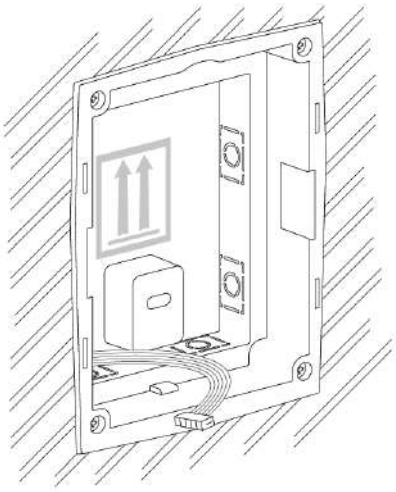




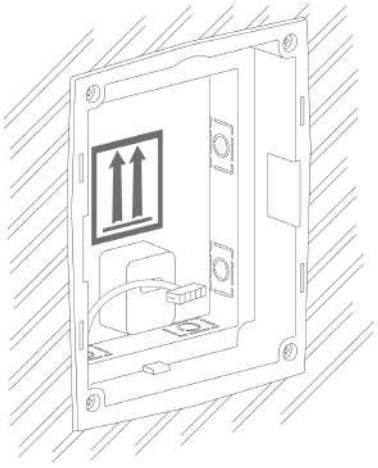


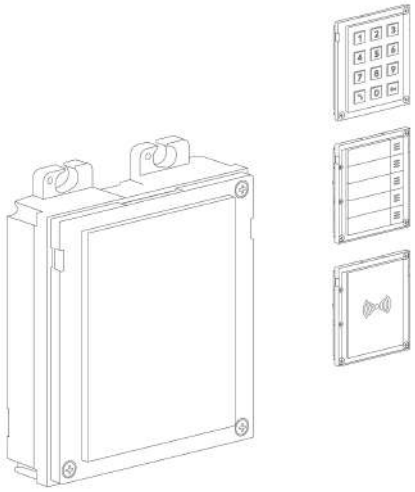


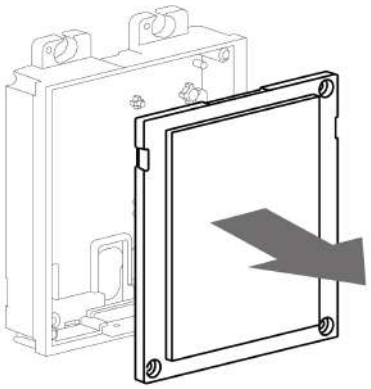


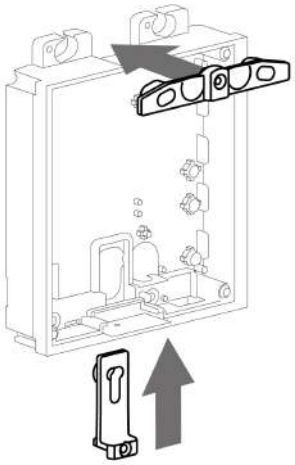


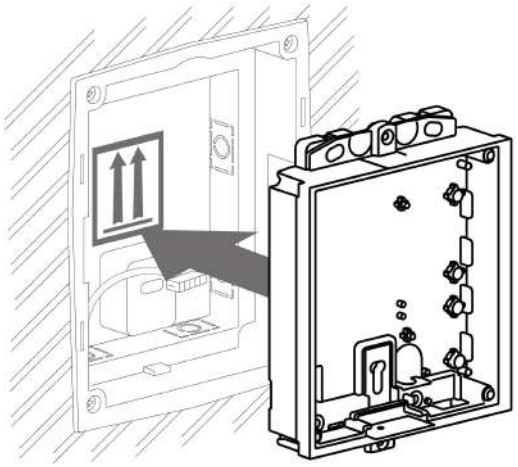
Flush module mounting

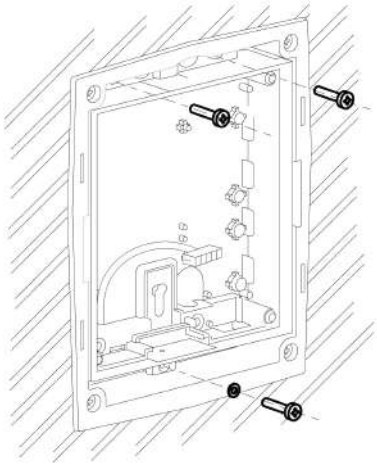


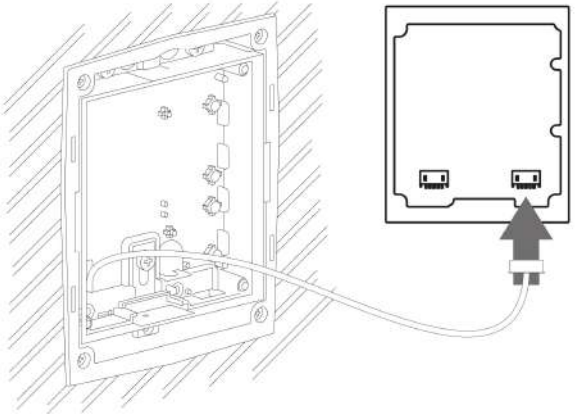


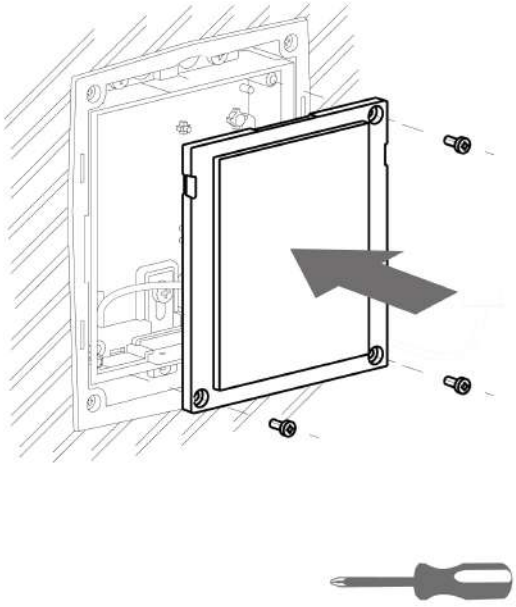


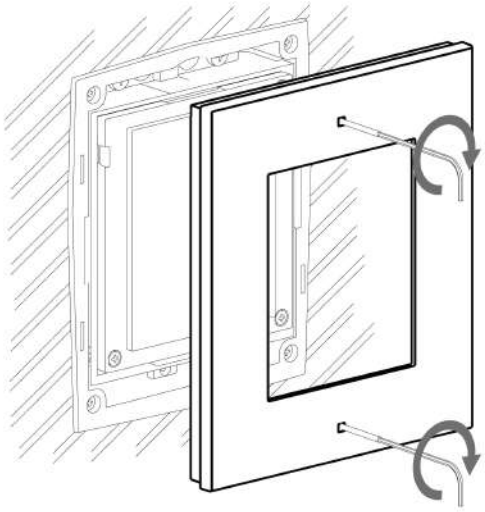


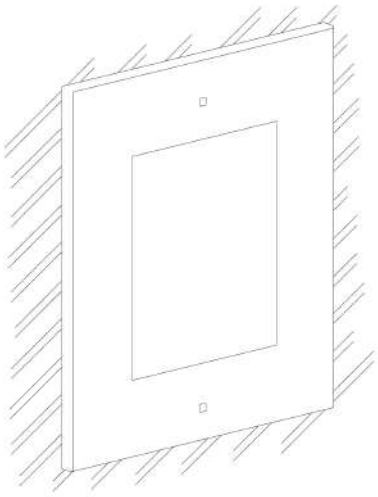




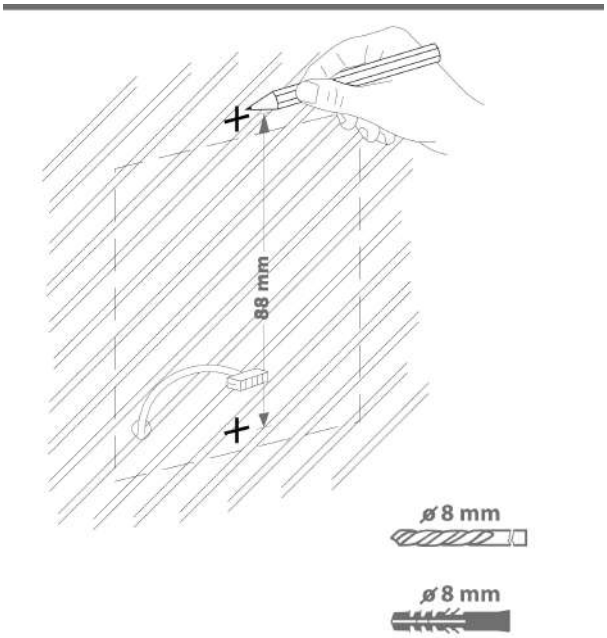


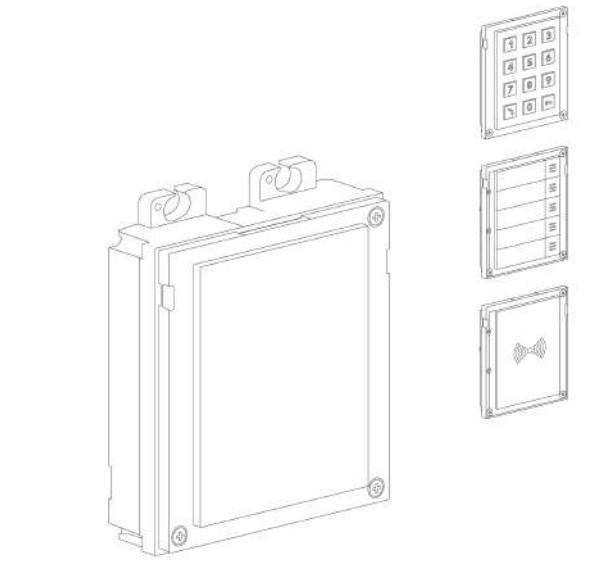


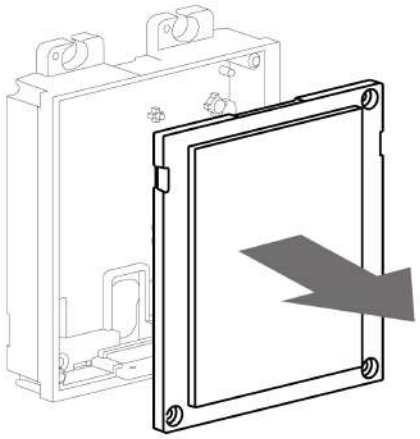


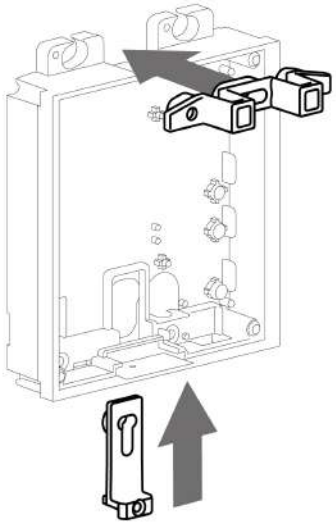


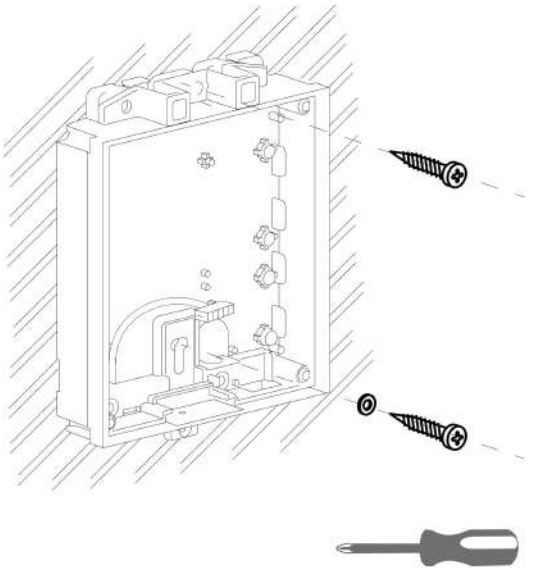
Surface module mounting

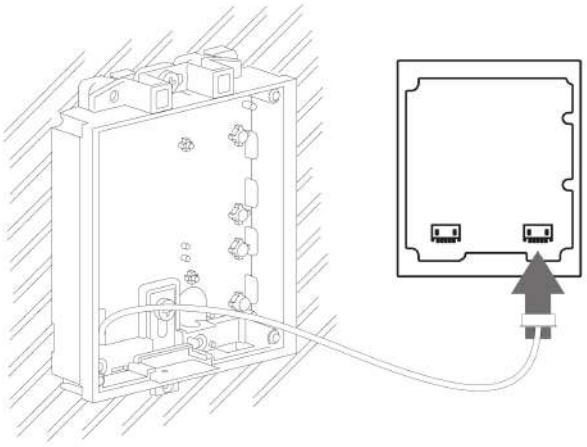


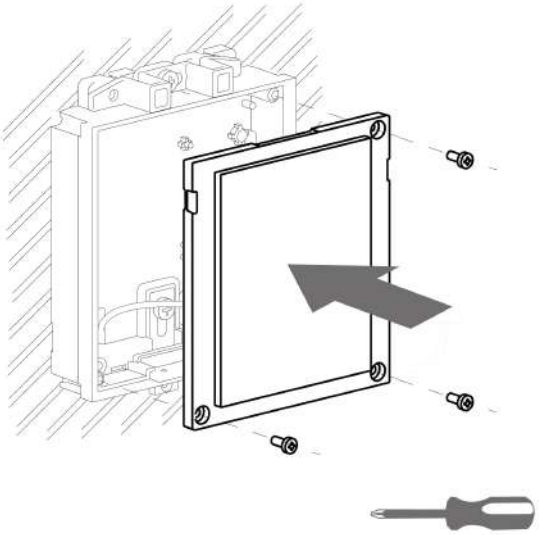


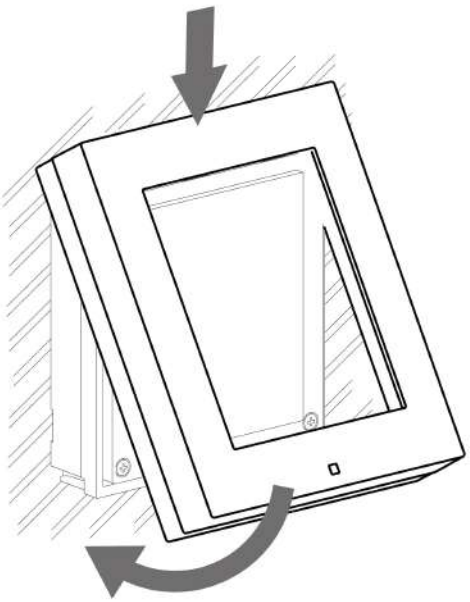


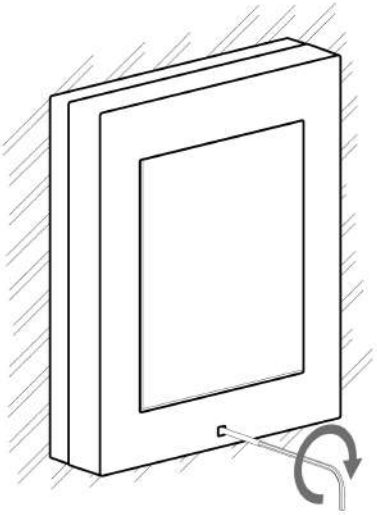


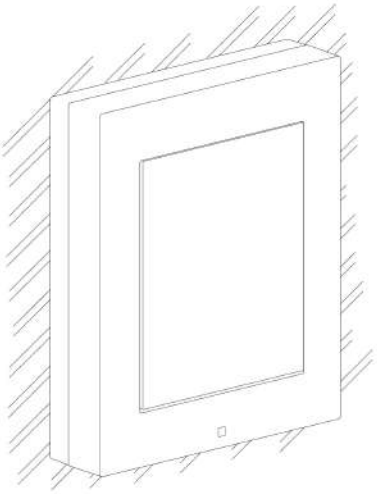






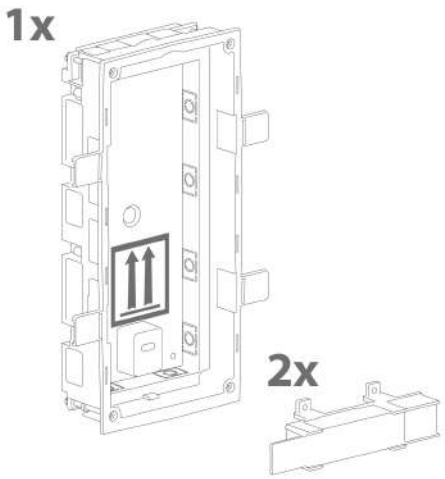




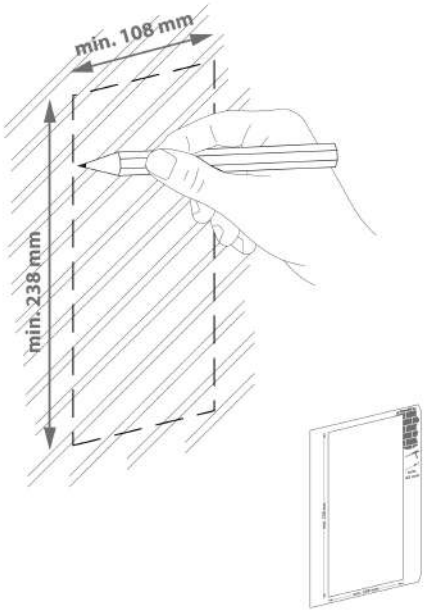


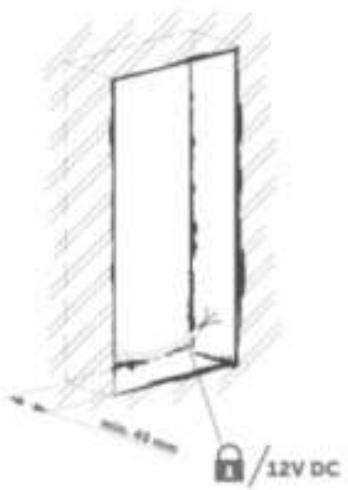
2.2.2 Two Modules Boxes

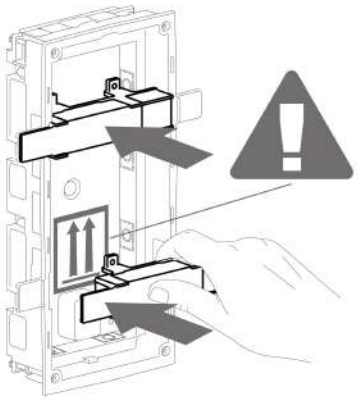
Flush mounting box mounting – classic bricks

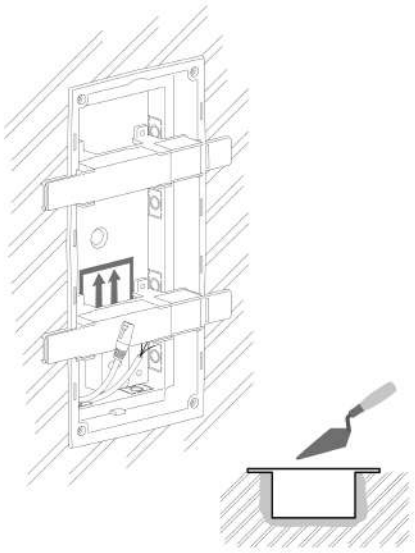


min 108(W) x 238(H) x 45(D) mm

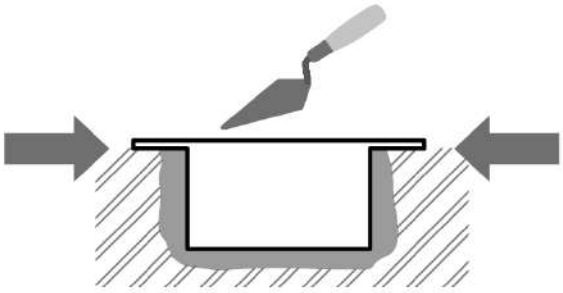



12V DC

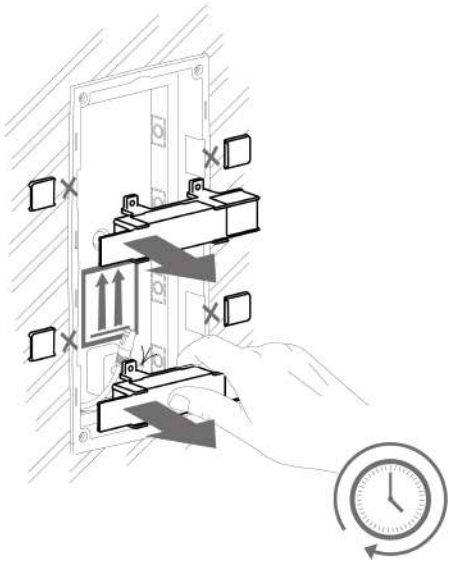




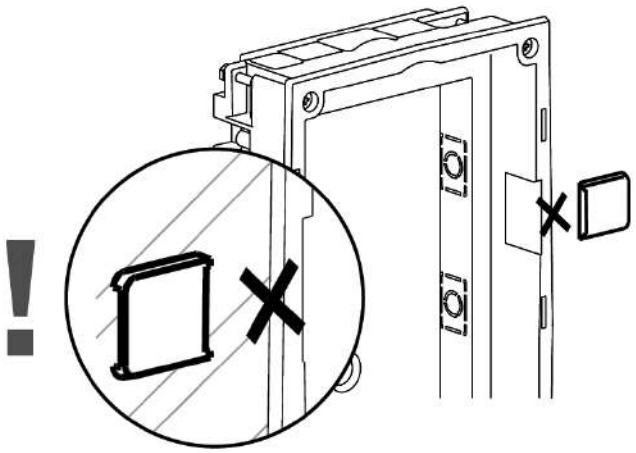
Warning



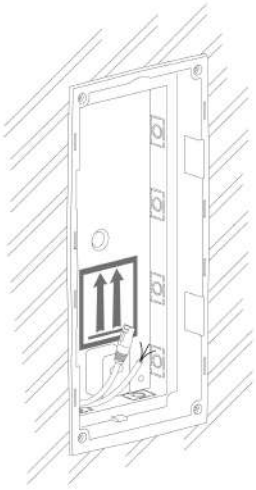
- Make sure that the flush mounting box is slightly above the wall surface not aligning with the wall. A wrong installation may lead to water penetration and subsequent damage of the device. Use the side protrusions to achieve the proper flush mounting.



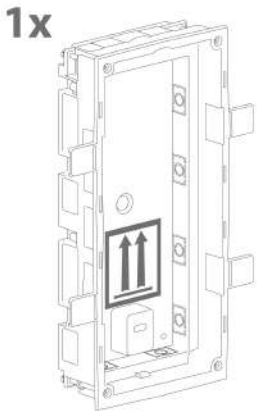
Caution

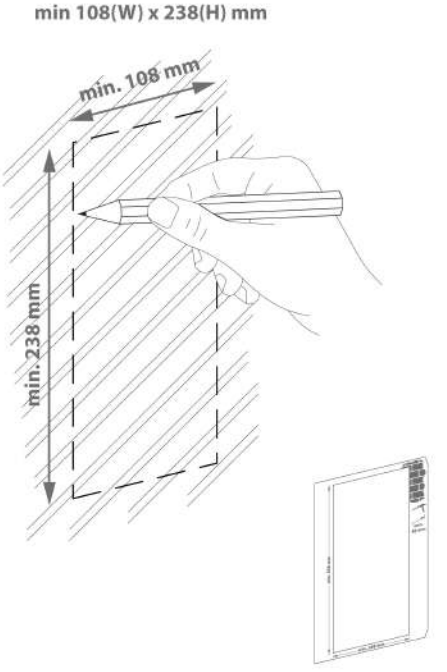


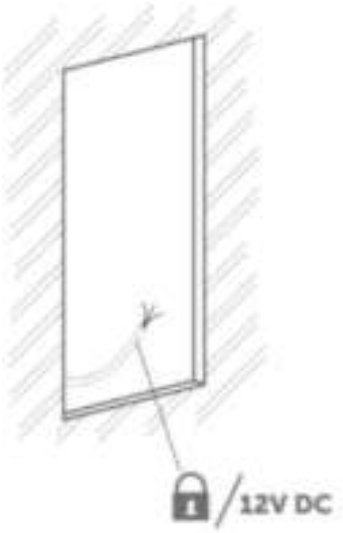
- Break off the side protrusions when the walling material has hardened.

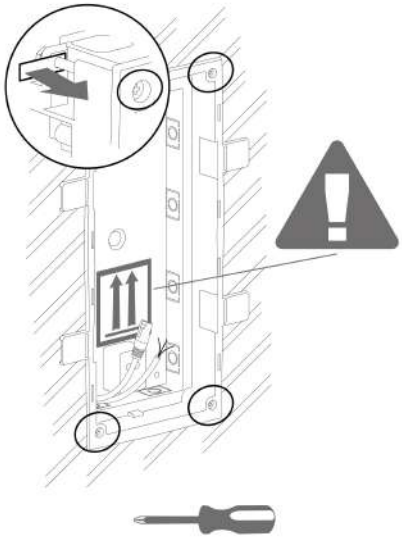


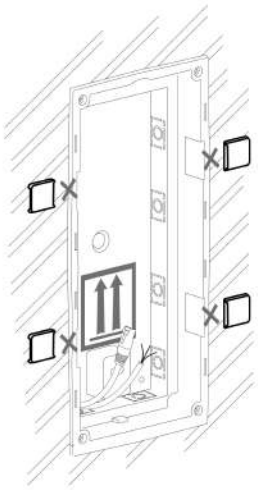
Flush mounting box mounting – plasterboard

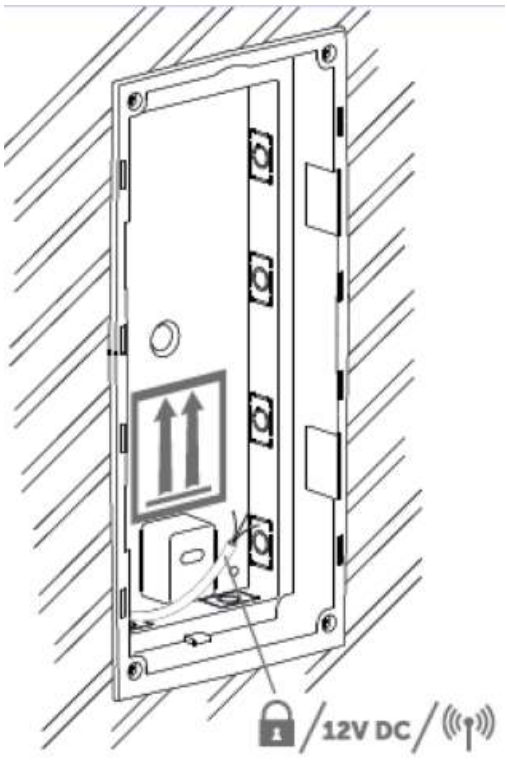




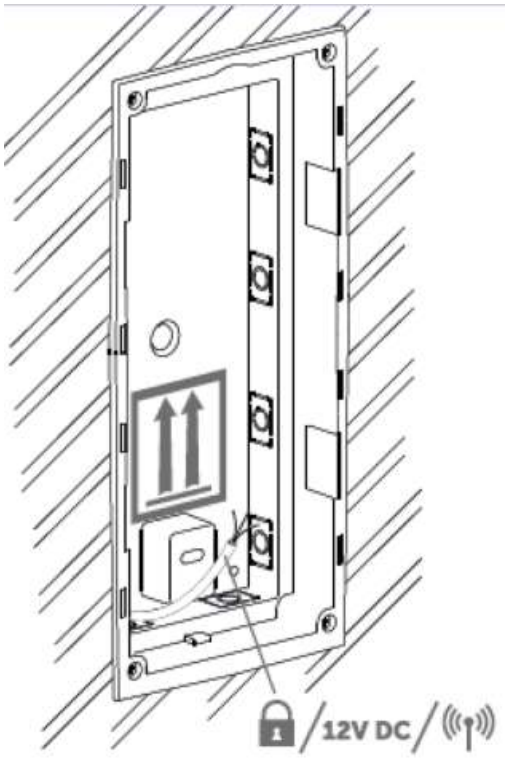

12V DC

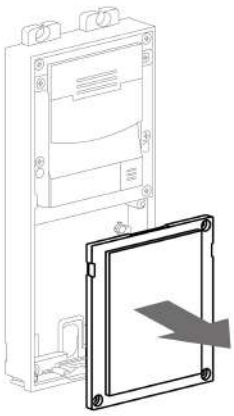


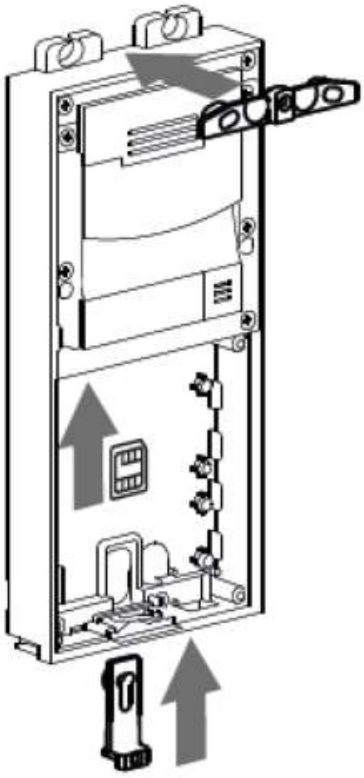


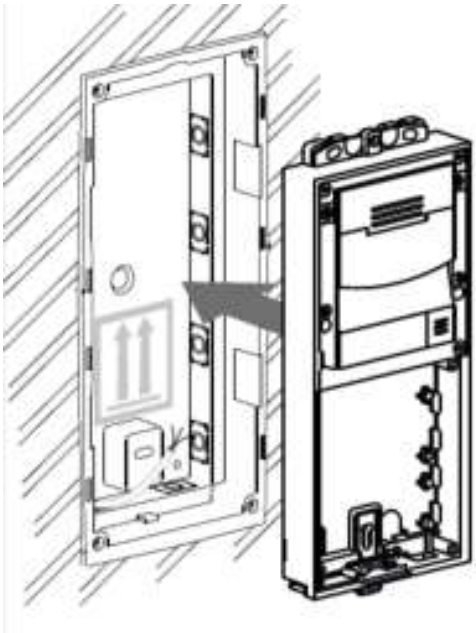

12V DC

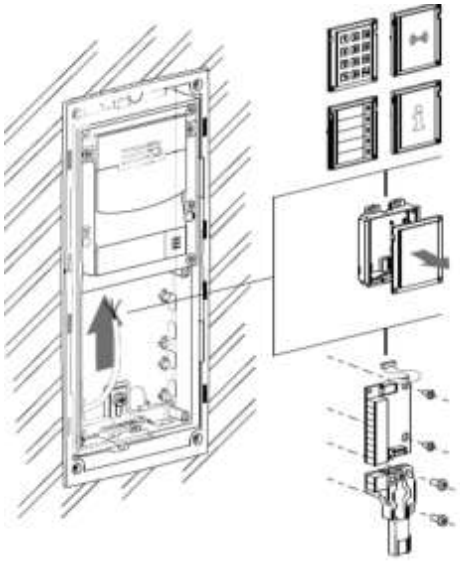
Flush module mounting

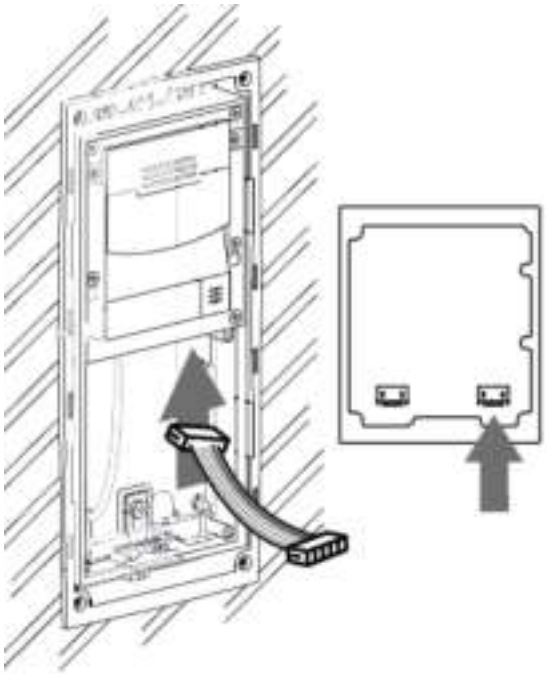


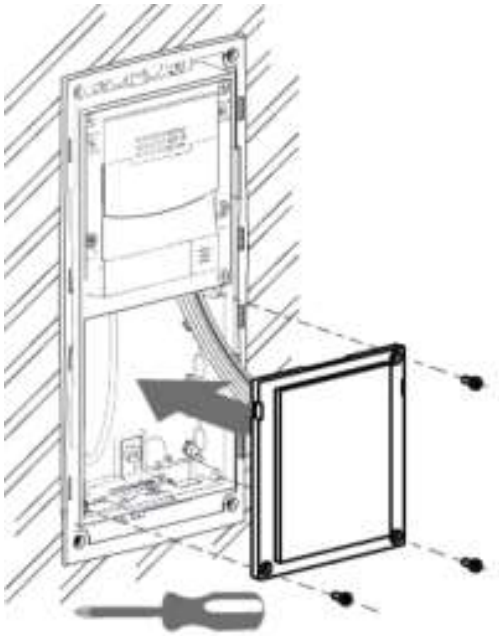


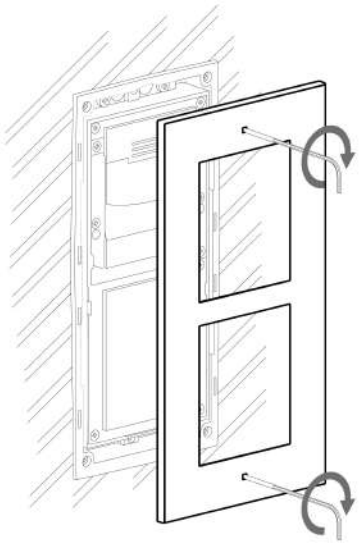


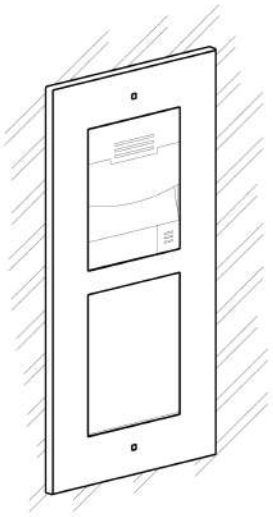




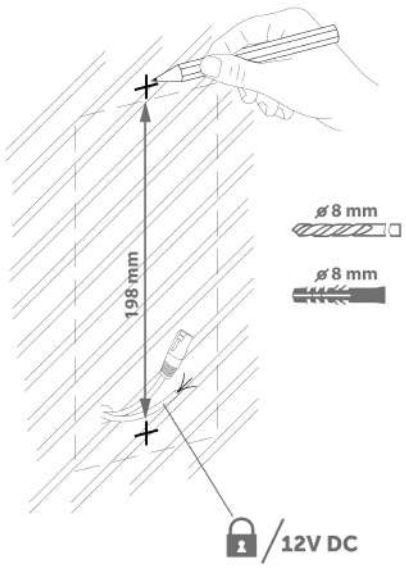


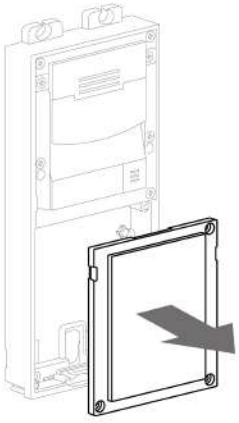


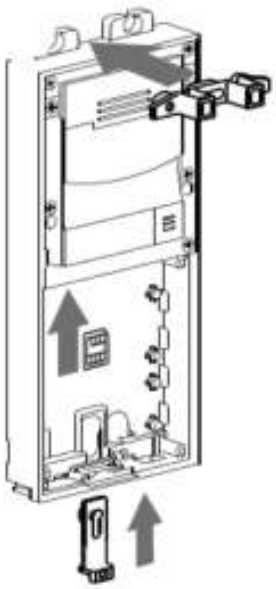


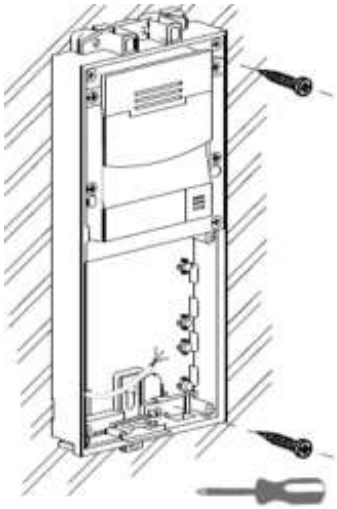


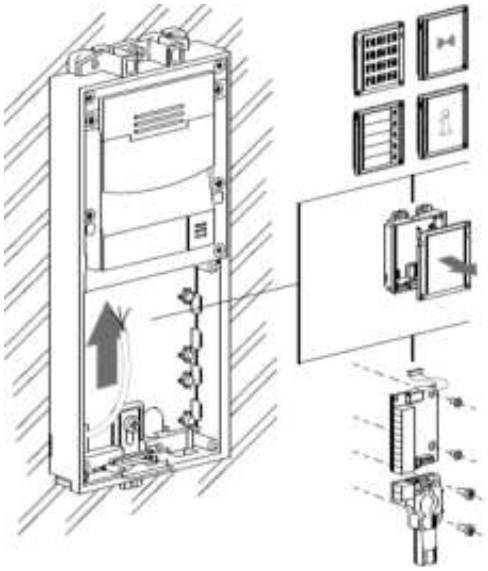
Surface module mounting

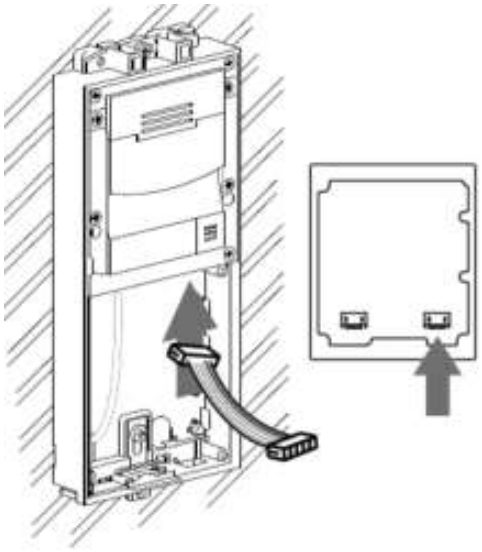


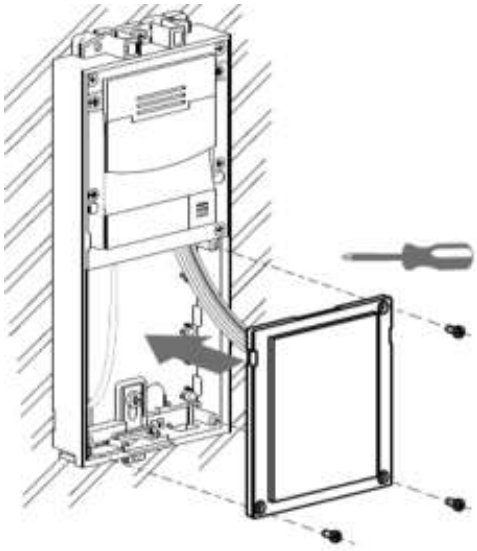


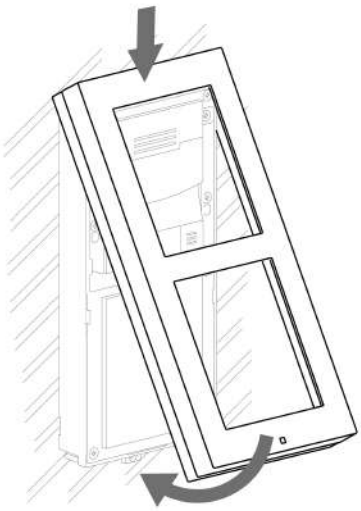


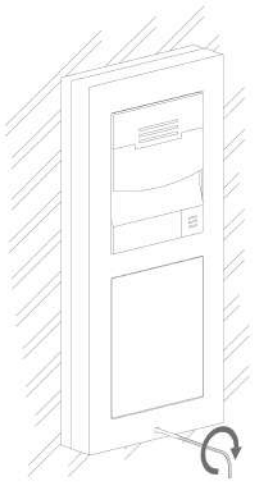


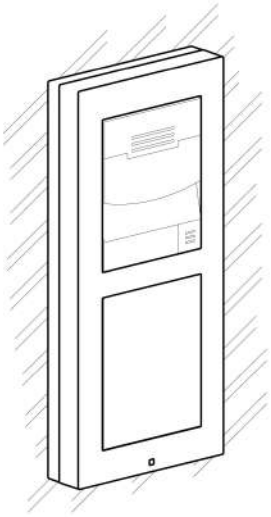






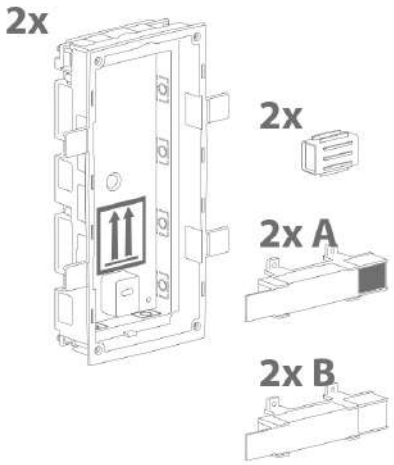


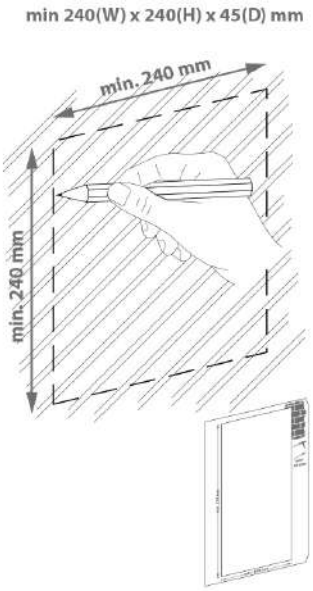


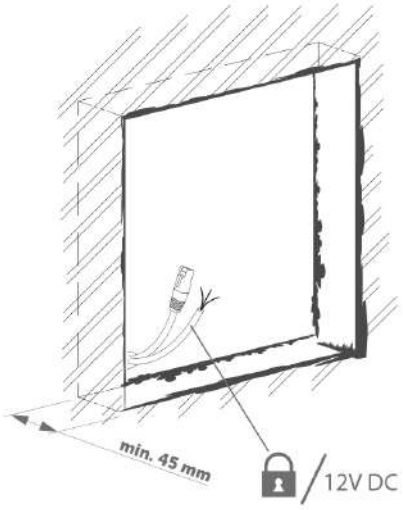


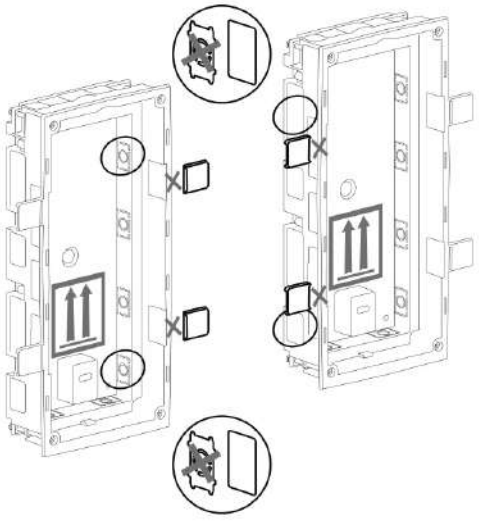
2.2.3 More Two Modules Boxes

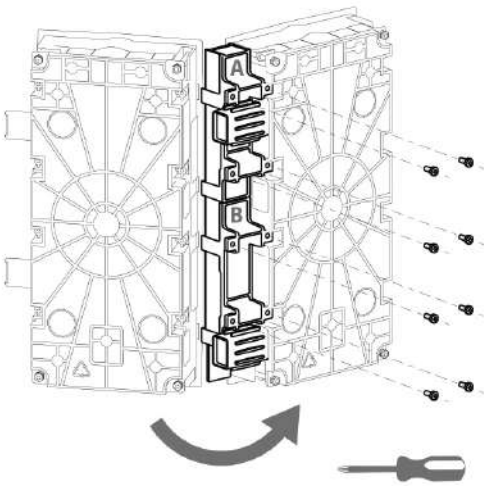
Flush mounting box mounting – classics bricks

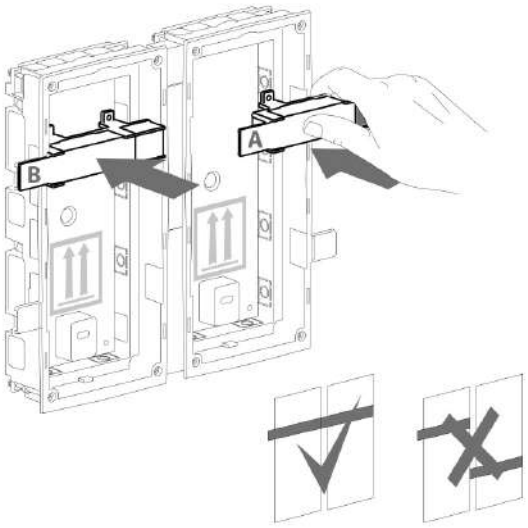


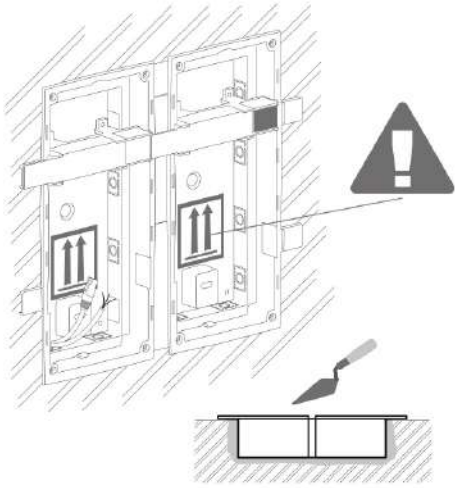



min. 45 mm
12V DC

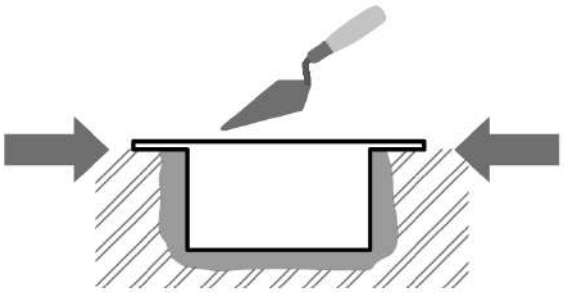



A
B

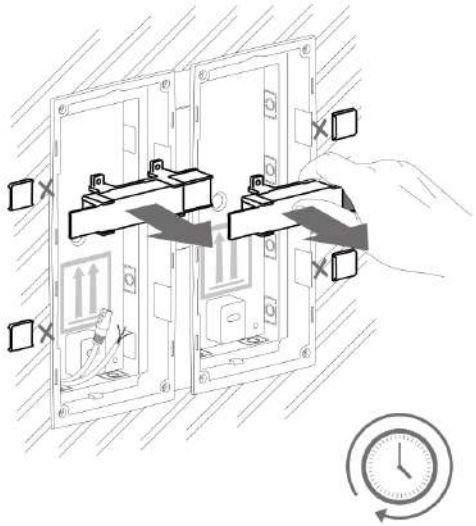

B
A



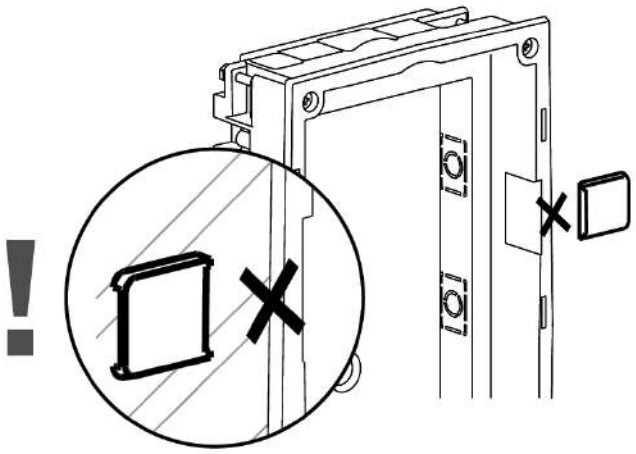
Warning



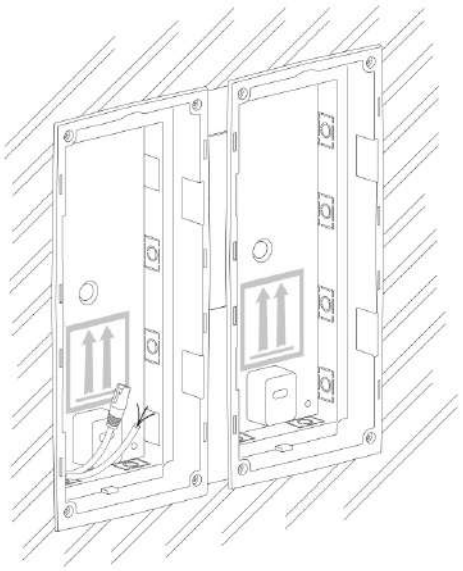
- Make sure that the flush mounting box is slightly above the wall surface not aligning with the wall. A wrong installation may lead to water penetration and subsequent damage of the device. Use the side protrusions to achieve the proper flush mounting.



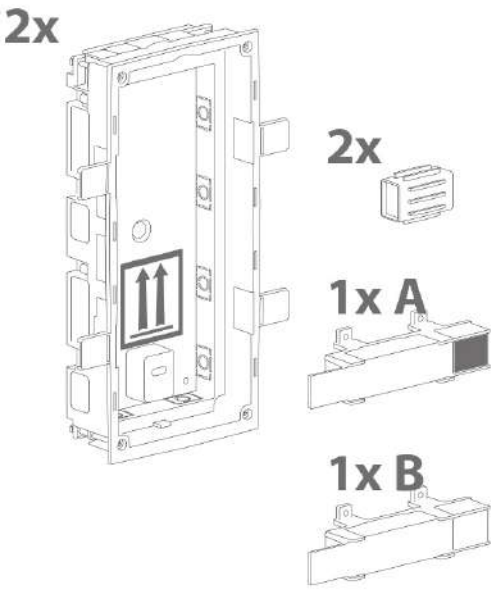
Caution

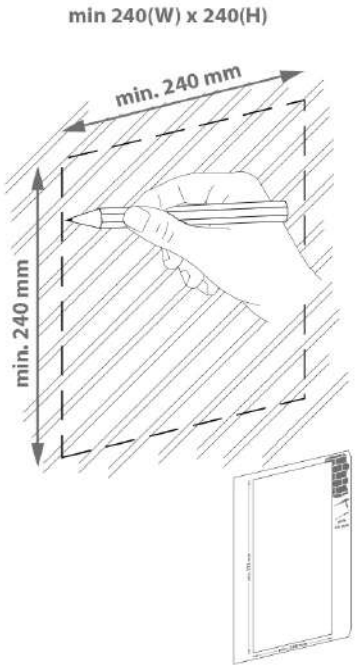


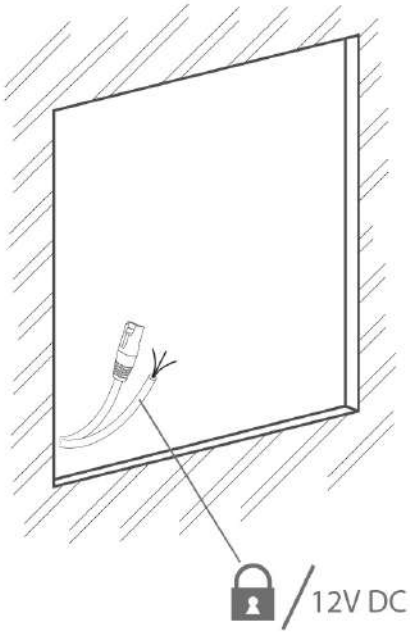
- Break off the side protrusions when the walling material has hardened.

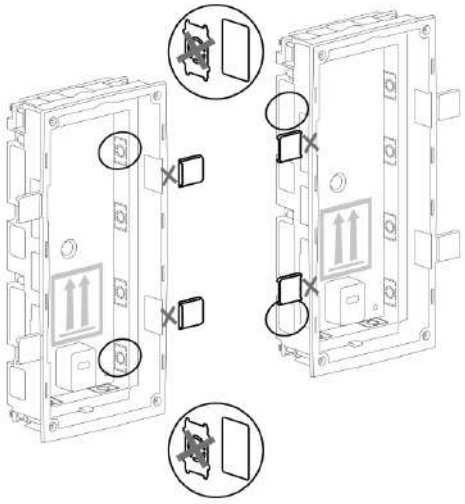


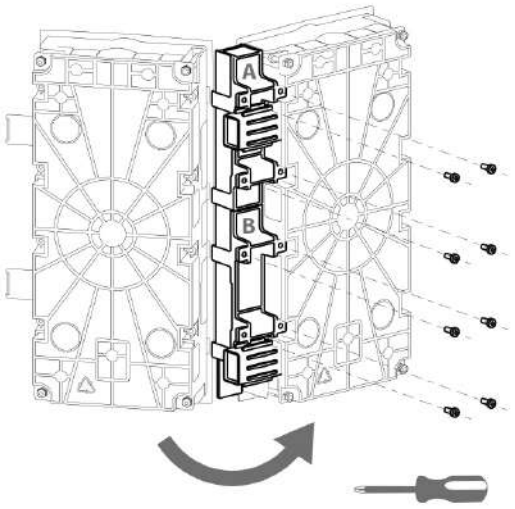
Flush mounting box mounting – plasterboard

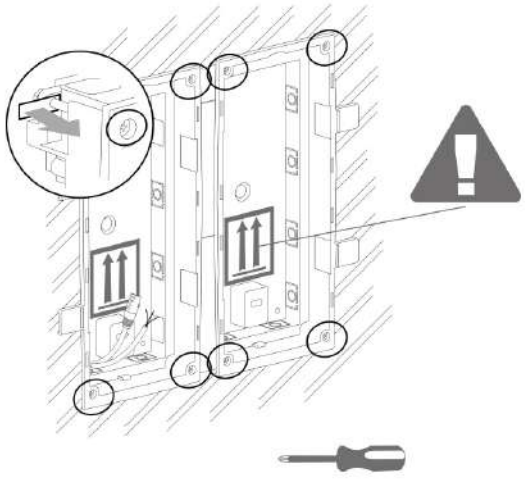


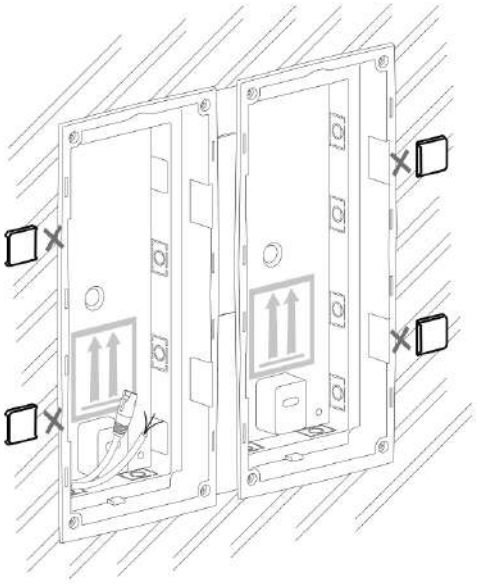


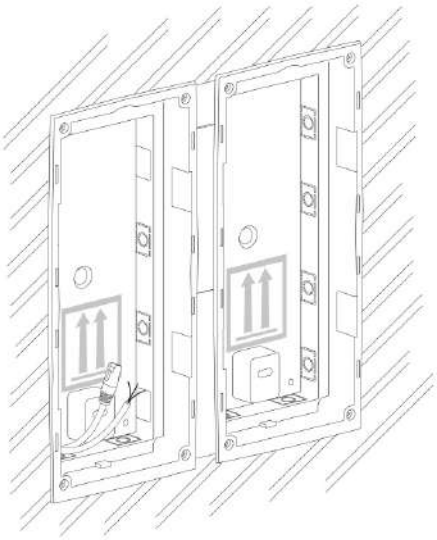

12V DC



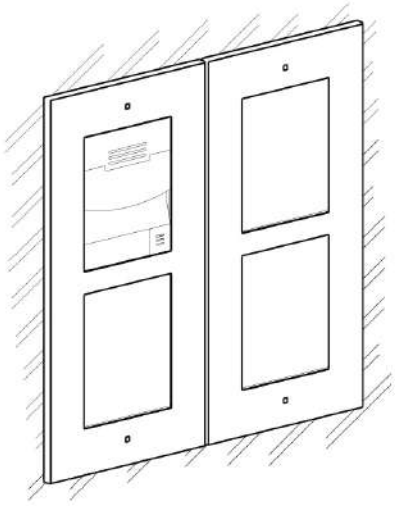

A
B

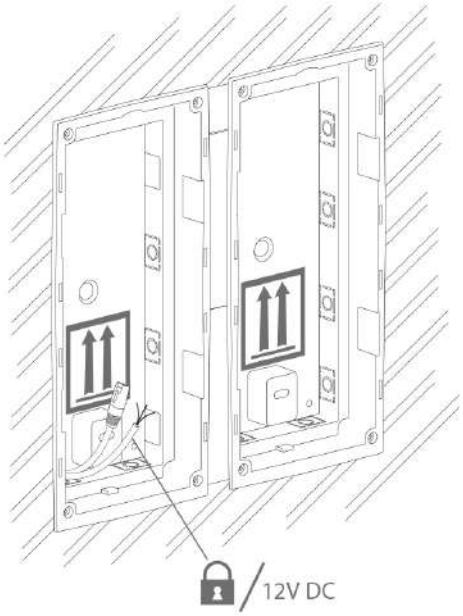


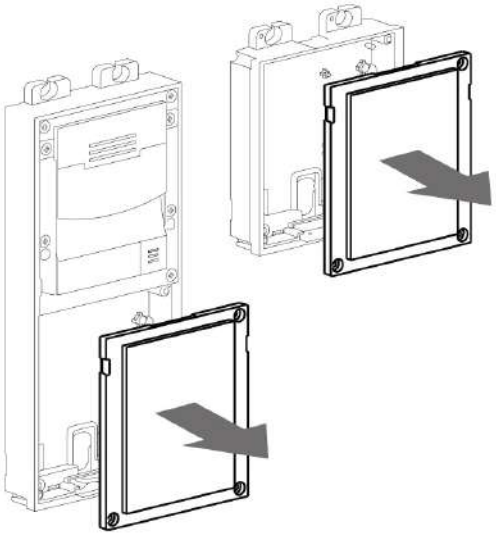


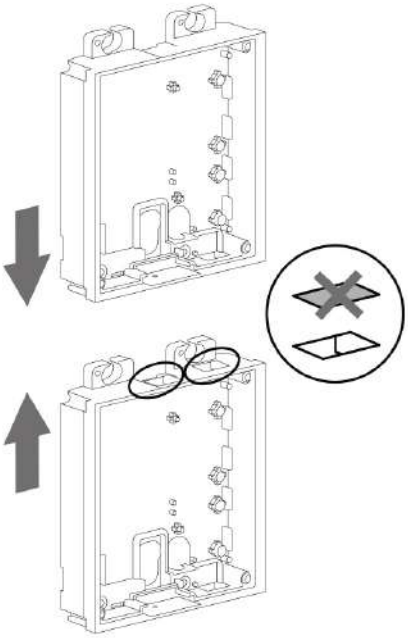


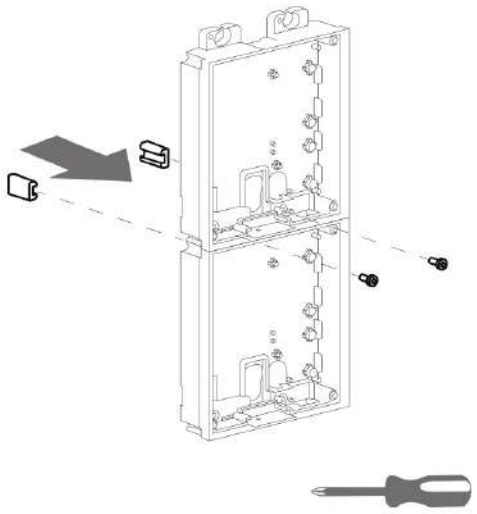
Flush module mounting

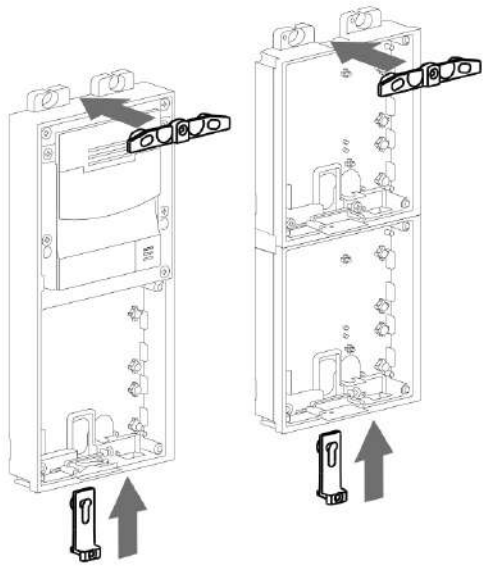


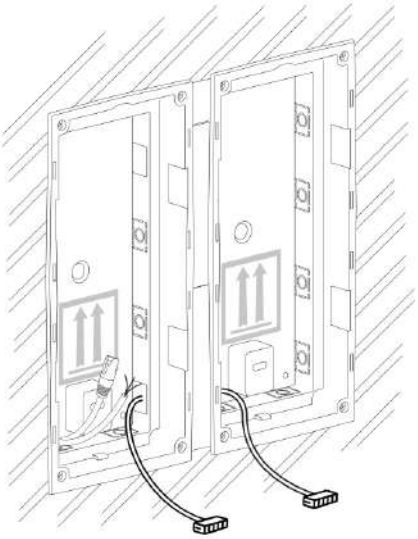


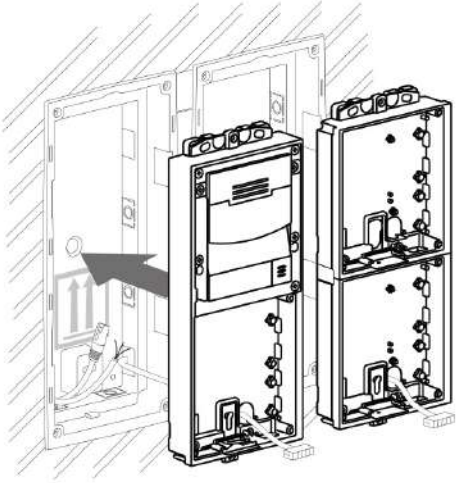


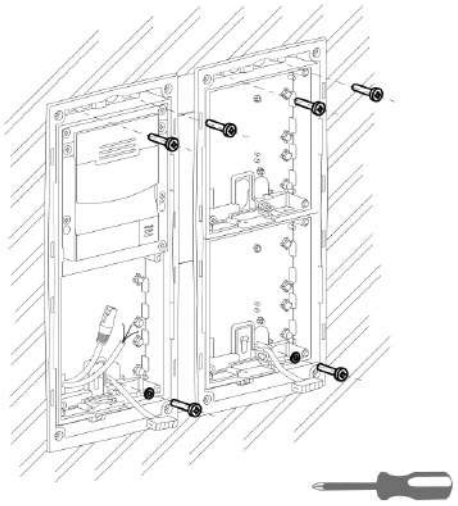


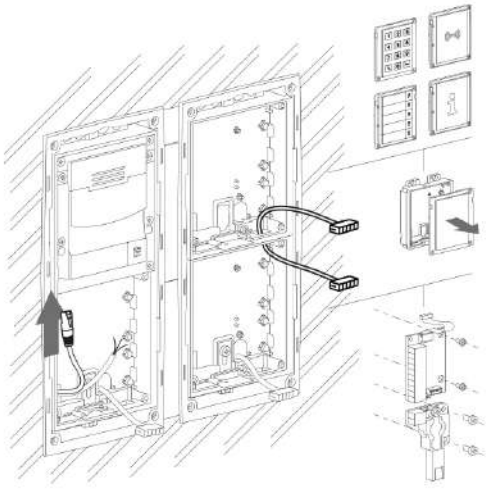


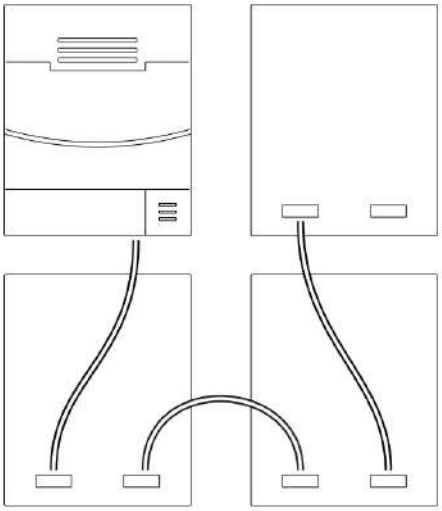


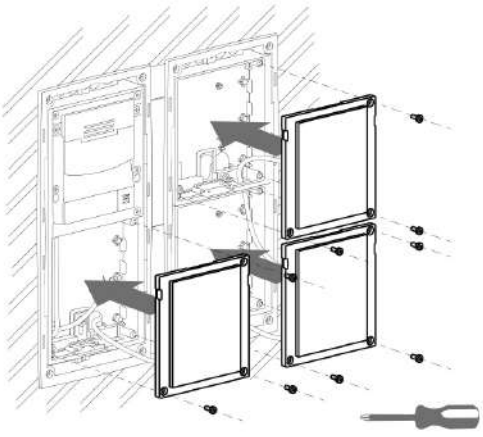


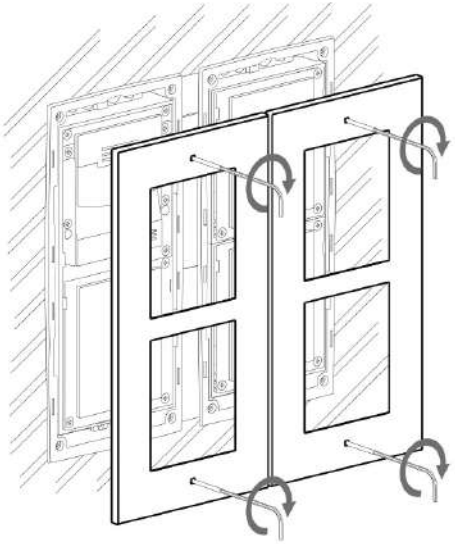




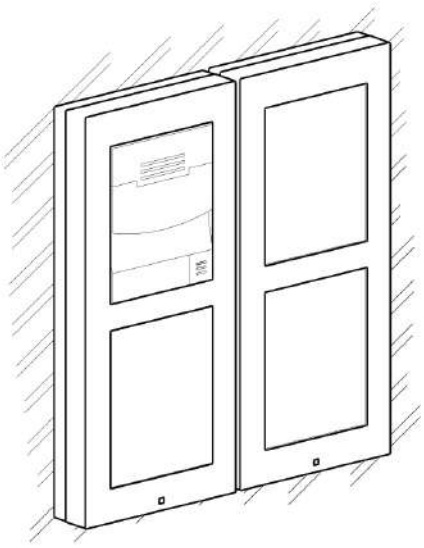


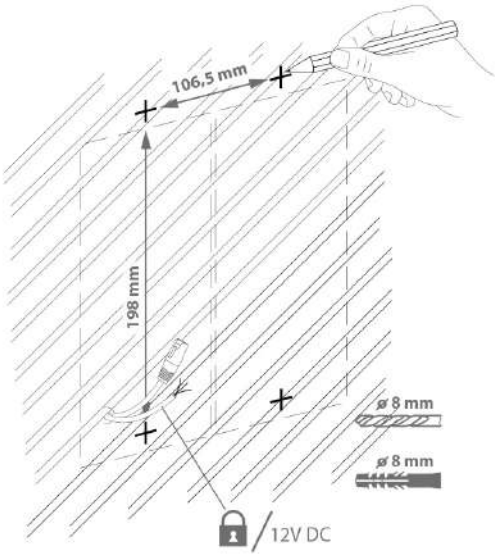


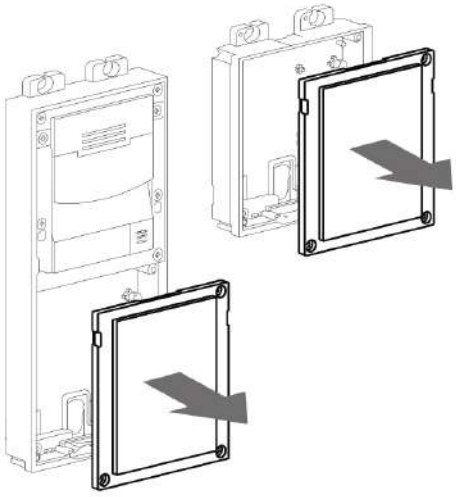


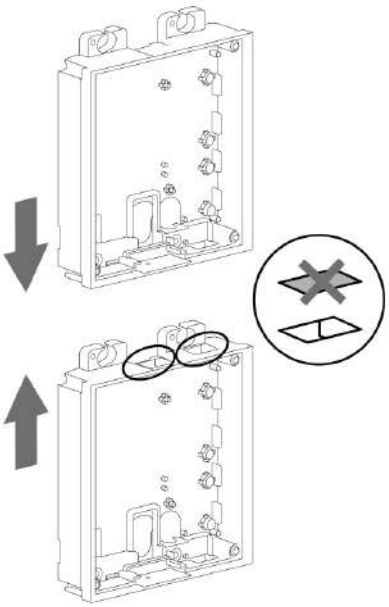


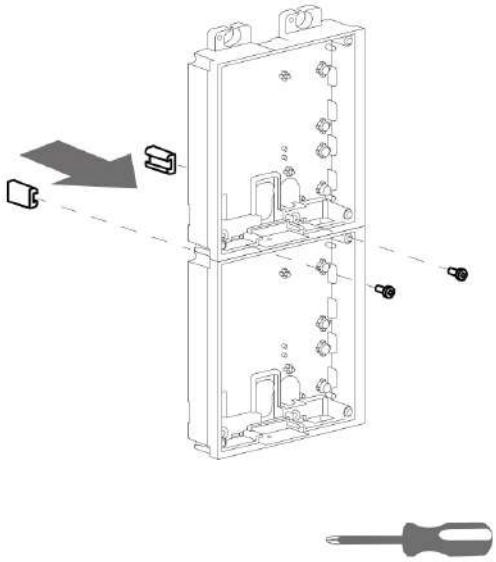
Surface module mounting

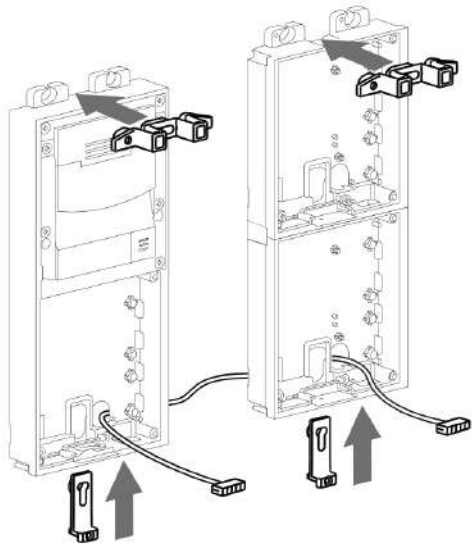


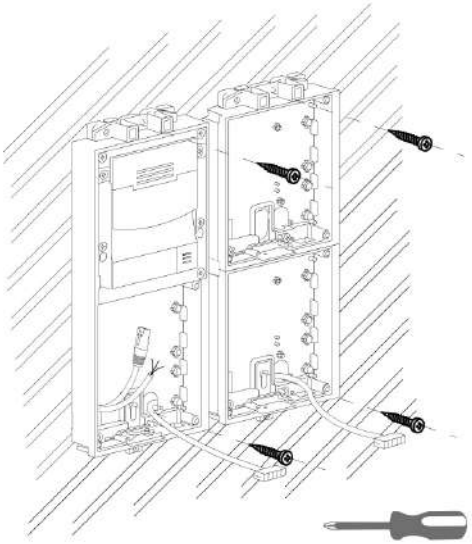


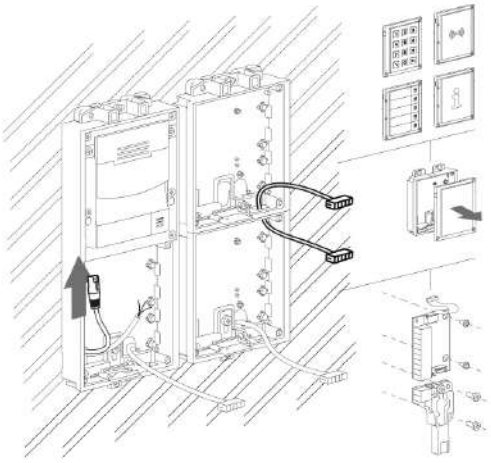


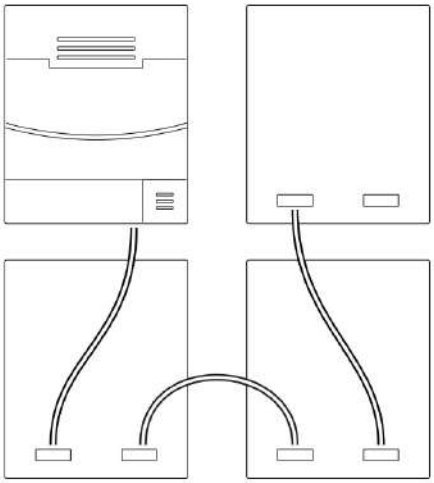


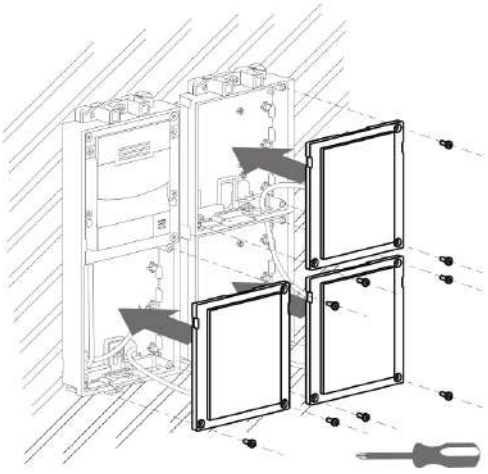


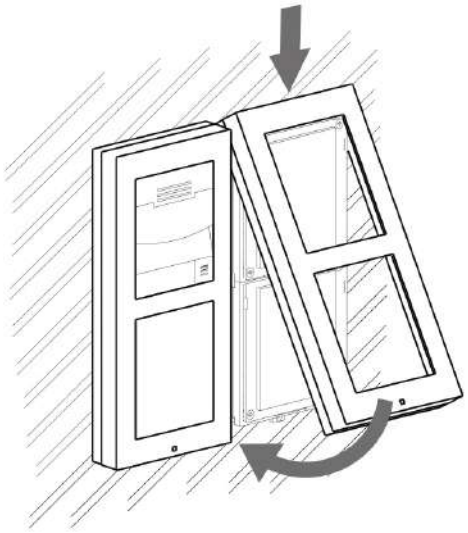


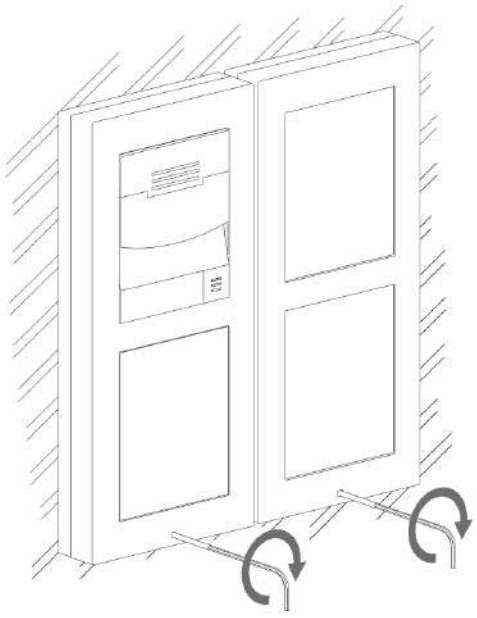






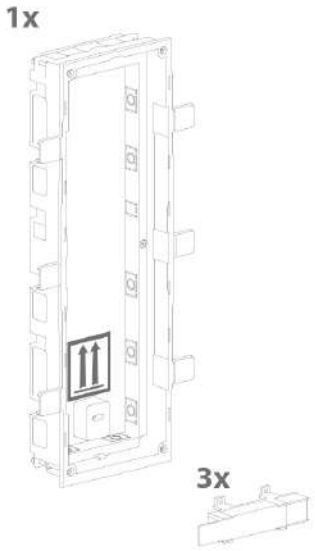


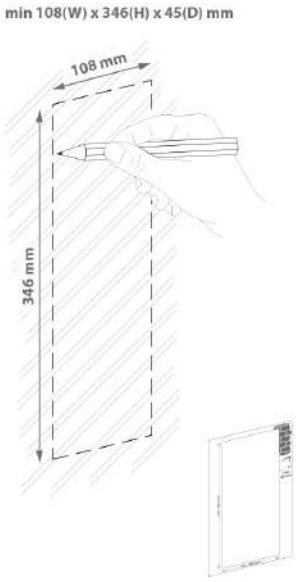


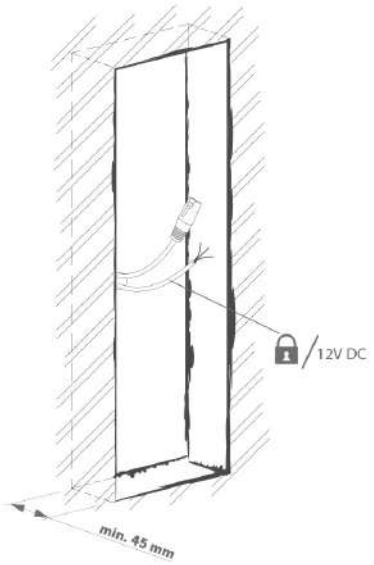


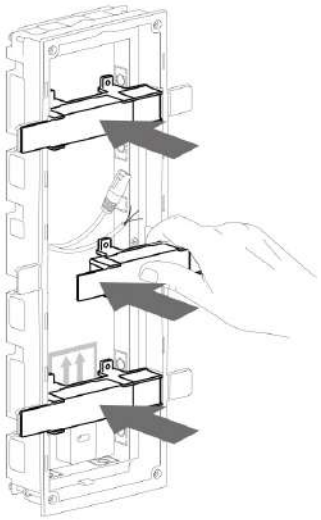
2.2.4 Three Modules Box

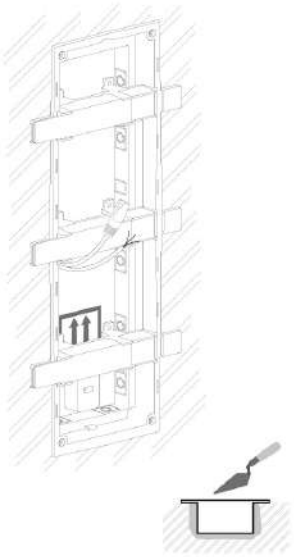
Flush mounting box mounting – classics bricks



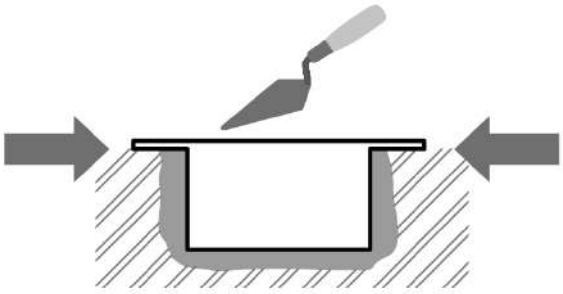



12V DC
min. 45 mm

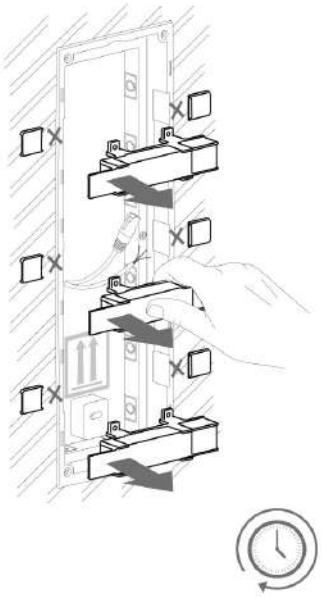




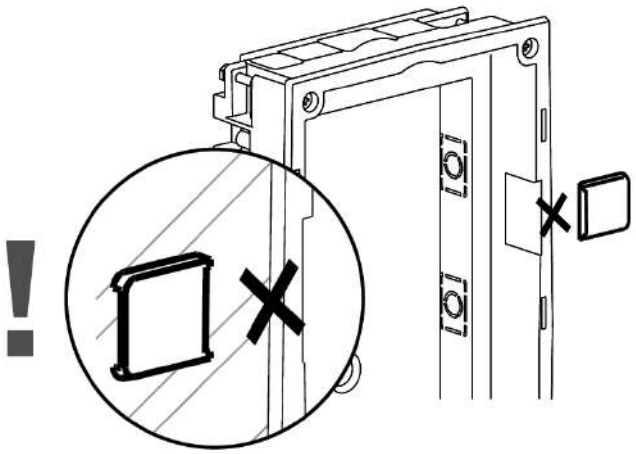
Warning



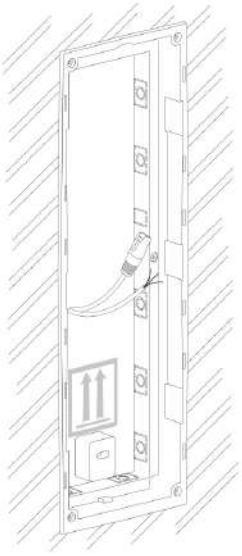
- Make sure that the flush mounting box is slightly above the wall surface not aligning with the wall. A wrong installation may lead to water penetration and subsequent damage of the device. Use the side protrusions to achieve the proper flush mounting.



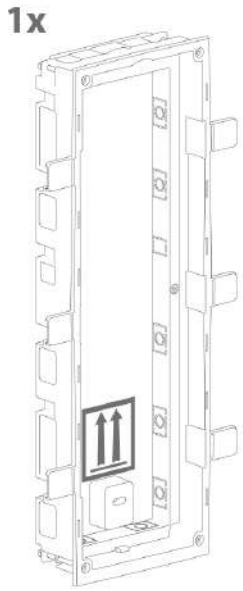
Caution

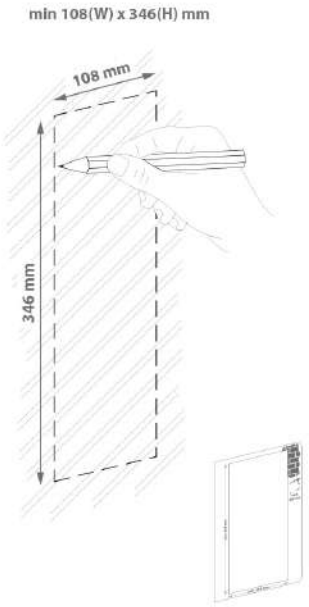


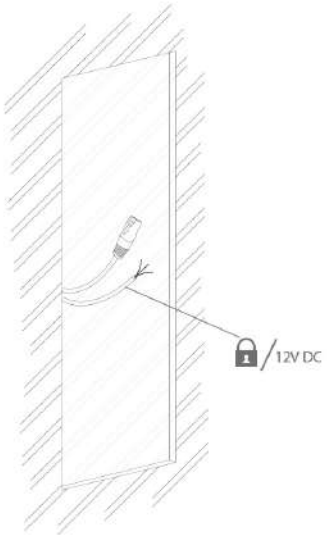
- Break off the side protrusions when the walling material has hardened.

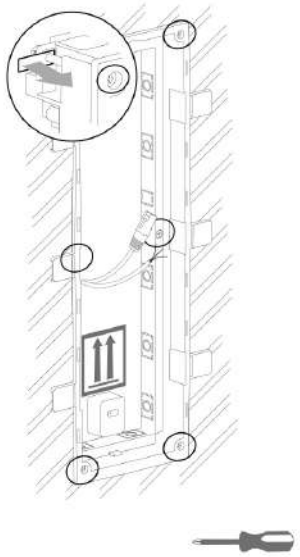


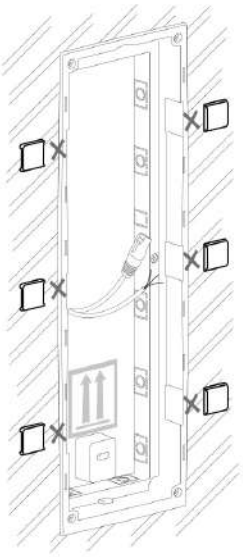
Flush mounting box mounting – plasterboard

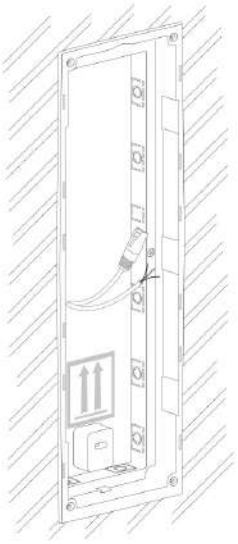




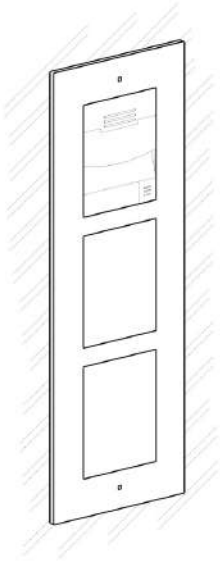

12V DC

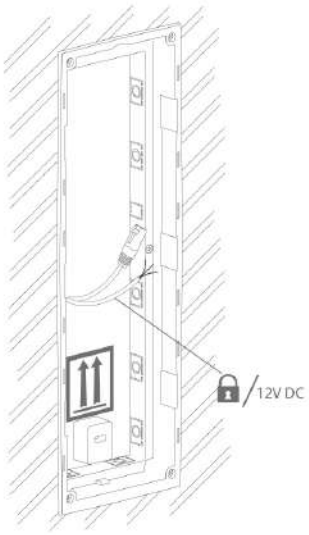


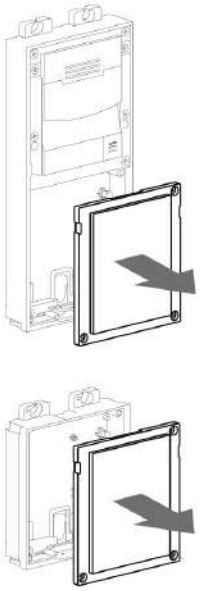


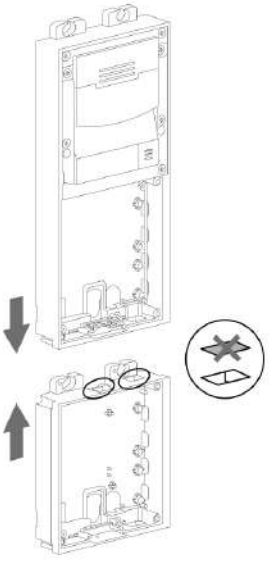


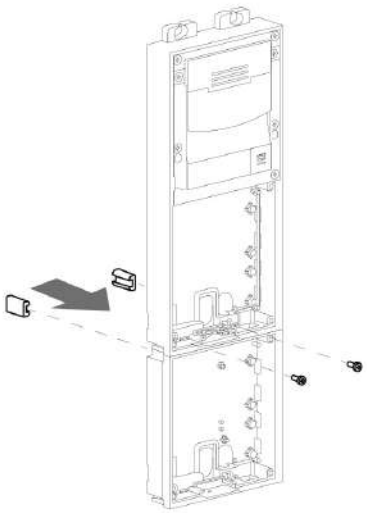
Flush module mounting

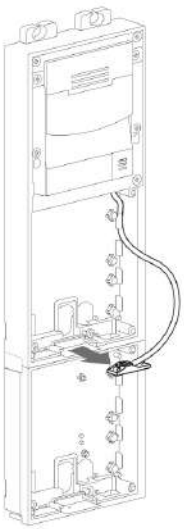


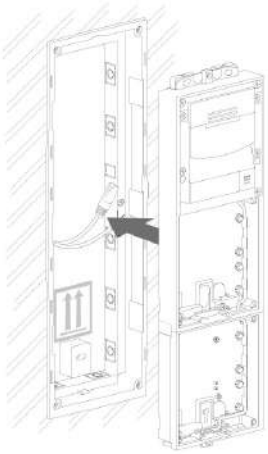


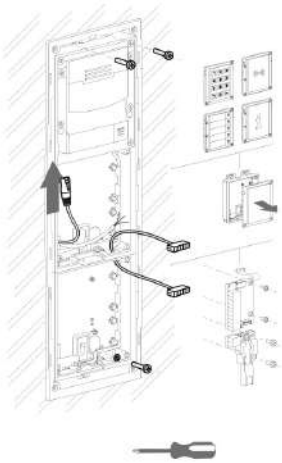


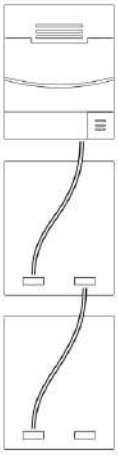


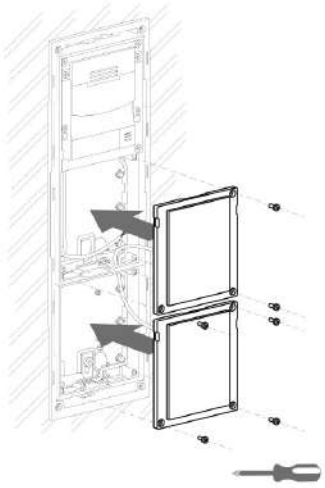




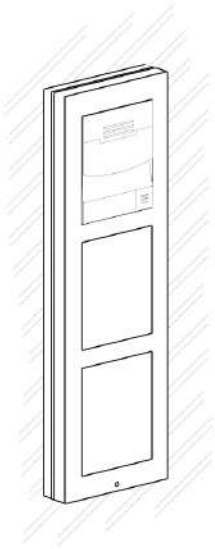


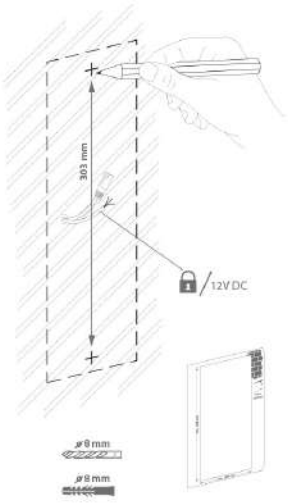


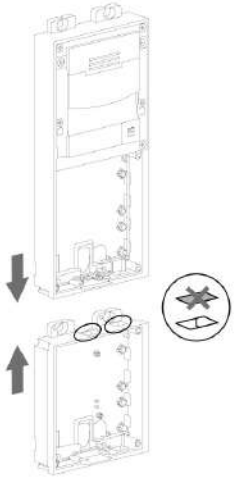


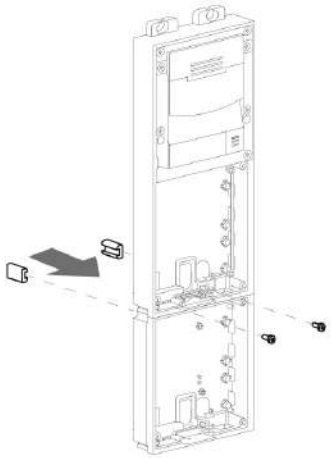


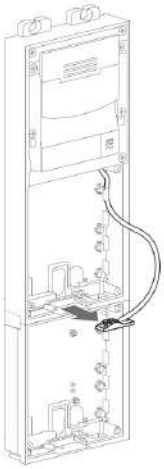
Surface module mounting

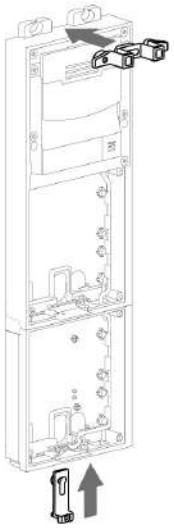


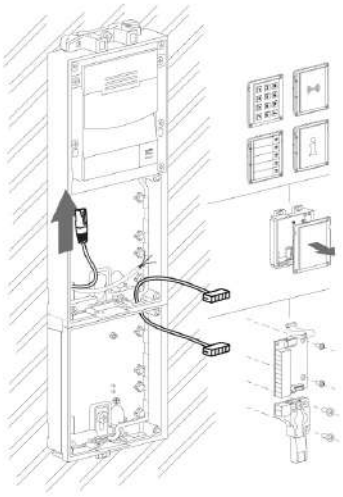


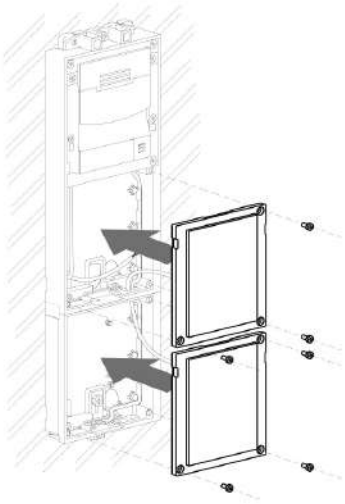


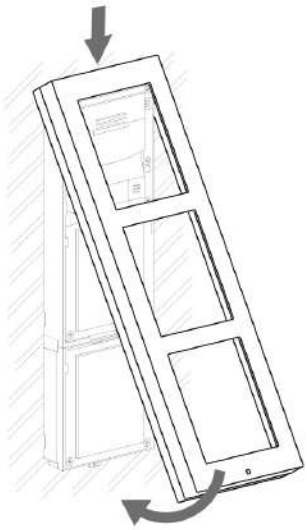


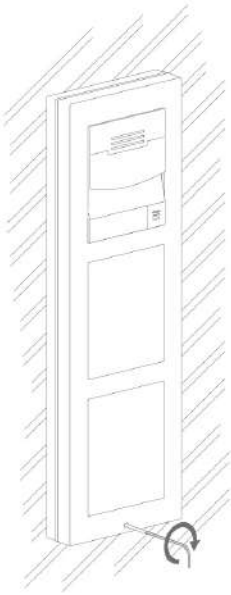






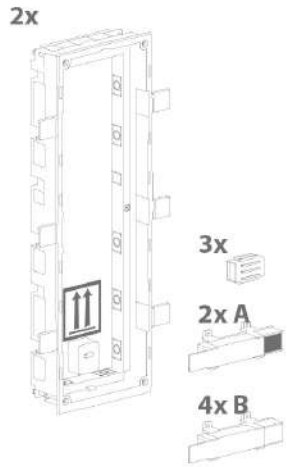


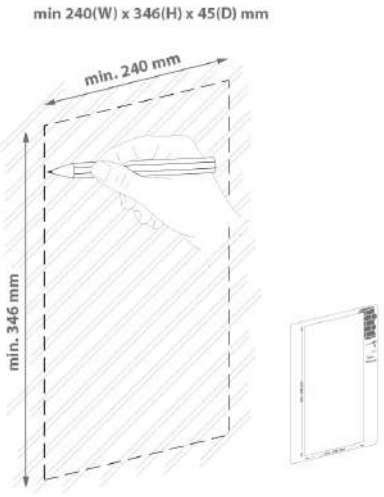


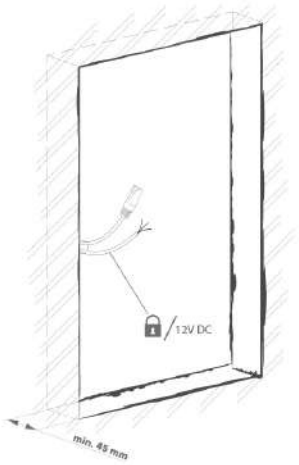


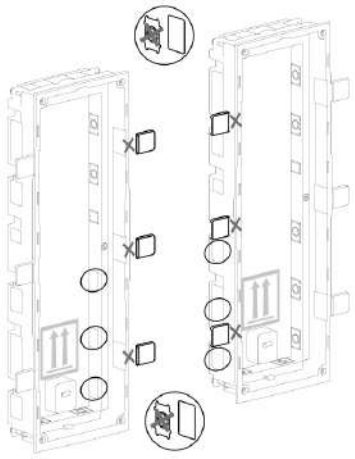
2.2.5 More Than Three Modules Boxes

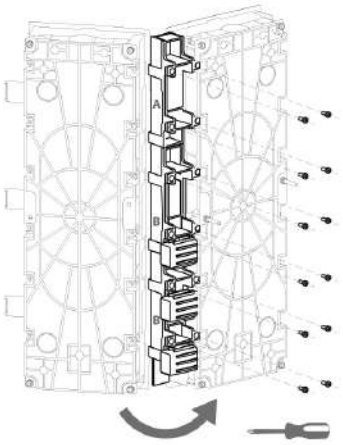
Flush mounting box mounting – classics bricks

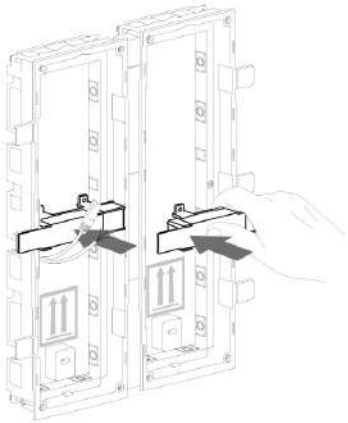


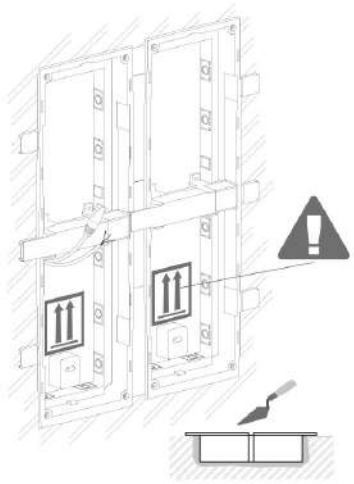



12V DC
min. 45 mm

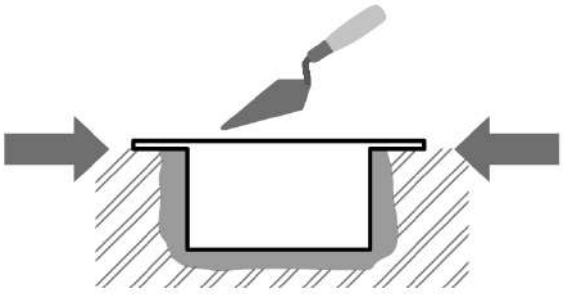




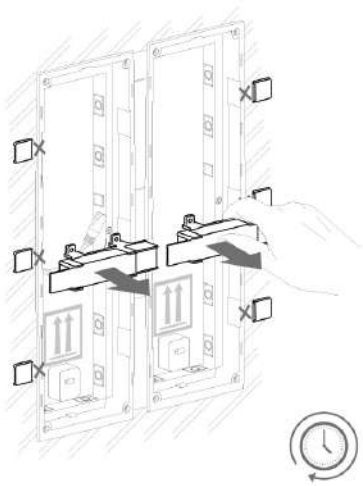


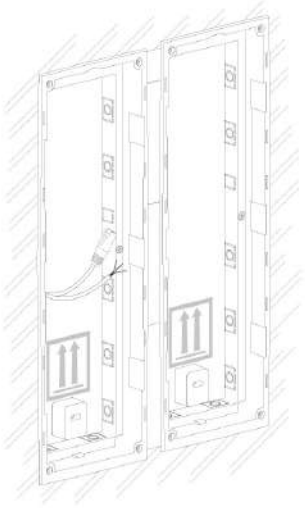


Warning

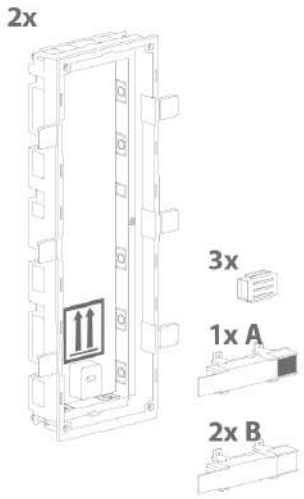


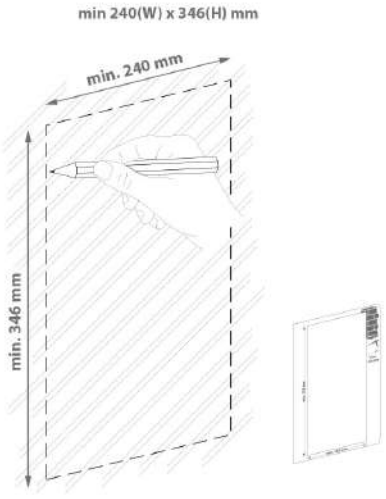
- Make sure that the flush mounting box is slightly above the wall surface not aligning with the wall. A wrong installation may lead to water penetration and subsequent damage of the device. Use the side protrusions to achieve the proper flush mounting.

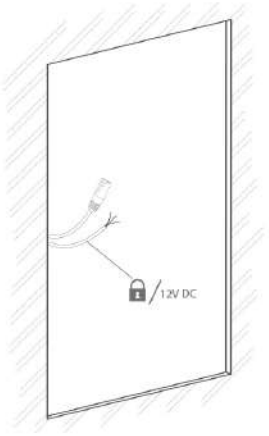


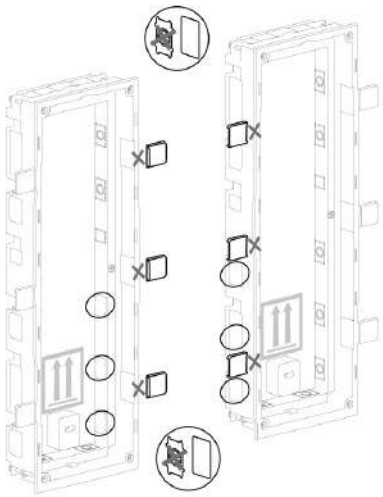


Flush mounting box mounting – plasterboard

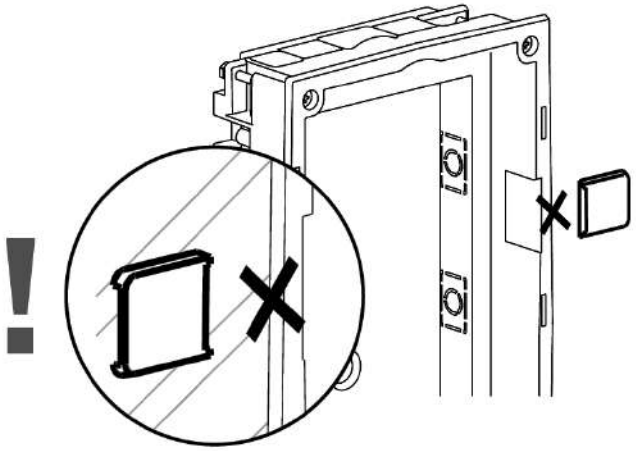




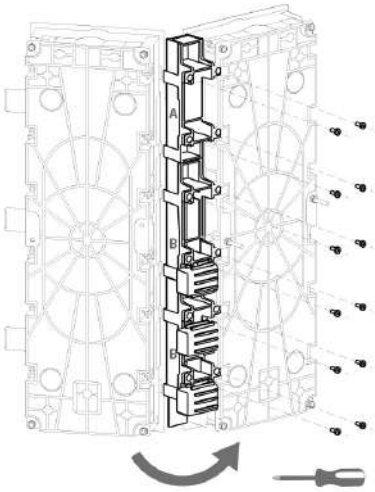

12V DC

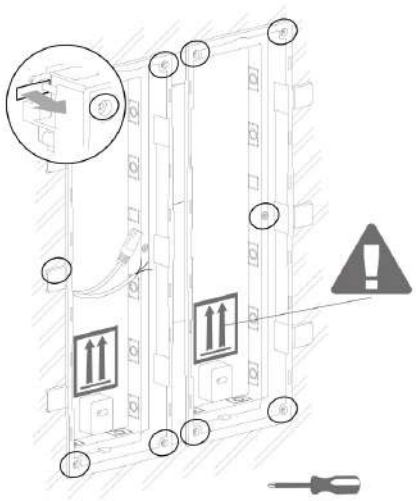


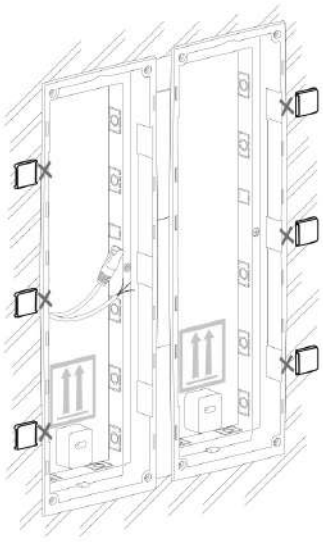
Caution

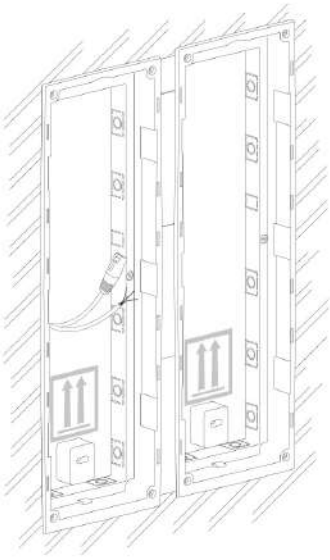


- Break off the side protrusions when the walling material has hardened.

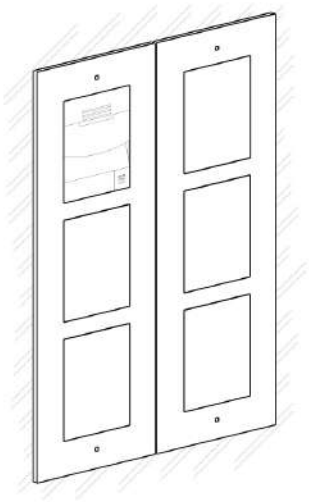


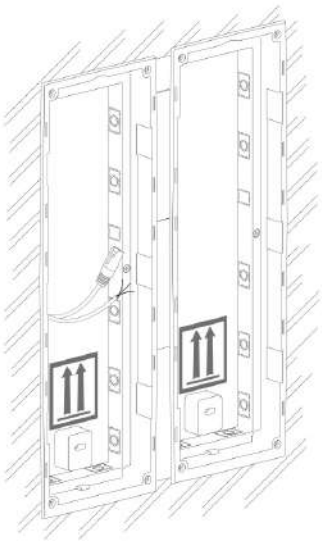


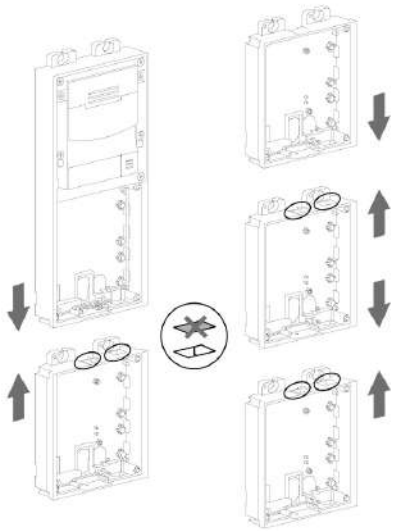


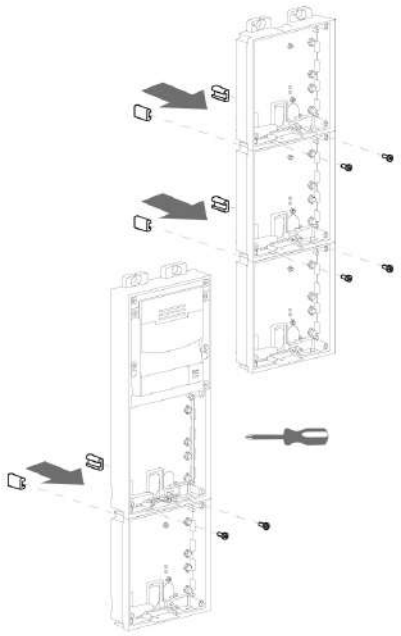


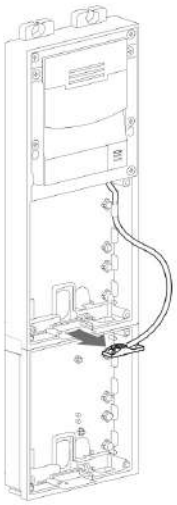
Flush module mounting

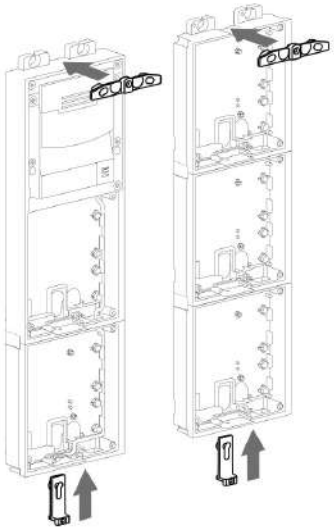


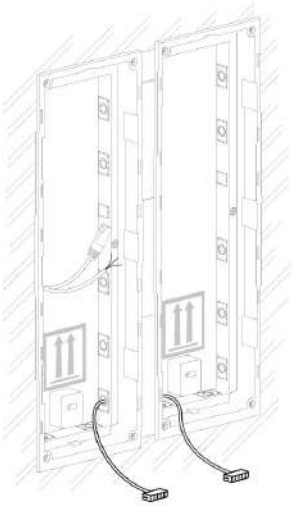


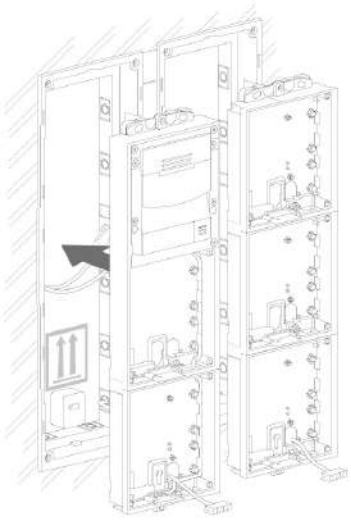


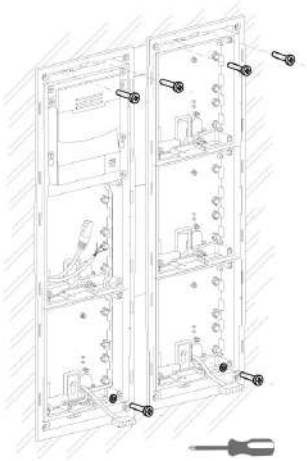


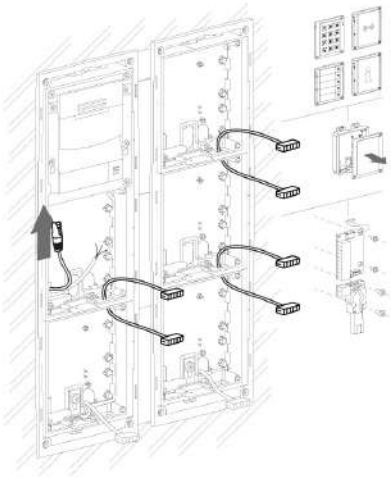


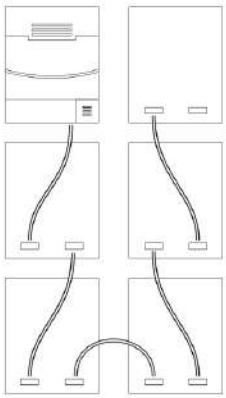


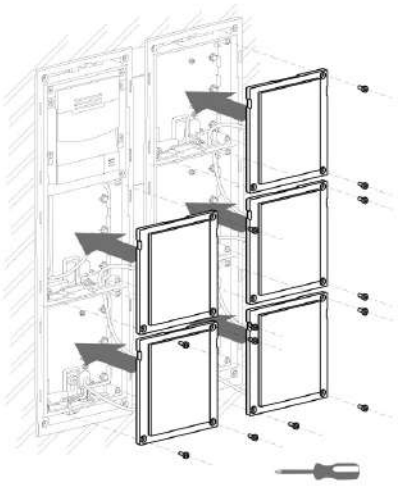




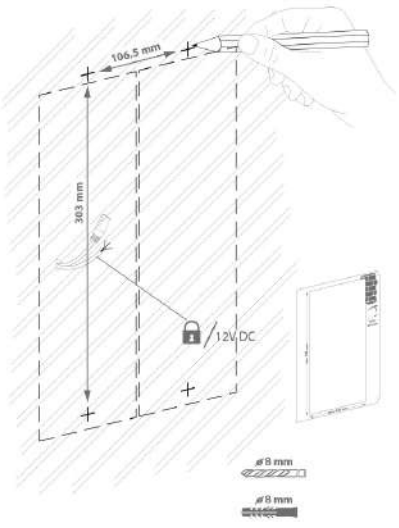


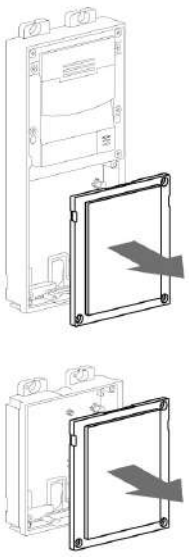


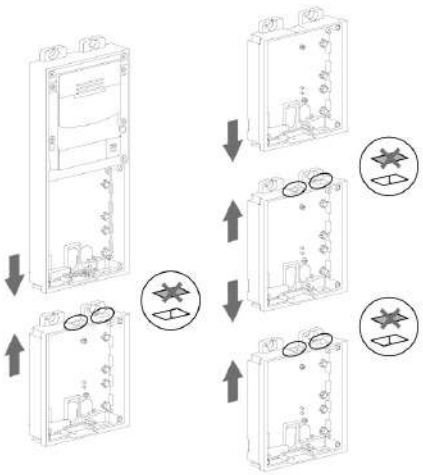


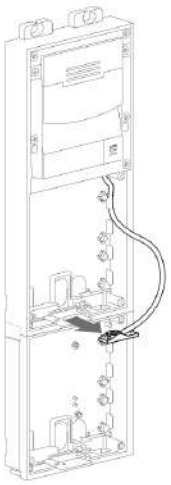


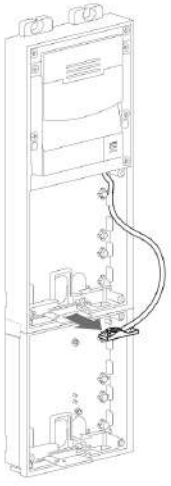
Surface module mounting

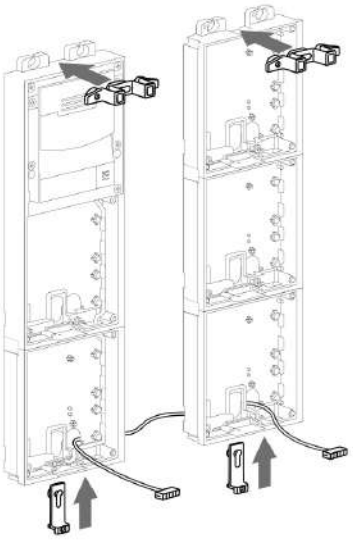


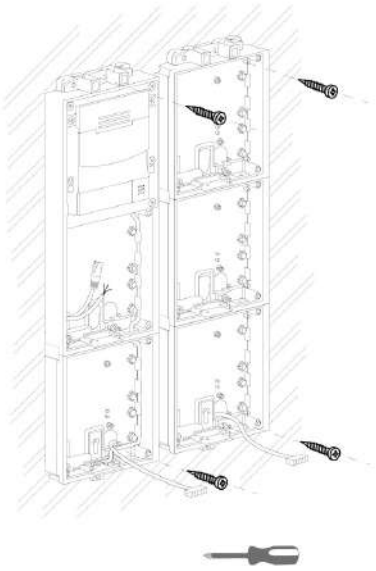


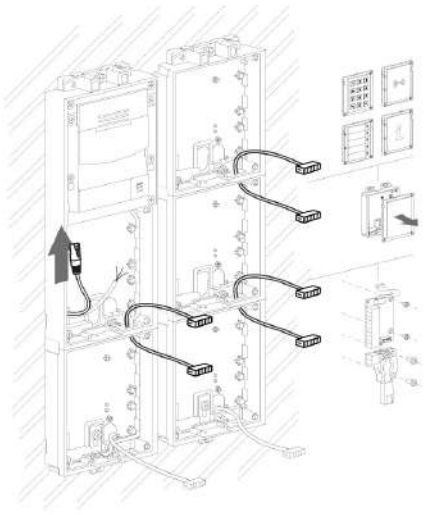


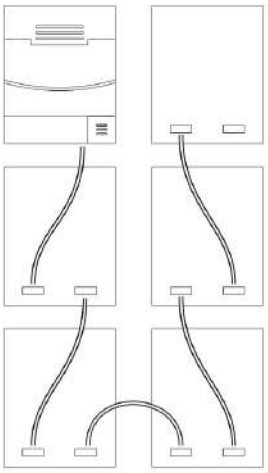


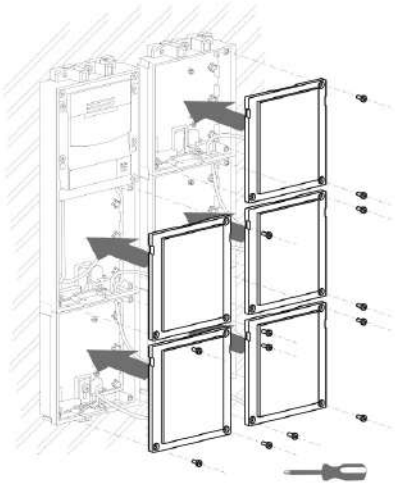


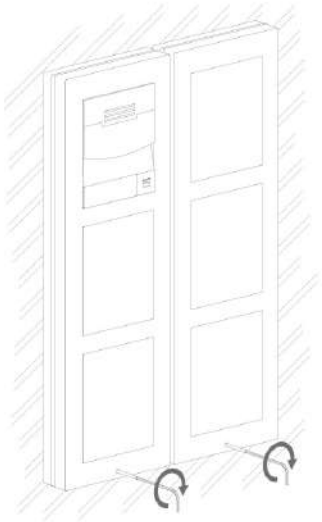




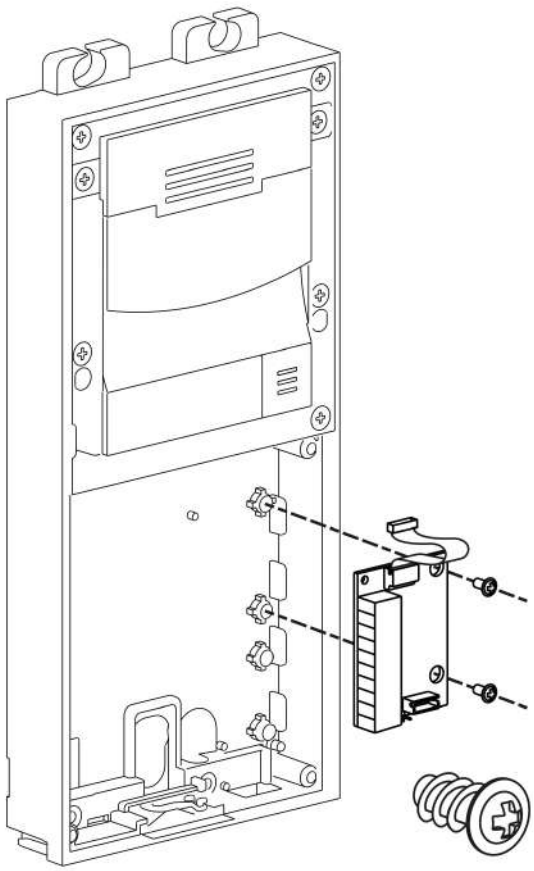


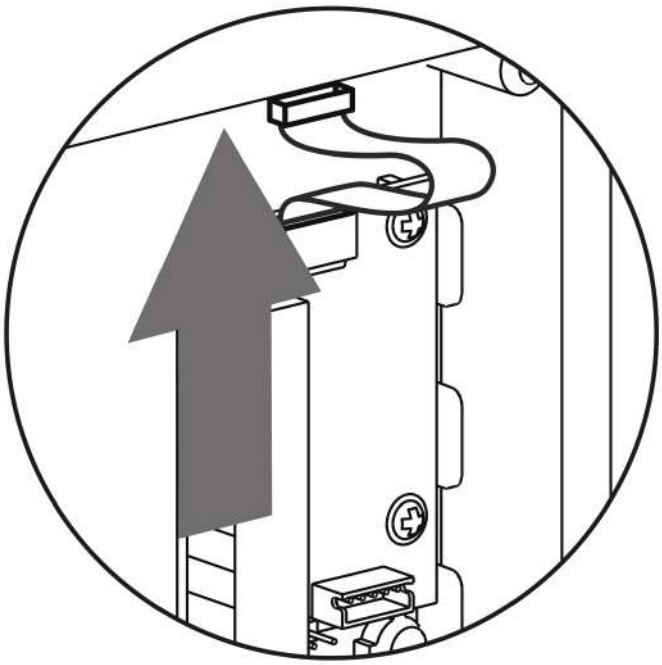


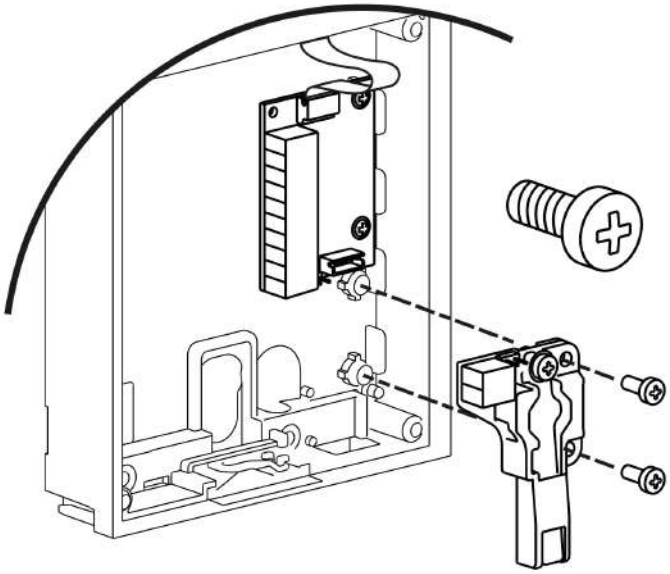


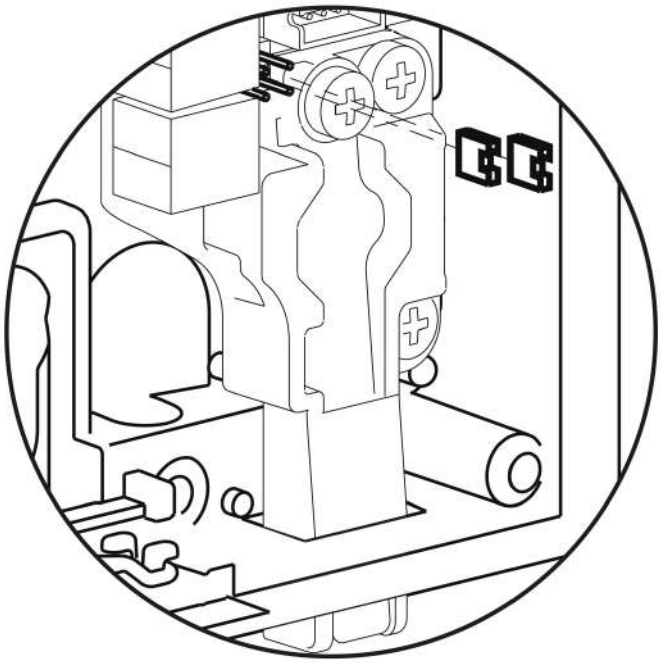


2.2.6 Tamper and I/O Module









2.2.7 Module dimensions

Frames

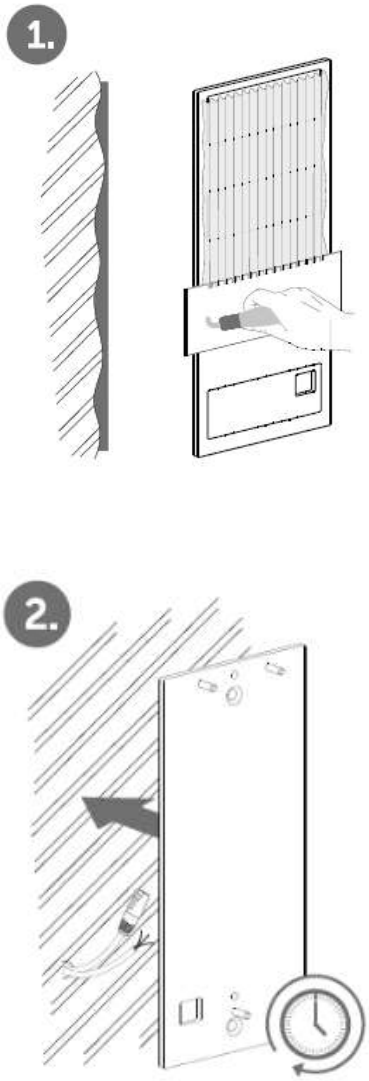
- 9155011 – Flush mounting frame, 1 module
- 9155012 – Flush mounting frame, 2 modules
- 9155013 – Flush mounting frame, 3 modules
- 9155021 – Surface mounting frame, 1 module
- 9155022 – Surface mounting frame, 2 modules
- 9155023 – Surface mounting frame, 3 modules

Backplates

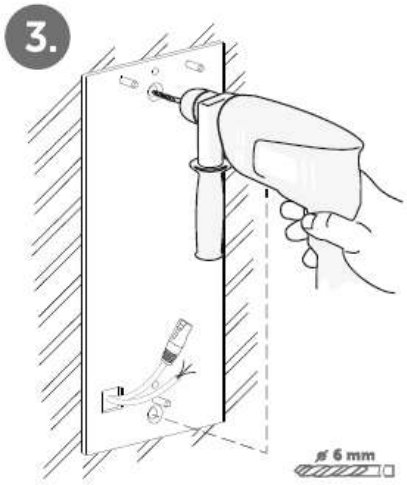
- 9155061 – 1 module
- 9155062 – 2 modules
- 9155063 – 3 modules
- 9155064 – 2x2 modules
- 9155065 – 3x2 modules
- 9155065 – 2x3 modules
- 9155067 – 3x3 modules

2.2.8 Example of Mounting Plate Installation

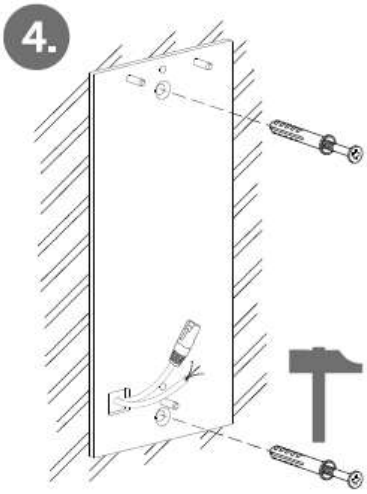
Wall installation



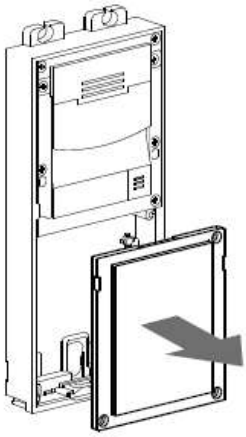
3.



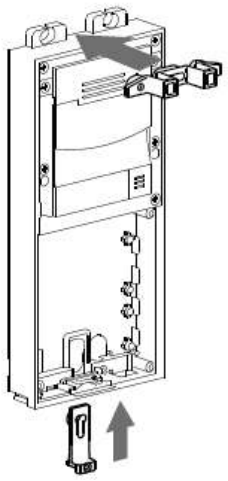
4.



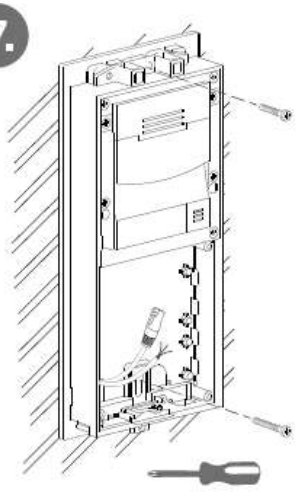
5.

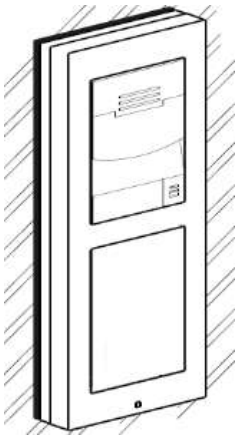


6.

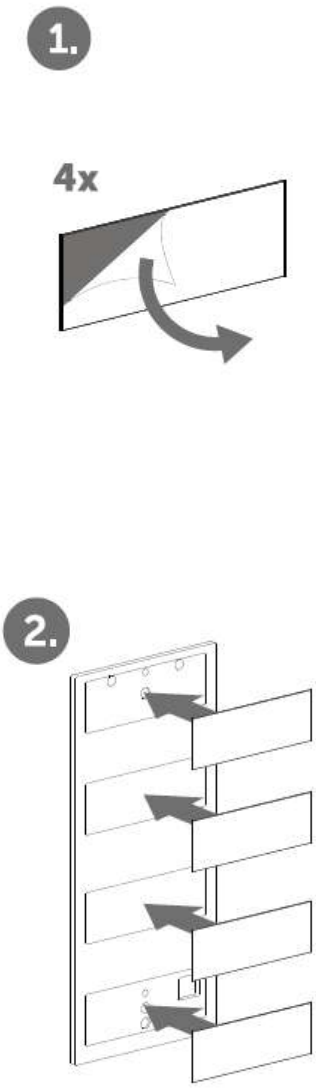


7.

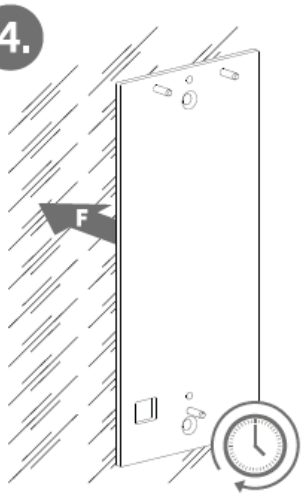




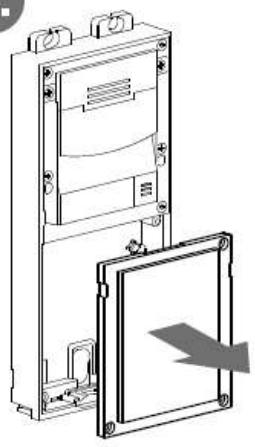
Glass surface installation



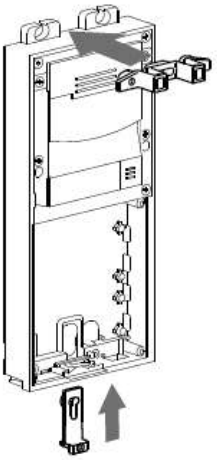
4.



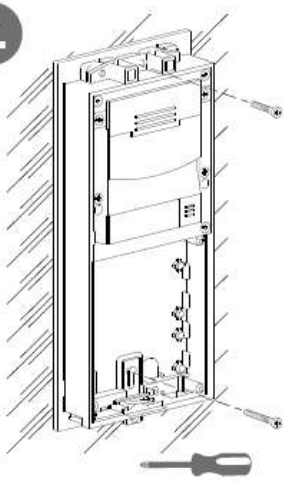
5.



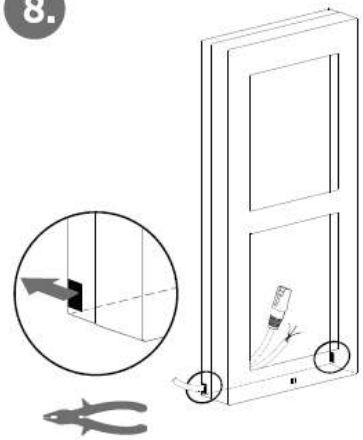
6.

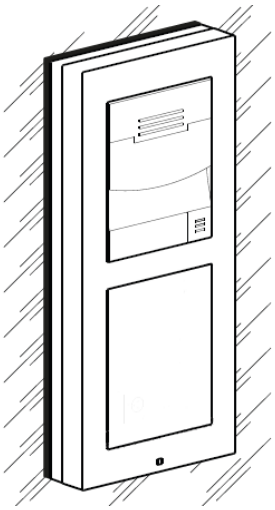


7.



8.





2.3 Electric Installation

This subsection describes how to install the modules, how to connect the 2N® LTE Verso main unit to the power supply and how to connect other elements.

Caution

- The device must be part of the electrical system of the building.

Mounting Preparation

1. Unscrew the second module cover on the main unit base.
2. Use a flat screwdriver to take out the module cover.

Version A – 2-Module Base

1. Place the base on the flush mounting box / predrilled holes with dowels and pull the cables through the bottom holes.
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 – 3-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 main unit base and secure its position with the small side wedges and screws.
4. Remove the microphone from the main 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.

Version C – Additional Columns

1. Unscrew the cover of the additional bases and take it out with a flat screwdriver.
2. Insert the bases into each other as projected and secure their position 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.

Main Unit

LTE Mobile Connection

Insert a PIN-less NanoSIM card (HW version 4 or higher) or MicroSIM (HW version 3 and lower) card with an active data service. The SIM card is not included in the package, so use data services of your preferred LTE provider (the device requires the 4G/LTE technology and cannot be operated in 2G or 3G networks). Connect the antenna provided stuck to the inner blind side. Use an external antenna when mounting another module in the blind position (Part No. 9155048).

SIM card inserting

- How to insert a SIM card:
- HW version 4 and higher
  - Insert a NanoSIM card in the SIM slot and push it gently to fit it into position. Repush the card gently to release and partially slide out the card. Now remove the card.
- HW version 3 and lower
  - Insert a MicroSIM card in the SIM slot. Remove the card in the same way.

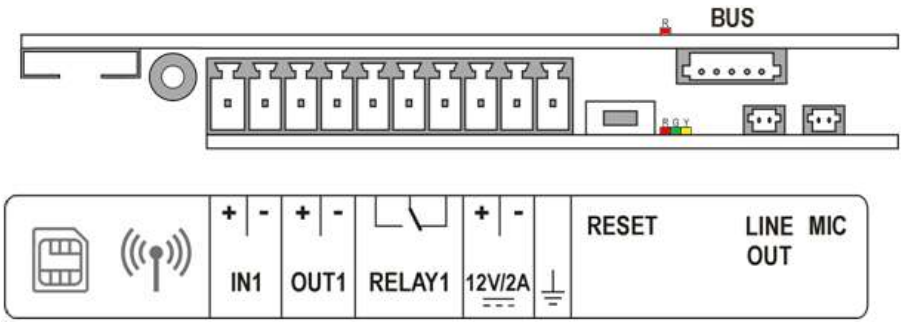
Power Supply Connection

2N® LTE Verso is powered from an external 12 V / 2 A DC source.

External Power Supply

Use a 12 V ±15 % SELV supply dimensioned to the minimum current consumption of 2 A (Part No. 91341481E) to make your system work reliably. This power supply provides 2N® LTE Verso with 24 W for feeding of the main unit and connected modules.

Main Unit Connector Configuration



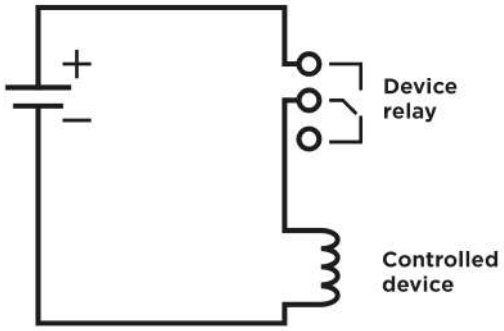
Caution

- We recommend you to use a grounding cable of the cross-section of 1.5 mm2.

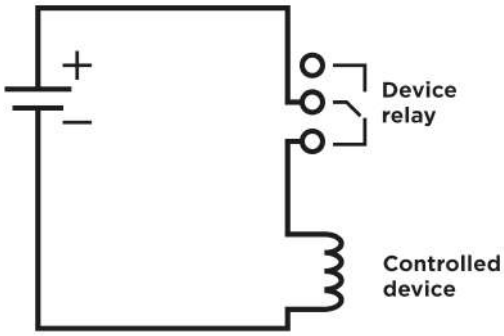
Legend	
MicroSIM	MicroSIM card slot
MMCX antenna connector	LTE mobile network antenna connector
IN1	IN1 terminals for input in passive/ active mode (−30 V to +30 V DC) OFF = open OR U_{IN} > 1.5 V ON = closed contact OR U_{IN} < 1.5 V
OUT1	OUT1 terminals of active input for **2N® Security Relay** or electric lock connection 8 up to 12 V DC depending on power supply (PoE: 10 V; adapter: power supply voltage minus 2 V), max 400 mA
RELAY1	RELAY1 terminals with accessible 30 V / 1 A AC/DC NO/NC contact. Used for connection of non-critical devices only (lights, e.g.).
12V/2A	External 12 V / 2 A DC supply terminals
GND	Grounding terminal
RESET	RESET / FACTORY RESET button
RGY	LED indicators (red/green/yellow)
R	LED indicator on the upper board (red). Flashing indicates that the provider's network is being searched for. Once the network is connected, the LED stops shining.
LINE OUT	LINE OUT connector (1 V_{RMS}). Connector type JST SHR-02V-S.
MIC	MIC connector for microphone connection
BUS	**2N® IP/LTE Verso** bus connector

Tip

- Output wiring diagram for Relay terminals



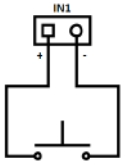
Wiring diagram for the controlled device's electric circuit closing



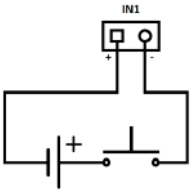
Wiring diagram for the controlled device's electric circuit opening

Tip

Wiring diagram of IN1 connector in active mode



Wiring diagram of IN1 connector in passive mode



LTE Connection Verification

Having connected the power supply, make sure that 2N® LTE Verso has been connected to the LTE data network successfully. A red LED (R) located to the left of the BUS connector on the upper board provides basic diagnostics: flashing means connecting, if the LED goes off, the device is connected to the data network. If it is illuminated for 5 seconds, there is a SIM card error (SIM not inserted, PIN request enable or no active data service). When this 5s timeout is over, another connection attempt is made and the LED starts flashing again, i.e. the LED does not shine permanently if there is a problem. If it keeps flashing only, the LTE signal is insufficient. In this case, check the area LTE signal coverage and antenna connection. If the LTE signal is low, use an appropriately placed external antenna (optional accessory, Part No. 9155048). Caution – do not stick the external antenna to a metal surface!

You can also use the diagnostic SMS commands described in 3.1 Configuration for troubleshooting.

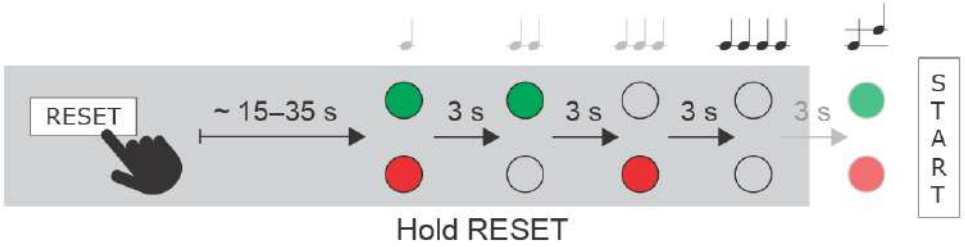
Reset Button

Located among the main unit connectors, the Reset button helps you reset the factory default values and restart the device.

Factory Reset

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

- Press and hold the RESET button.
- Wait until the red and green LEDs go on simultaneously and the acoustic signal can be heard (approx. 15–35 s).
- Wait until the red LED goes off and the acoustic signal can be heard (approx. for another 3 s).
- Wait until the green LED goes off and the red LED goes on again and the acoustic signal can be heard (approx. for another 3 s).
- Wait until the red LED goes off and the acoustic signal can be heard (approx. for another 3 s).
- Release the RESET button.



Note

- The delay after pressing RESET till the first light and sound signalling is set to 15–35 s depending on the 2N IP intercom/answering unit model used.

Caution

- In case of resetting the factory default settings on a device with a version of firmware 2.18 or higher it is necessary to reprogram the **2N® Security Relay** using the instructions from section **2.4**.

Device Restart

Press the RESET button shortly (< 1 s) to restart the system without changing configuration.

Available Switches

Location	Name	Description
Main Unit	Relay 1	**Passive switch:** NO/NC contact, up to 30 V / 1 A AC/DC. Used for connection of non-critical devices only (lights, e.g.).
	Output 1	**Active switch output:** 8 up to 12 V DC depending on power supply (power supply voltage minus 2 V), max 400 mA
I/O Module* (Part No. 9155034)	ext. relay1	**Passive relay switch:** NO and NC contacts, up to 30 V / 1 A AC/DC. Used for connection of non-critical devices only (lights, e.g.).
	ext. relay2	**Passive relay switch:** NO and NC contacts, up to 30 V / 1 A AC/DC. Used for connection of non-critical devices only (lights, e.g.).

More modules marked by * can be used.

Security

- The 12V output is used for lock connection. If, however, the unit (2N IP Intercom, 2N Access Unit) is installed where unauthorized tampering may happen, we strongly recommend that the 2N® Security Relay (Part No. 9159010) be used for enhanced installation security.

Warning

When you connect a device containing a coil, such as a relay or an electromagnetic lock, it is necessary to protect the intercom against voltage peak while switching off the induction load. For this way of protection we recommend a diode 1 A / 1000 V (e.g., 1N4007, 1N5407, 1N5408) connected antiparallel to the device.

2.3.1 Overvoltage Protection

Recommendations for Additional Overvoltage Protection Installation

If running:

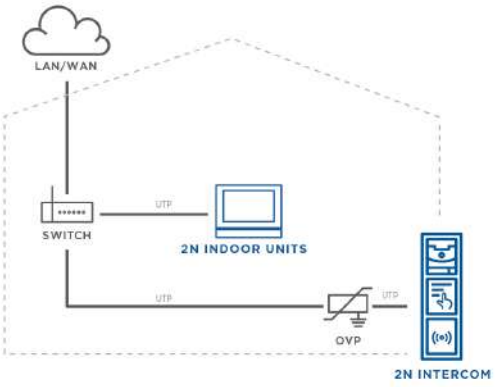
a) outside a building,

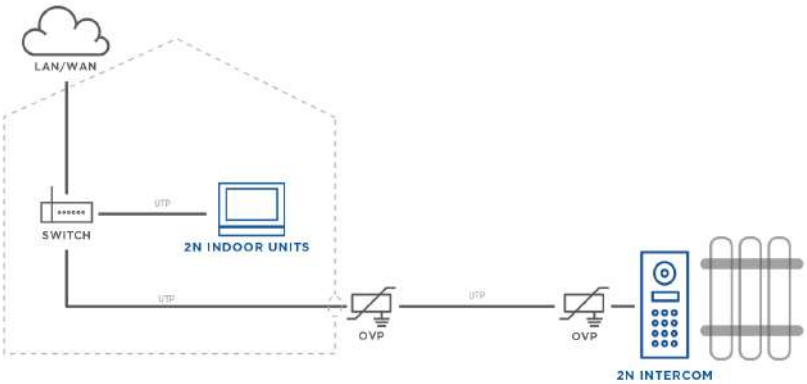
b) on/in an outer wall or roof,

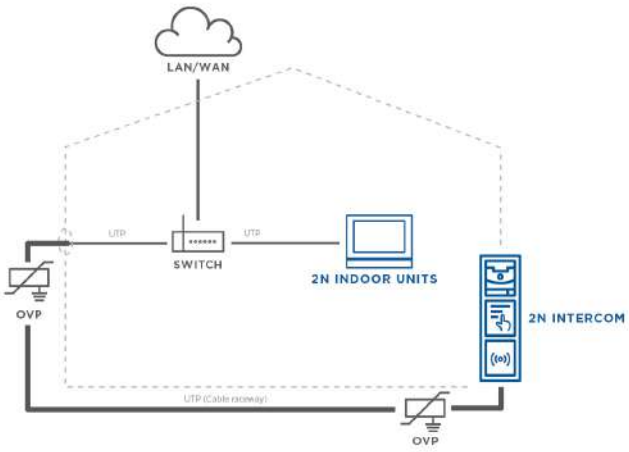
the 2N device wiring may be exposed to atmospheric effects resulting in overvoltage that may subsequently damage any devices installed outside the building, on its outer wall or roof. Overvoltage may damage devices connected to these wires and installed inside the building as well. Therefore, we recommend that additional surge protectors be installed on all the wires leading outside buildings, on outer walls or roofs, namely:

a) as close as possible to the device installed outside the building or on its outer wall /roof,

b) as close as possible to the point where the wires leave the building.







OVP = overvoltage protection

2.4 Extending Module Connection

2N® IP/LTE Verso allows to connect the following extending modules:

- Infopanel
- Keypad
- Touch Keypad
- RFID Card Reader 125 kHz
- RFID Card Reader 13.56 MHz
- RFID Card Reader 13.56 MHz NFC Support
- Secured RFID Card Reader 13.56 MHz NFC Support
- Bluetooth & RFID reader 125kHz, 13.56MHz, NFC
- Bluetooth & RFID reader 125kHz, secured 13.56MHz, NFC
- Touch keypad & RFID reader 125kHz, 13.56MHz, NFC
- Touch keypad & RFID reader 125kHz, secured 13.56MHz, NFC
- Bluetooth Reader
- Touch Display
- Induction Loop
- Fingerprint Reader
- I/O Module
- 5-Button
- Wiegand Module
- Tamper Switch
- Blind Panel
- Security Relay

Module Bus Interconnection

All the 2N® IP/LTE Verso modules, except for the Tamper Switch, are interconnected via a bus. The bus starts on the main 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 interconnecting cable; the Wiegand (9155037) and I/O modules (9155034) include an 80 mm long interconnecting cable.

It is possible to order separate bus cables of the lengths of 1 m, 3 m, or 5 m (**Part Nos. 9155050/9155054/9155055**), which are designed for remote 2N® IP/LTE Verso module installations. Typically, they are used for an RFID card reader mounted on a wall opposite to the 2N® IP/LTE Verso installation. The cable may be used only once on the bus. In extensive installations, the total bus cable length may not exceed 7 m.

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	X		
Touch keypad	X		
RFID card reader 125 kHz	X		
RFID card reader 13.56 MHz	X		
RFID card reader 13.56 MHz NFC support	X		
Secured RFID card reader 13.56 MHz NFC	X		
Bluetooth & RFID reader 125kHz, 13.56MHz, NFC	X		
Bluetooth & RFID reader 125kHz, secured 13.56MHz, NFC	X		
Touch keypad & RFID reader 125kHz, 13.56MHz, NFC	X		
Touch keypad & RFID reader 125kHz, secured 13.56MHz, NFC	X		
Bluetooth reader	X		
Touch display	X		
Induction loop	X		
Fingerprint reader	X		
I/O module		X	

Module	Externally mounted (visible module)	Internally mounted (invisible module)	Internally mounted on bottom base edge
5-button	X		
Wiegand		X	
Tamper switch			X
Blind	X		
Security Relay		X	

Module Power Supply

Except for the protection switch module, all the 2N® IP/LTE Verso modules are powered from the bus. The available bus power output depends on the power supply type. Main 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
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.

Main unit (571v3)	Consumption [W] (Maximum value)
At relax	2.376
Infrared illumination	3.06
LED – call	0.072

Main unit (571v3)	Consumption [W] (Maximum value)
LED – ringing	0.072
LED – lock	0.072
LED – secured	0.096
Button backlight	0.072
Name tag backlight	0.072
Unit backlight	0.072
Relay 1	0.132
OUT 1	4.8
Audio	2.94
Total	**13.84**

Module	Idle consumption [W] (Minimum value)	Full load [W] (Maximum value)	Special elements [W]
Main unit with camera	2.36	11.57	
Main unit without camera	2.12	11.57	
Infopanel	0.17	0.35	
Keypad	0.19	1.16	
RFID card reader 125 kHz	0.52	1.31	
RFID card reader 13.56 MHz	0.44	0.82	

Module	Idle consumption [W] (Minimum value)	Full load [W] (Maximum value)	Special elements [W]
RFID card reader 13.56 MHz NFC	0.44	0.82	
Secured RFID card reader 13.56 MHz NFC	0.44	0.82	
Bluetooth & RFID reader 125kHz, 13.56 MHz, NFC	1.34	2.74	
Bluetooth & RFID reader 125kHz, secured 13.56MHz, NFC	1.34	2.74	
Touch keypad & RFID reader 125kHz, 13.56MHz, NFC	1.38	2.52	
Touch keypad & RFID reader 125kHz, secured 13.56MHz, NFC	1.38	2.52	
Bluetooth reader	0.20	0.67	
Touch display	0.19	1.70	
Induction loop	0.18	0.84	
Fingerprint reader	0.73	1.54	
I/O	0.31	0.65	Closed relay 0.13
5-button	0.19	1.16	
Wiegand	0.46	0.46	
Tamper switch	0.31	0.65	
Blind panel	x	x	

Specimen configuration consumption computation

Module	Minimum consumption [W]	Maximum consumption [W]
Main unit with camera	2.36	11.57
RFID card reader 13.56 MHz	0.44	0.82
I/O	0.31	0.65
5-button	0.19	1.16
Touch display	0.19	1.70
I/O	0.31	0.65
Tamper switch	0.31	0.65
Wiegand	0.46	0.46
Bluetooth reader	0.20	0.67
Total	**4.77**	**18.33**

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 calculated for minimum consumption).

Infopanel

The Infopanel (**Part No. 9155030**) is one of the **2N® IP/LTE Verso** intercom elements and is used for inserting and backlighting printed information.

- The module contains two **2N® IP/LTE Verso** bus connectors.
- These two connectors are fully interchangeable and can be used both as inputs from the main 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.
- Nametag dimensions: 69,2 (W) x 86,7 (H) mm (dimensional tolerance: +0; -0,5 mm).
- Refer to **www.2n.cz** for printing template.

Keypad

The Keypad (**Part No. 9155031**) is one of the **2N® IP/LTE Verso** intercom elements and provides a numerical input in the system.

- The module contains two **2N® IP/LTE Verso** bus connectors.
- These two connectors are fully interchangeable and can be used both as inputs from the main 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.

Touch Keypad

The Touch keypad (**Part No. 9155047**) is one of the **2N® IP/LTE Verso** intercom elements and provides a numerical input in the system.

- The module contains two **2N® IP/LTE Verso** bus connectors.
- These two connectors are fully interchangeable and can be used both as inputs from the main 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® IP/LTE Verso** intercom elements and is used for reading RFID card Ids in the 125 kHz band.

- The module contains two **2N® IP/LTE Verso** bus connectors.
- These two connectors are fully interchangeable and can be used both as inputs from the main 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:

- EM4xxx

Caution

- To increase the reader's reading distance in combination with a touch display in a single installation, we recommend you to pull the M-Bus and LAN cables through separate bushings to avoid their crossing.

RFID Card Reader 13.56 MHz NFC support

The 13.56 MHz RFID card reader (**Part No. 9155040**) is one of the **2N® IP/LTE Verso** intercom elements and is used for reading RFID card Ids in the 13.56 MHz band.

- The module contains two **2N® IP/LTE Verso** bus connectors.
- These two connectors are fully interchangeable and can be used both as inputs from the main 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 (only the card serial number is read):

- **ISO/IEC 14443A** Mifare Classic 1k & 4k, DESFire EV1, Mini, Plus S&X, Ultralight, Ultralight C
- **ISO/IEC 14443B** CEPAS, HID iCLASS
- **JIS X 6319** Felica
- **ISO/IEC 18092** SmartPhone with NFC/HCE support, since Android version 4.3

Secured RFID Card Reader 13.56 MHz NFC support

The Secured RFID card reader 13.56 MHz NFC support (Part No. 9155086) is one of the 2N® IP/LTE Verso intercom elements and is used for reading RFID card Ids in the 13.56 MHz band.

- The module contains two 2N® IP/LTE Verso bus connectors.
- These two connectors are fully interchangeable and can be used both as inputs from the main 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 (optionally the card serial number or PAC ID is read):

- ISO14443A (Mifare, DESFire)
- PicoPass (HID iClass)
- FeliCa
- ST SR(IX)
- 2N® Mobile Key
- HID SE (Seos, iClass SE, Mifare SE)

Bluetooth & RFID reader 125kHz, 13.56MHz, NFC

Bluetooth with a combined 125 kHz and 13.56 MHz card reader module (**Part No. 9155082**) is one of the **2N® IP/LTE Verso** intercom elements and is used for Smartphone/2N® Mobile Key tablet/card access control, making user calls and/or other functions.

- NFC – a licensed function, for 2N® Mobile Key for Android only.
- The module contains two bus connectors.
- These two connectors are fully interchangeable and can be used either as inputs from the basic unit or 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:

- **125 kHz**
  - EM4xxx
- **13.56 MHz**
  - ISO14443A (Mifare, DESFire)
  - PicoPass (HID iClass)
  - FeliCa
  - ST SR(IX)
  - 2N® Mobile Key

Tip

- To accelerate card reading, you are recommended to select the card types used by the user in the module settings.

Bluetooth & RFID reader 125kHz, secured 13.56MHz, NFC

Bluetooth with a combined 125 kHz and secured 13.56 MHz card reader (**Part No. 9155084**) is one of the **2N® IP/LTE Verso** intercom elements and is used for Smartphone/2N® Mobile Key tablet/card access control, making user calls and/or other functions.

- NFC – a licensed function, for 2N® Mobile Key for Android only.
- The module contains two bus connectors.
- These two connectors are fully interchangeable and can be used either as inputs from the basic unit or 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:

- **125 kHz**
  - EM4xxx
- **13.56 MHz**
  - ISO14443A (Mifare, DESFire)
  - PicoPass (HID iClass)
  - FeliCa
  - ST SR(IX)
  - 2N® Mobile Key
  - HID SE (Seos, iClass SE, Mifare SE)

Tip

- To accelerate card reading, you are recommended to select the card types used by the user in the module settings.

Touch keypad & RFID reader 125kHz, 13.56MHz, NFC

The touch keypad with a combined 125 kHz and 13.56 MHz card reader (**Part No. 9155081**) is one of the **2N® IP/LTE Verso** intercom elements and is used for code/card access control, making user calls and/or other functions. The keypad surface is very sensitive yet weatherproof at the same time.

- NFC – a licensed function, for 2N® Mobile Key for Android only.
- The module contains two bus connectors.
- These two connectors are fully interchangeable and can be used either as inputs from the basic unit or 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:

- **125 kHz**
  - EM4xxx
- **13.56 MHz**
  - ISO14443A (Mifare, DESFire)
  - PicoPass (HID iClass)
  - FeliCa
  - ST SR(IX)
  - 2N® Mobile Key

Tip

- To accelerate card reading, you are recommended to select the card types used by the user in the module settings.

Touch keypad & RFID reader 125kHz, secured 13.56MHz, NFC

The touch keypad with a combined 125 kHz and secured 13.56 MHz card (**Part No. 9155083**) reader is one of the **2N® IP/LTE Verso** intercom elements and is used for code/card access control, making user calls and/or other functions. The keypad surface is very sensitive yet weatherproof at the same time.

- NFC – a licensed function, for 2N® Mobile Key for Android only.
- The module contains two bus connectors.
- These two connectors are fully interchangeable and can be used either as inputs from the basic unit or 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:

- **125 kHz**
  - EM4xxx
- **13.56 MHz**
  - ISO14443A (Mifare, DESFire)
  - PicoPass (HID iClass)
  - FeliCa
  - ST SR(IX)
  - 2N® Mobile Key
  - HID SE (Seos, iClass SE, Mifare SE)

Tip

- To accelerate card reading, you are recommended to select the card types used by the user in the module settings.

Induction Loop

The **Induction loop** is one of the **2N® IP/LTE Verso** intercom elements and is used to transmit an audio signal directly into a hearing aid via a magnetic field.

- The module contains two 2N® IP/LTE Verso bus connectors.
- These two connectors are fully interchangeable and can be used both as inputs from the main 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.
- Used mode: Telecoil (also referred to as t-switch or t-coil)
- Maximum power: 2W
- Frequency range: 100 Hz – 5 kHz / ± 3 dB
- External antenna can be connected – Part No. 9155043
- Short circuit resistance: without limitation

Fingerprint Reader

The Fingerprint reader is one of the 2N® IP/LTE Verso intercom modules and is used for automated verification of human fingers for access control and intercom control.

- The module contains two 2N® IP/LTE Verso bus connectors.
- These two connectors are fully interchangeable and can be used both as inputs from the main 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.

Important module properties:

- FBI PIV and Mobile ID certification – FAP20
- Durable glass touch surface
- Rejects spoof fingerprints
- -20 to 55 ºC operating temperature range,
- 0–90% relative humidity, noncondensing

Note

- A higher moisture may deteriorate finger papillary line scanning. You are advised to dry your finger and the reader scanning surface for successful authentication.
- Fingerprint scanning can be rather difficult with older persons whose papillary lines are no so distinct (lower finger elasticity due to age requires a higher pressure for scanning and the fingerprint might be blurred).

Bluetooth Reader

- The Bluetooth reader (**Part No. 9155046**) is one of the **2N® IP/LTE Verso** intercom elements and helps authenticate and subsequently open doors using Android and iOS based smartphones via the Bluetooth protocol 4.0 as RFID card replacement. Install the **2N® Mobile Key** application from **Google Play** and **Appstore** to make authentication work properly. The application requires phones with Android OS 6 and higher and iOS 12 and higher.
- The module contains two **2N® IP/LTE Verso** bus connectors.
- The two connectors are fully interchangeable and can be used both as inputs from the main unit or outputs to other modules.
- If this module is the last one on the bus, one of the connectors remains unconnected.
- The package includes a 220 mm long interconnecting cable.
- The module uses the 2.4 GHz frequency.

IDs from the following smart phones can be read:

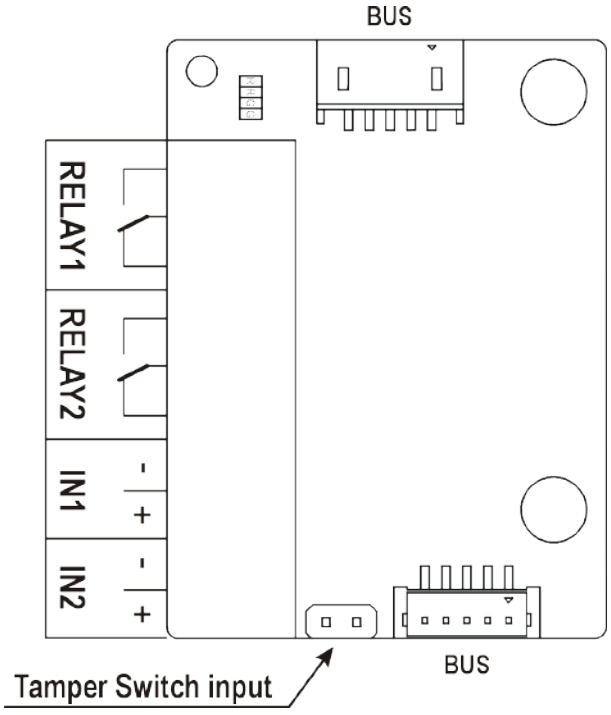
- **Android 6 and higher**
- **iOS 12 and higher**

I/O

The I/O (Part No. 9155034) is one of the **2N® IP/LTE Verso** intercom elements and is used for extending the number of inputs and outputs.

- The module contains two **2N® IP/LTE Verso** bus connectors.

- These two connectors are fully interchangeable and can be used both as inputs from the main 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. The module name is configured 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 = closed contact 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 = closed contact OR U_{IN} < 1.5 V
TAMPER	Tamper switch (9155038) input

5-Button

The 5-button (Part No. 9155035) is one of the 2N® IP/LTE Verso intercom elements and is used for extending the number of buttons.

- The module contains two 2N® IP/LTE Verso bus connectors.
- These two connectors are fully interchangeable and can be used both as inputs from the main 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.
- Nametag 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 nametag printing template.

Touch Display

The Touch display (Part No. 9155036) module is designed for the 2N® IP/LTE Verso communicator. This module can be used as:

- Infopanel module – displays user defined image sequences
- Keypad module – virtual touch keypad
- Button module – virtual phone directory

Module connection options:

- The module contains two 2N® IP/LTE Verso 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.

Technical specification:

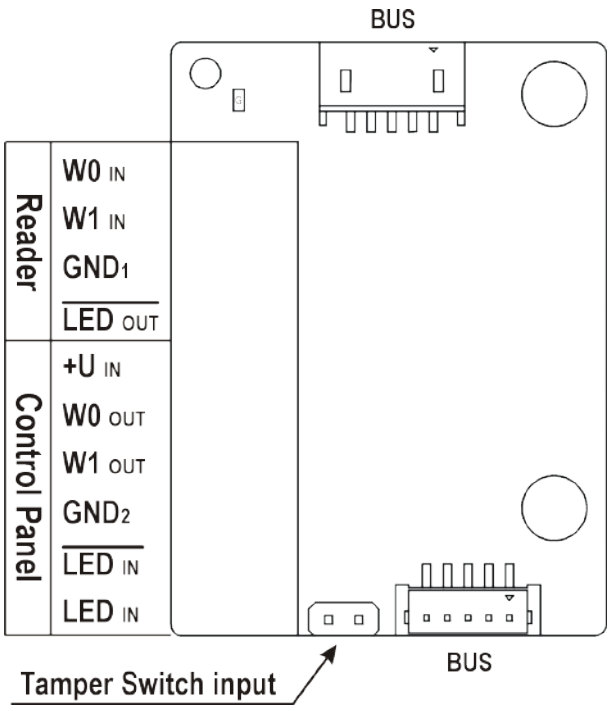
- Resolution: 320 px x 214 px H x V
- Resolution slideshow: 214 px x 214 px
- Contrast ratio: 400
- Brightness: 350 cd/m2

- Weight: 280 g
- Working temperature: -20 °C – 60 °C
- Resistance level: IK07

Wiegand

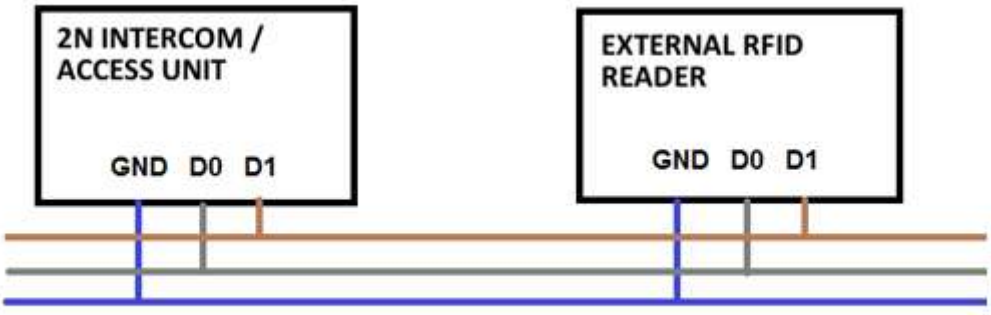
The Wiegand (Part No. 9155037) is one of the 2N® IP/LTE Verso intercom elements and is used for connecting an external Wiegand device (RFID card reader, fingerprint or other biometric data reader) and/or connecting the 2N® IP/LTE Verso system to an external security exchange. All the inputs and outputs are galvanically isolated from the 2N® IP/LTE Verso system with insulation strength of 500 V DC. It is necessary to feed +U IN on Wiegand OUT from the Control Panel.

- Reader – connects an external Wiegand-supporting reader. The reader sends information on the intercom card number.
- Control Panel – used for connection to the security PBX or access system to which the intercom sends information on the intercom card number.
- The module contains two 2N® IP/LTE Verso bus connectors.
- These two connectors are fully interchangeable and can be used both as inputs from the main 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 module name is configured in the Module name parameter in the Hardware / Extenders menu.
    - The input LED IN is addressed as follows: **<module_name>.<input1>**, e.g. module2.input1.
    - The input Tamper is addressed as follows: **<module_name>.<tamper>**, e.g. module2.tamper.
    - The output LED OUT (negated) is addressed as follows: **<module_name>.<output1>**, e.g. module2.output1.

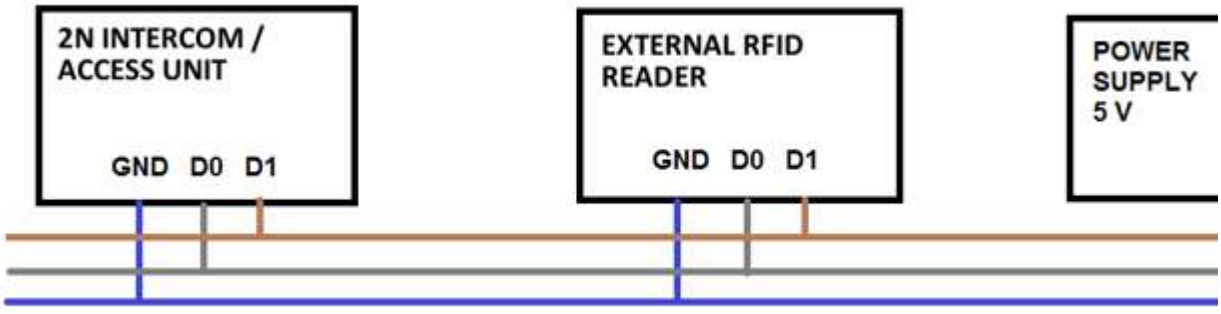


Reader	W0 **IN**, W1 **IN**, GND1	Isolated 2-wire WIEGAND IN
	LED **OUT**	Isolated open LED OUT switched against GND1 on WIEGAND IN side (up to 24 V / 50 mA)
Control Panel	+U **IN**	$+U_{IN}$ (5 to 15 V DC) WIEGAND OUT power supply input
	W0 **OUT**, W1 **OUT**, GND2	Isolated 2-wire WIEGAND OUT
	LED **IN** (negated)	Isolated input for open LED IN, input activated by GND2
	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

Wiegand Input Technical Parameters	
Current	5 mA
Input resistance	680 Ohm
Pulse length	50 µs
Delay between pulses	approx. 2 ms



Recommended Wiring Diagram for Reader with Bus Driver



Recommended Wiring Diagram for Reader with Open Collector (OC) Output

Tamper Switch

The **Tamper switch** (Part No. 9155038) is one of the **2N® IP/LTE Verso** intercom elements and helps secure the system against tampering.

- 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 (9155034)** or **Wiegand module (9155037)**, can be used for alarm signalling via the Automation interface in the **2N® IP/LTE Verso** configuration.
  - This module is not connected to the bus.

Caution

- Remember to purchase an I/O module, Part No. 9155034, together with the tamper switch.

Tamper Switch Mounting

Blind Panel

The **Blind panel** (Part No. 9155039) is used to cover an empty position.

Security Relay

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

Function:

The **2N® Security Relay** is a device installed between an intercom (outside the secured area) and the electric lock (inside the secured area). The **2N® 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

Switched output:

- Where the security relay is fed from the intercom, 9 to 13 V DC is available on the output depending on the power supply (PoE: 9 V; adapter: source voltage of minus 1 V) / 400 mA DC.
- Where the security relay is fed from an external power supply, 12 V / 700 mA DC is available on the output.

Dimensions: (56 x 31 x 24) mm

Weight: 20 g

Installation:

Install the 2N® 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® Security Relay to the intercom as follows:

- To the intercom active output (OUT1)

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

- To the switched output.
- To the passive output in series with the external power supply.

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

Status signalling:

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

Configuration:

- Connect the 2N® Security Relay to the properly set intercom switch output; refer to the Configuration Manual for 2N IP intercoms. Make sure that one LED at least on the 2N® Security Relay is on or blinking.

- Press and hold the 2N® Security Relay Reset button for 5 seconds to put the device in the programming mode (both the red and green LEDs are blinking).
- 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® Security Relay will pass into the operational mode (the green LED is blinking).

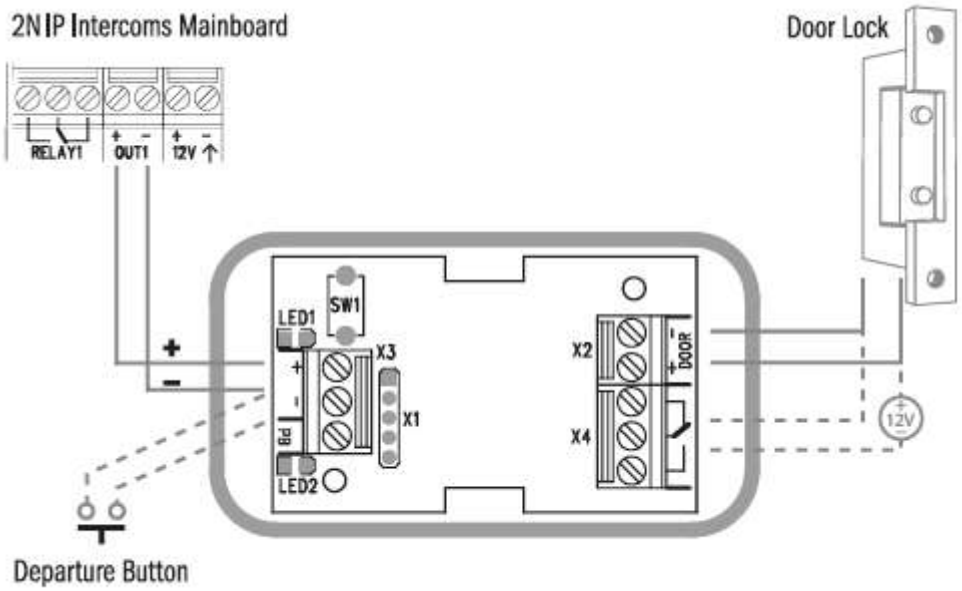
Caution

- In case of resetting the factory default settings on a device with a version of firmware 2.18 or higher it is necessary to reprogram the 2N® Security Relay using the instructions above.

Tip

- FAQ: 2N ® Security Relay – what is it and how to use it with 2N IP intercom?

Connection:


2N IP Intercoms Mainboard
Door Lock
RELAY1
OUT1
12V
LED1
SW1
X3
X1
X2
X4
DOOR
PB
LED2
12V
Departure Button

2.5 Completion

Installation Completion

Check all the wire and antenna connectors on the board.

> ⚠ **Caution**
>
> - All unused connectors have to have tightened screws in order to avoid vibration caused by sound.

Make sure before mounting that the black sealing ring is placed properly. We recommend you to fit the microphone with the screw included in the delivery.

Nametag Placing

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

We recommend you to use separate foil for every button in the 5-button module. Refer to section download for the nametag printing template.

Nametag 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 nametag dimensions: 69.2 (W) x 86.7 (H) mm (dimensional tolerance: +0; -0.5 mm).

Caution

- The area where nametags are placed is called a wet zone. After heavy rain, water can penetrate to the nametag. 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 nametags. Never use paper or ink jet printing to avoid damage due to water leakage!

Nametag 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 nametag 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 surface 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 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..

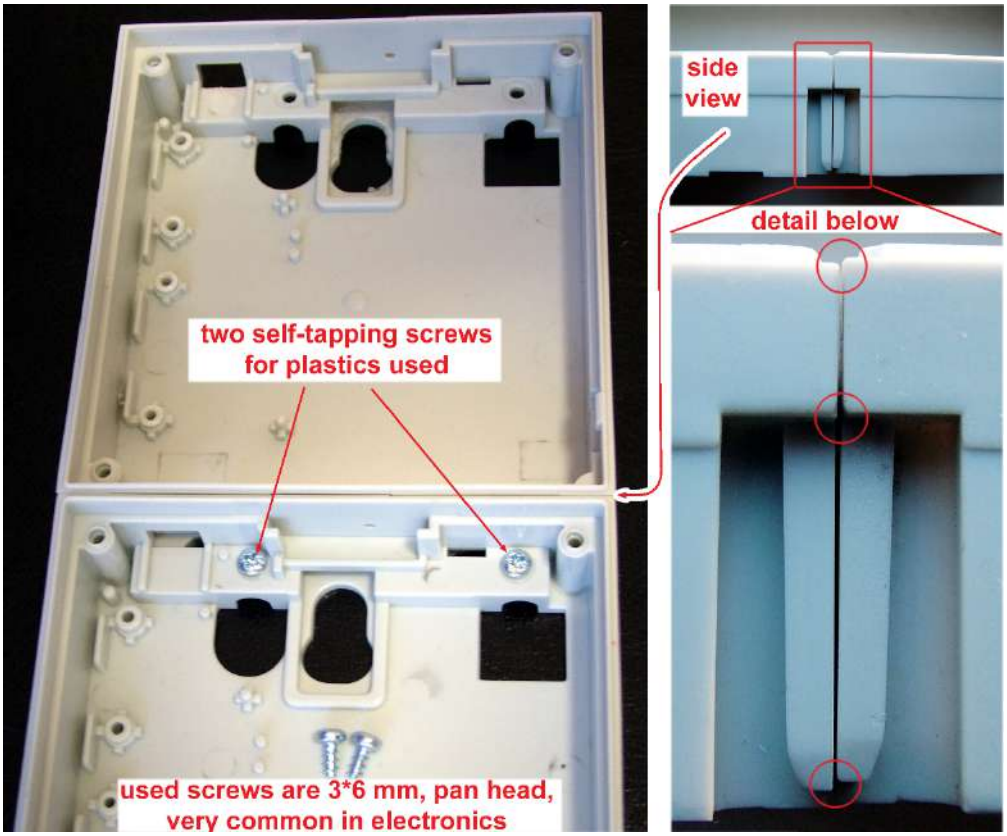
Most Frequent Mounting Errors

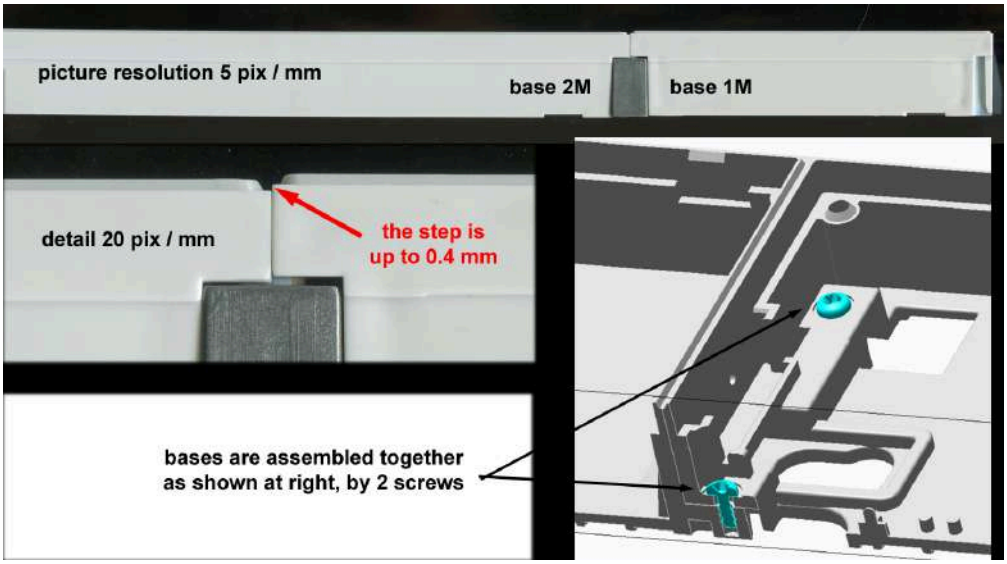
At first, mount the metal bolts, level the bases on an even surface and tighten the screws.

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. Function and Use

This section describes the basic and extending functions of the the 2N® LTE Verso product.

Here is what you can find in this section:

- 3.1 Configuration
- 3.2 Intercom Control as Viewed by External User
- 3.3 Touch Display Intercom Control As Viewed by External User
- 3.4 Intercom Control as Viewed by Internal User
- 3.5 Maintenance
- 3.6 Downloads

3.1 Configuration

Configuration via SMS Commands

2N® LTE Verso includes a set of SMS commands that help you identify the device state and configure the basic mobile data connection parameters. For example, you can use an SMS command to set an APN other than that selected automatically after the first power up. Make sure that all the SMS commands are admin authorised by pwd=<password>. The password is always identical with the device web interface login password. If the password is missing or wrong, the device ignores the command, fails to process data and does not respond. Also make sure that the device is registered with the LTE network (SMS commands, however, work without data connection too).

STATE command – current device state info

SMS format: state pwd=<password>

The device sends the following response:

- state – current device state: REGISTERED (registered without data connection), DATA_CONNECTING (registered, trying to establish data connection), DATA_CONNECTED (registered, data connection established)
- operator – connected provider
- network – current data network type (NONE, 2G, 3G, 4G)
- signal – signal strength
- ipaddr – device IP address

Example of SMS: state pwd=2n

GET command – parameter reading

SMS format: get pwd=<password> <parameter>

Available parameters:

- name – device name
- my2nid – My2N ID
- serial – serial number
- apn – APN, parameters ausr and apwd are returned in the response
- ausr – APN authorisation name

- apwd – APN authorisation password
- iccid – SIM card ICCID
- fwver – current firmware version

The device sends the following response: "ok <parameter>=<value>" or "error" including error description.

Example of SMS: get pwd=2n fwver

SET command – parameter setting

SMS format: set pwd=<password> <parameter>=<value>

Available parameters:

- name – device name
- my2nid – My2N ID
- http – HTTP server switch on/off

The device sends the following response: "ok" or "error" including error description.

Example of SMS: set pwd=2n name=Brana01

Example of SMS: set pwd=2n http=1

SET command – APN parameter setting

SMS format: set pwd=<password> apn=<apnName> ausr=<apnUser> apwd=<apnPwd>

- apnName – mobile provider's APN
- apnUser – APN user name
- apnPwd – APN password

Examples of SMS:

set pwd=2n apn= internet.t-mobile.cz ausr=wap apwd=wap

set pwd=2n apn=internet ausr= apwd=

LOCATE command – device peeps and flashes after command receipt

SMS format: locate pwd=<password>

The device sends the following response: "ok".

Access to Device Web Configuration Interface

Once logged into the LTE mobile network, 2N® LTE Verso gets automatically connected to the My2N portal. Log in to My2N at https://my2n.com and add the intercom to your account. The 2N® Mobile Video service helps you set basic parameters and make calls to mobile phones or 2N communicators. The 2N® Remote Configuration service makes the intercom web configuration interface accessible to you.

3.2 Intercom Control as Viewed by External User

Quick Dial Buttons

Press the quick dial button on the main unit to dial the first position in the phone directory (Phone Book) depending on the model type. Use extending modules to extend the number of quick dial buttons to up to 146.

By pressing the quick dial buttons you dial the phone numbers assigned to the particular Phone Book position. Call setup is signalled by a long intermittent or any other tone depending on the configuration of the PBX connected.

Repeated pressing of one and the same quick dial button during call setup may initiate call hangup or call termination plus dialling the next phone number of the called subscriber, or may be assigned no function; refer to the Intercom Configuration / Hardware / Keypad subsection of Configuration Manual.

You can also press the button anytime to hang up if enabled so in the **Button Function During Call** parameter; refer to the Intercom Configuration / Hardware / Keypad subsection of Configuration Manual.

Calling to Phone Book Position

The **2N® LTE Verso** Phone Book can contain up to 10 000 programmable positions. The quick dial buttons can only be used for positions 1 through 146, depending on the number of actually installed buttons. You can dial the other positions using the numeric keypad if the **Dial by Numeric Keypad** function is enabled; refer to the Intercom Configuration / Hardware / Keypad subsection of Configuration Manual.

Procedure:

- Enter the position number using the numeric keypad (05, 15, 200, e.g. – two digits at least and four digits at most) and press the button for confirmation.
- You can also press the button anytime to hang up if enabled so in the **Button Function During Call** parameter; refer to the Intercom Configuration / Hardware / Keypad subsection of Configuration Manual.

Calling to User-Defined Phone Number

If the Telephone function enabled (refer to the Intercom Configuration / Hardware / Keypad subsection of Configuration Manual) parameter is selected, you can dial a user-defined phone number using the 2N® LTE Verso numeric keypad.

Procedure:

1. Press .
2. You will hear a continuous tone from the speaker.
3. Enter the phone number via the numeric keypad and press again to confirm your dialling.
4. You can also press the button anytime to hang up if enabled so in the Button Function During Call parameter; refer to the Intercom Configuration / Hardware / Keypad subsection of Configuration Manual.

Incoming Call Answering/Rejecting

If the automatic incoming call answering function is disabled (refer to the Intercom Configuration / Services / Phone / Calls subsection of Configuration Manual), the incoming call to 2N® LTE Verso is signalled with loud ringing. Press to answer the call and to reject the call.

Door Opening (Switch Activation) by Code

2N® LTE Verso is equipped with a door unlocking switch. Enter the valid code (refer to the Intercom Configuration / Hardware / Switches subsection of Configuration Manual) using the numeric keypad to activate this switch.

Procedure:

- Enter the switch activating numerical code using the numeric keypad and press for confirmation.
- A valid code is notified visually and by a continuous switch activation tone or a predefined unlocking user sound. An invalid code or interruption longer than as defined in Timeout for Entering Numbers is signalled by the sound or a user sound.

Door Opening (Switch Activation) by Biometric Reader

A biometric reader helps authenticate human fingerprints for control and management of access and third party devices. Refer to Directory / Users for how to load a fingerprint into a user profile.

Procedure:

- Apply your finger to the reader scanning area.
- Reader authentication light signalling:
  - Green – the fingerprint has been recognised successfully.
  - Green flashes to red – the fingerprint has been recognised but access is denied. Check the user time profile setting state and multiple authentication setting. Access can also be blocked by a previous tamper switch blocking.
  - Red – the fingerprint has not been recognised .

Note

- A higher moisture may deteriorate finger papillary line scanning. You are advised to dry your finger and the reader scanning surface for successful authentication.

Profile Activation/Deactivation

Activate/deactivate a profile using the numeric keypad in order to route calls directly to the phone numbers tied with the profile; refer to the Intercom Configuration / Directory / Time Profiles subsection of Configuration Manual subsection for details.

Procedure:

- Enter the profile activating/deactivating numerical code using the numeric keypad and press for confirmation.
- A valid code is signalled by the or sound according to the code type. An invalid code or interruption longer than as defined in **Timeout for Entering Numbers** is signalled by the sound.

3.3 Touch Display Intercom Control As Viewed by External User

The 2N® LTE Verso model can be equipped with a colour LCD display, which displays the device states (call progress, door opening, etc.) and can work in several modes. Until the display configuration is loaded, 2N® LTE Verso displays no users to be called in the Directory menu. If configured properly, the 2N® LTE Verso starts displaying an Ad menu or the Directory/Keypad introductory menu or separate Directory or Keypad menus. Control a display-equipped 2N® LTE Verso intercom by touching the display and browsing.

Presentation

In the Presentation mode, one or more images defined by the available display configuration are displayed. The Presentation mode is started automatically when the presentation delay timeout set in the 2N® LTE Verso web interface expires. The mode can be terminated by a touch of the icon, which moves 2N® LTE Verso into the display introductory menu, or by an incoming call to 2N® LTE Verso.

Contacts

In the Contacts mode, a structured list of users defined by the available display configuration is displayed. The user list can be divided into a practically arbitrary count of groups. Browse through the Directory by touching the display. Click

to return to the superior group or the display introductory menu. Touch the user name to make a call in the Contacts mode.

This mode helps you quick search contacts too. Touch the display icon to switch the Contacts into the search mode and enter the string to be searched via the touchpad. See the string in the status line in the upper part of the display. Touch the display icon to delete the currently last character of the text to be searched. The string is searched for in the current group and subgroup levels. See the count of found users in the right-hand upper corner of the display. Touch the found contacts and browse through the data.

The Contacts menu also includes a Help submenu in the right-hand bottom corner of the display, which provides tips and basic display controls for the Contacts mode.

Call

Use the Call mode to make calls to the intercom Directory users.

To call a user, set Dialling via keypad in the intercom web interface and select one of the following options: Disabled, User position number or User virtual number. If you set User position number or User virtual number, just enter the number and click for confirmation. Click

to get back to the display introductory menu.

Entry

The Entry mode helps you enter the switch codes. Enter the switch digital code and click

for confirmation. You can also enable Scramble keypad in the Keypad mode via the web interface to scramble the numerical keypad buttons before every new display in order to prevent third persons from seeing the code to be entered.

3.4 Intercom Control as Viewed by Internal User

Call Answering

You can answer the incoming calls to the 2N® LTE Verso intercom using your phone like any other calls. You can unlock the door, activate/deactivate a user/profile via your phone keypad during the call. The calls, however, are time-limited to avoid unintentional blocking of the 2N® LTE Verso line. Set the maximum call duration in the Call time limit (refer to the Intercom Configuration / Services / Phone / Calls subsection of Configuration Manual). Press # on your phone anytime to extend the call time. The automatic call termination is signalled with a short beep 10 s before the call end.

Calling to 2N ® LTE Verso

2N® LTE Verso allows you to answer incoming calls. Set the required parameters in the Incoming calls group; refer to the Intercom Configuration / Services / Phone / Calls subsection of Configuration Manual.

Door Opening (Switch Activation) by Code

2N® LTE Verso is equipped with a door unlocking switch. Enter the valid code (refer to the Intercom Configuration / Hardware / Switches subsection of Configuration Manual) using your phone keypad to activate this switch.

Procedure:

- Enter the switch 1 or 2 activating code using your phone keypad and press # for confirmation. Confirmation is unnecessary if the Lock code without confirmation is enabled, refer to the Intercom Configuration / Hardware / Switches / Advanced subsection of Configuration Manual.
- A valid code is signalled by the sound. An invalid code or interruption longer than as defined in Timeout for Entering Numbers is signalled by the sound.

Profile Activation/Deactivation

Activate/deactivate a profile using your phone in order to route calls directly to the phone numbers tied with the profile, refer to the Intercom Configuration / Directory / Time Profiles subsection of Configuration Manual for details.

Procedure:

- Enter the profile activating/deactivating code using your phone keypad and press for confirmation.
- A valid code is signalled by the or sound according to the code type. An invalid code or interruption longer than as defined in Timeout for Entering Numbers is signalled by the sound.

3.5 Maintenance

Cleaning

If used frequenly, the device surface, the keypad in particular, gets dirty. To clean it, use a piece of soft cloth moistened with clean water. We recommend you to follow these principles while cleaning:

- Never use aggressive detergents (such as abrasives or strong disinfectants).
- Use suitable cleaning agents for glass lens cleaning (cleaners for glasses, optic devices screens, etc.)
- Clean the device in dry weather in order to make waste water evaporate quickly.
- The electronics cleaning wipes are suitable.

Anticovid

- To keep your equipment surfaces clear of bacteria and viruses (Anti-Covid disinfection) and maintain the hygienic conditions of critical surfaces and touch points we recommend that you use the Zoono – Microbe Shield Surface Sanitiser Spray.

Warning

- Prevent water from getting inside the intercom.
- Do not use alcohol-based cleaners.
- Avoid peroxide-based cleaners.

3.6 Downloads

Templates

Nameplates

Infopanel label

Software

2N® USB Driver 1.0.6

2N® IP Eye 1.1.4

2N® Network Scanner 3.0.4

4. Technical Parameters

Signalling protocol

- SIP (UDP, TCP, TLS)

Buttons

- **Button design:** white-backlit transparent buttons with replaceable nametags
- **Button count:** 1 and increments of 5
- **Button extenders:** up to 29 modules, limited by power supply
- **Numeric keypad:** optional

Audio

- **Microphone:** 1 integrated microphone
- **Amplifier:** 2 W (class D) amplifier
- **Speaker:** 2 W / 8 Ω
- **Sound pressure level (SPL max)**: 78 dB (for 1 kHz, distance 1 m)
- **Output LINE OUT:** 1 VRMS / 600 Ω
- **Volume control:** adjustable with automatic adaptive mode
- **Full duplex:** yes (AEC)
- **Speech transmission index (STI):** 0.89

Audio stream

- **Protocols:** RTP / RTSP
- **Codecs:** G.711, G.729, G.722, L16/16 kHz

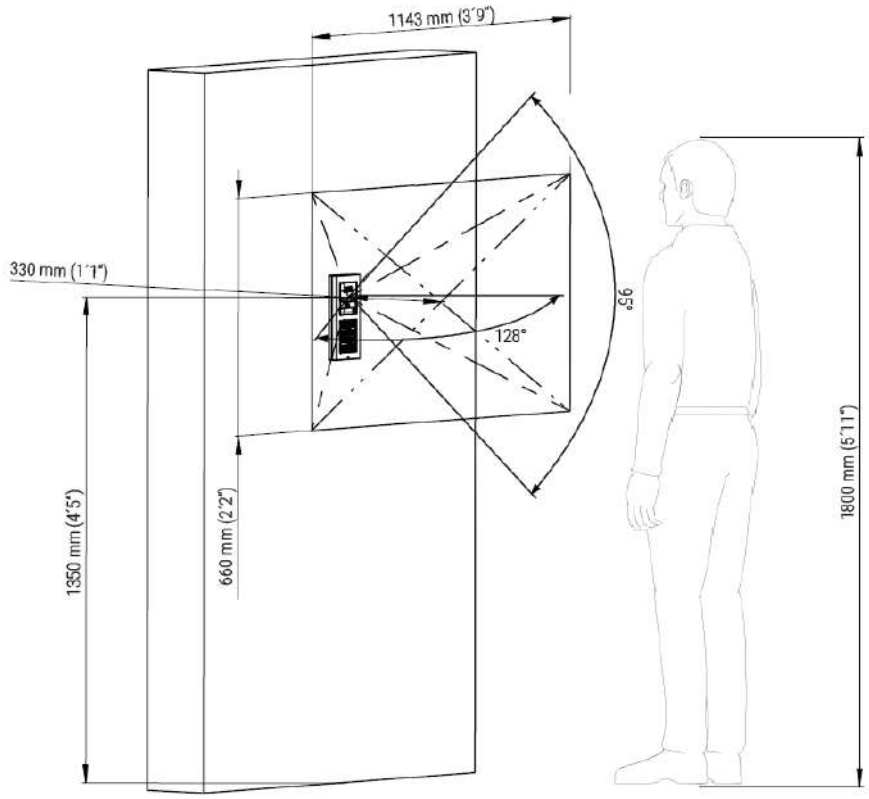
Camera

- **Sensor:** 1/3" colour CMOS
- **JPEG resolution:** up to 1280 (H) x 960 (V)
- **Video resolution:** 640 (H) x 480 (V)
- **Frame rate:** up to 30 snapshots/s
- **Sensor sensitivity:** 5.6 V/lux-sec (550 nm)

- **View angle:** 128 ° (H), 95 ° (V), 134 ° (D)
- **Infrared light:** yes
- **Sensor sensitivity without IR light:** 0,1 Lux ± 20 %
- **Focal length:** 2.25 mm

External LTE Antenna

- **Connector:** MMCX
- **Gain:** 4.1 dB
- **Power handling** : 25 W
- **Operating temperature:** -40 °C to +85°C
- **Dimensions:**
  - **Max height:** 6 mm
  - **Max width:** 14 mm
  - **Max length**: 122 mm
- **Mounting:** Adhesive Mount
- **Cable length:** 2 m



Video stream

- **Protocols:** RTP / RTSP / HTTP
- **Codecs:** H.263, H.263+, H.264, MPEG-4, M-JPEG
- **IP camera function:** yes, ONVIF v2.4 profile S compatible

Bandwidth

- Audio codecs
- - PCMA, PCMU – 64 kbps (with 85.6 kbps headers)
  - G.729 – 16 kbps (with 29.6 kbps headers)
  - G.722 – 64 kbps (with 85.6 kbps headers)
  - L16 / 16 kHz – 256 kbps (with 277.6 kbps headers)
- Video codecs
  Set the video codec data flows in the Services / Phone / Video menu for calls and in the Services / Streaming / RTSP menu for streaming. The set bandwidth represents the value that the codec has to approach on a long-time average. The data flows can vary depending on the scene to be scanned.

  The measued data flow values correspond to the test view of a person standing in front of the intercom.

- H.264
  - Low quality: QVGA (320 x 240), 10 fps, 256 kbps: 181 kbps (with 190 kbps headers)
  - Medium quality: VGA (640 x 480), 15 fps, 768 kbps: 600 kbps (with 661 kbps headers)
  - High quality: VGA (640 x 480), 30 fps, 2048 kbps: 1319 kbps (with 1372 kbps headers)

- MJPEG
  - Low quality: QVGA (320 x 240), 10 fps, quality 70: 435 kbps with headers
  - Medium quality: VGA (640 x 480), 15 fps, quality 85: 506 kbps
  - High quality: SXGA (1280 x 960), 15 fps, quality 95: 8 Mbps

Interface

- **Power supply:** 12 V ±15 % / 2 A DC
- **LTE FDD** Cat.1, 3GPP release 9 compliant
- **Supported protocols:** SIP2.0, DHCP opt. 66, SMTP, 802.1x, RTSP, RTP, TFTP, HTTP, HTTPS, Syslog, ONVIF
- **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 (power supply voltage minus 2 V), up to 400 mA
- **EU LTE bands** (9155401C-E a 9155401CB-E): B1(2100) B3(1800) B7(2600) B8 (900) B20(800)
    - **Module Telit LE910-EU1**
- **US LTE bands** (9155401C-U1 a 9155401CB-U1)**:** B2(1900) B4(AWS1700) B5(850) B12/B13(700)
    - **UMTS bands: B2(1900) B5(850)**
    - **Module Telit LE910-NA1**
        - **Connection speed:**
            - Uplink up to 5 Mbps
            - Downlink up to 10 Mbps

RFID card reader

- **Optionally 125 kHz or 13.56 MHz**
- **Supported cards, 125 kHz, Part No. 9155032:**
    - EM4100, EM4102
- **Supported cards, 13.56 MHz, Part No. 9155033** (only card serial number is read)
    - ISO/IEC 14443A
        - Mifare Classic 1k & 4k, DESFire EV1, Mini, Plus S&X, Ultralight, Ultralight C
    - ISO/IEC 14443B
        - CEPAS, HID iCLASS
    - JIS X 6319
        - Felica

- **Supported cards on 13.56 MHz NFC version, Part No. 9155040** (only card serial number is read)
  - ISO/IEC 14443A
    - Mifare Classic 1k & 4k, DESFire EV1, Mini, Plus S&X, Ultralight, Ultralight C
  - ISO/IEC 14443B
    - CEPAS, HID iCLASS
  - JIS X 6319
    - Felica
  - ISO/IEC 18092
    - SmartPhone with NFC/HCE support, since Android version 4.3
- **Supported cards on secured 13.56 MHz NFC version, Part No. 9155042** (optionally card serial number or PAC ID is read)
  - ISO/IEC 14443A
    - Mifare Classic 1k & 4k, DESFire EV1, Mini, Plus S&X, Ultralight, Ultralight C
  - ISO/IEC 14443B
    - CEPAS, HID iCLASS
  - JIS X 6319
    - Felica
  - ISO/IEC 18092
    - SmartPhone with NFC/HCE support, from Android version 4.3 up
- **Maximum H – field strength at 10 m for 125 kHz version: 66 dBµA/m**
- **Maximum H – field strength at 10 m for 13.56 MHz version: 60 dBµA/m**

2N® IP Verso – Bluetooth module

- Bluetooth 4.0 Compliant (Bluetooth Low Energy, BLE)
- **Security**: asymmetric RSA-1024 and symmetric AES-128 encryption
- **RX sensitivity**: up to -93 dBm
- **Range**: adjustable (short ~ 0.5m, medium ~ 2m, long ~ up to 10m)
- **Power consumption**: 20mA at 12V DC
- **Operational temperature range**: -40°C ~ +60°C
- **Storage temperature range**: -40°C ~ +70°C
- **Dimensions**: 97x105x30mm
- Compatible with 2N® IP Verso, 2N® LTE Verso and 2N® Access Unit
- Mobile app. support: Android 6 and higher, iOS 12.0 and higher

Touch display

- **Resolution:** 320 px x 214 px H x V
- **Resolution slideshow:** 214 px x 214 px
- **Contrast ratio:** 400
- **Brightness:** 350 cd/m2
- **Viewing angle:** 80 ° from any direction
- **Weight:** 280 g
- **Consumption min:** 1.36 W
- **Consumption max:** 2.40 W
- **Operating temperature:** -20 °C – 60 °C
- **Resistance level:** IK07

I/O module

- **Dimensions:** 43 (W) x 31,5 (H) x 1,5 (D) mm

Wiegand module

- **Dimensions:** 43 (W) x 31,5 (H) x 1,5 (D) mm

Mechanical properties

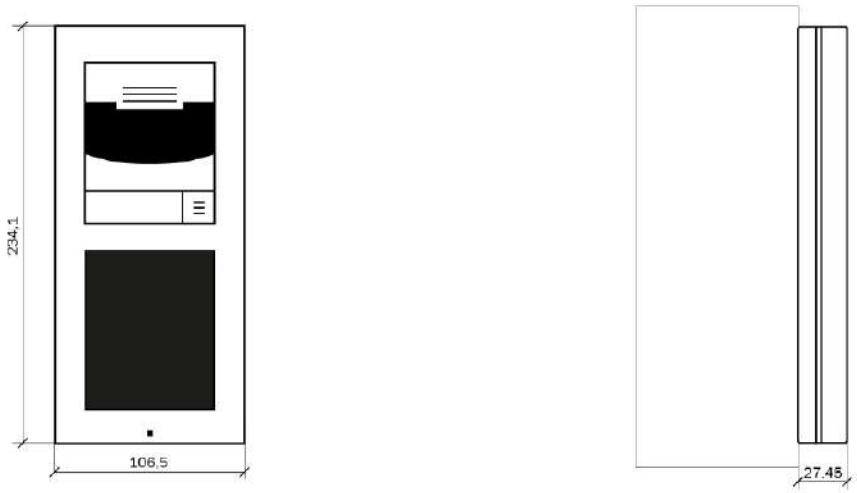
- **Cover:** robust zinc casting with surface finish (minor surface shade nuances are acceptable)
- 91554XXX – NICKEL
  - Material – Zamak 410 – Zn95Al4Cu1
  - Surface treatment – Zn/Cu20/Ni25b max. 80 µm
- 91554XXBXX – BLACK
  - Material – Zamak 410 – Zn95Al4Cu1
  - Surface treatment – Cataphoretic coating Black 30 µm, RAL 9004 – Signalschwarz (colour is not guaranted – it is cataphoretic)
- **Working temperature:** -40 °C – 60 °C
- **Working relative humidity:** 10 % – 95 % (non-condensing)
- **Storing temperature:** -40 °C – 70 °C

- Dimensions
  - Surface 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
  - Module internal cutout: 72 (W) x 89.3 (H) mm / 2.83 (W) x 3.51 (H) inches
- Weight: max net weight: 2 kg / max gross weight: 2.5 kg – based on configuration
- Covering level: IP54
- Resistance level: IK08

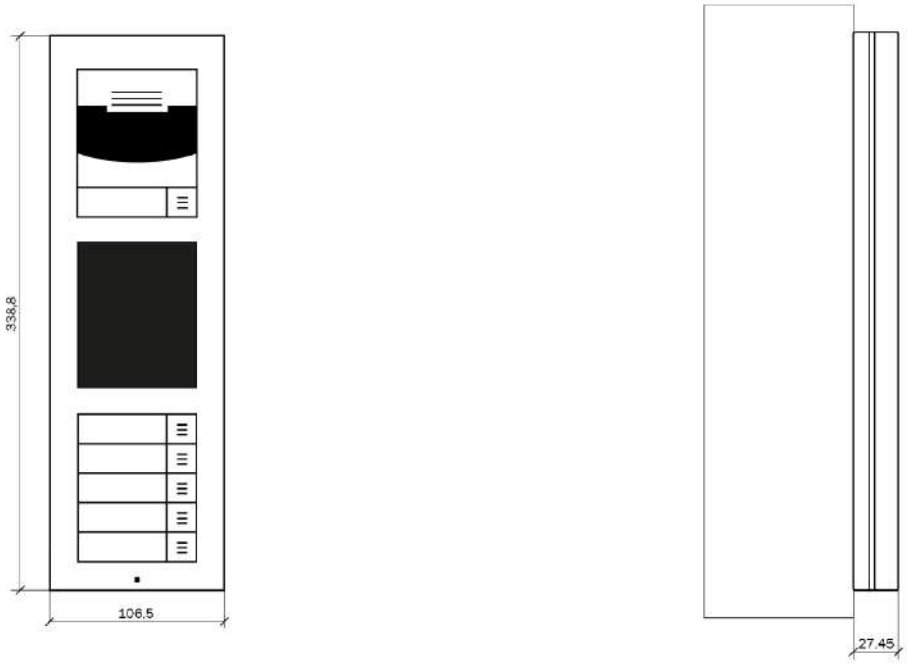
4.1 General drawings

Surface mounting

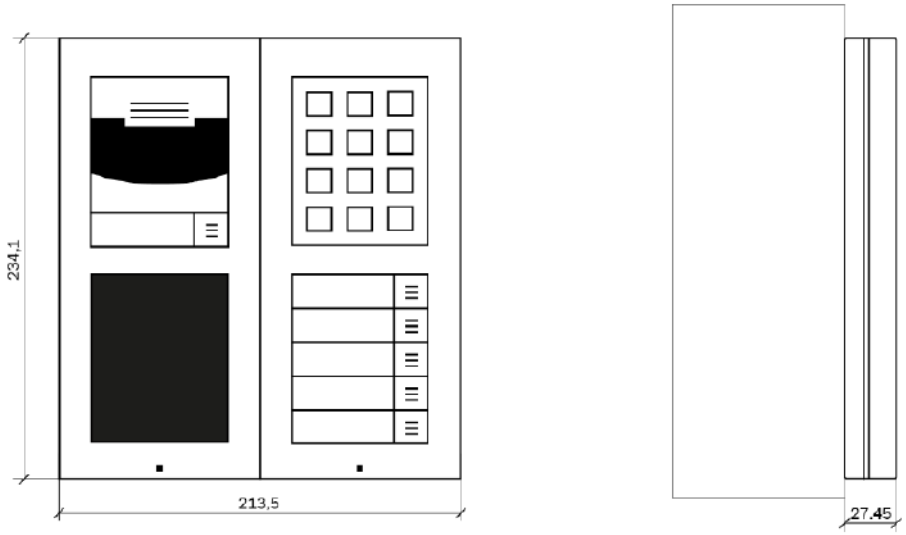
2 modules



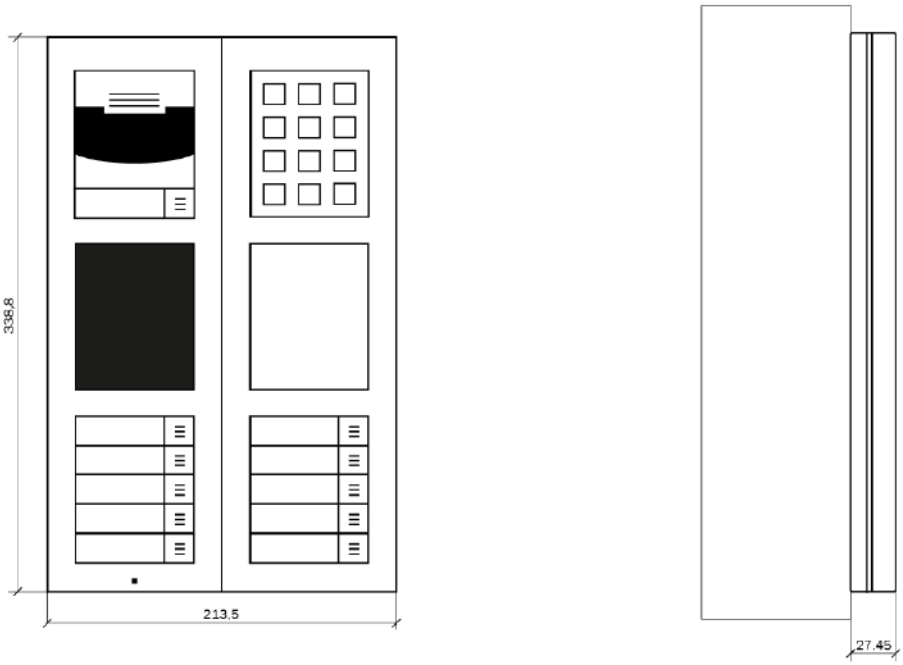
3 modules



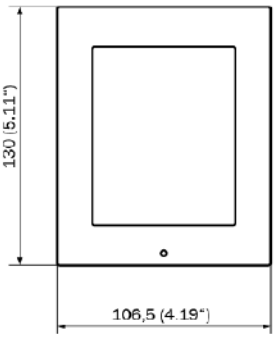
2 x 2 modules

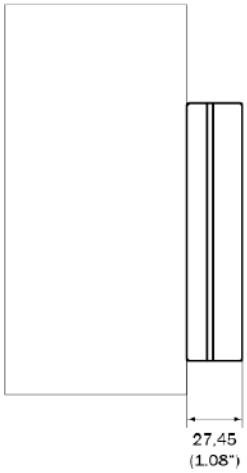


3 x 3 modules



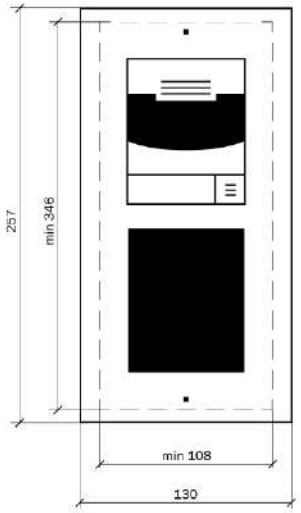
1 module

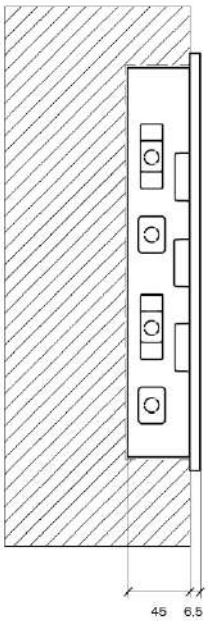




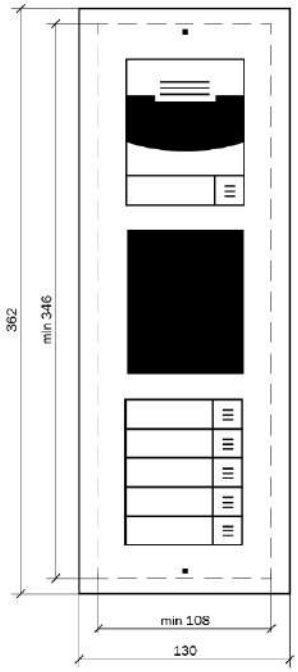
Flush mounting

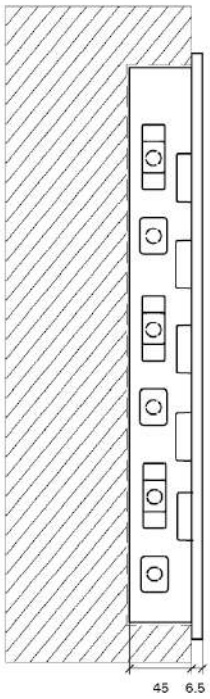
2 modules



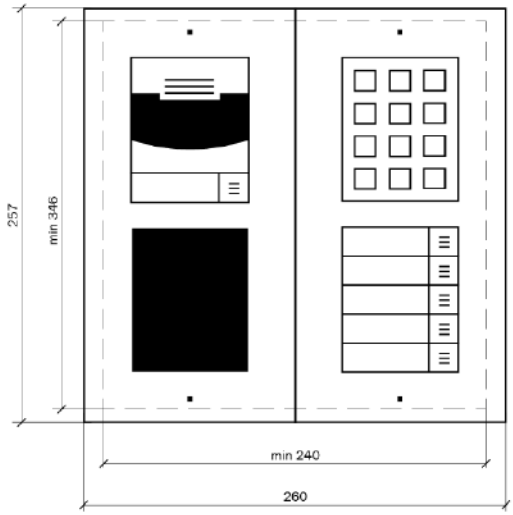


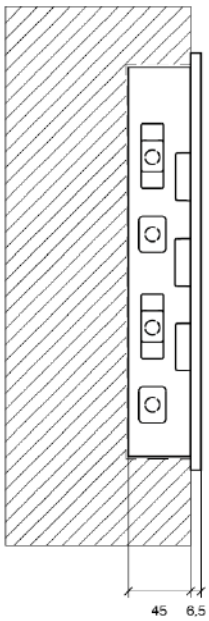
3 modules



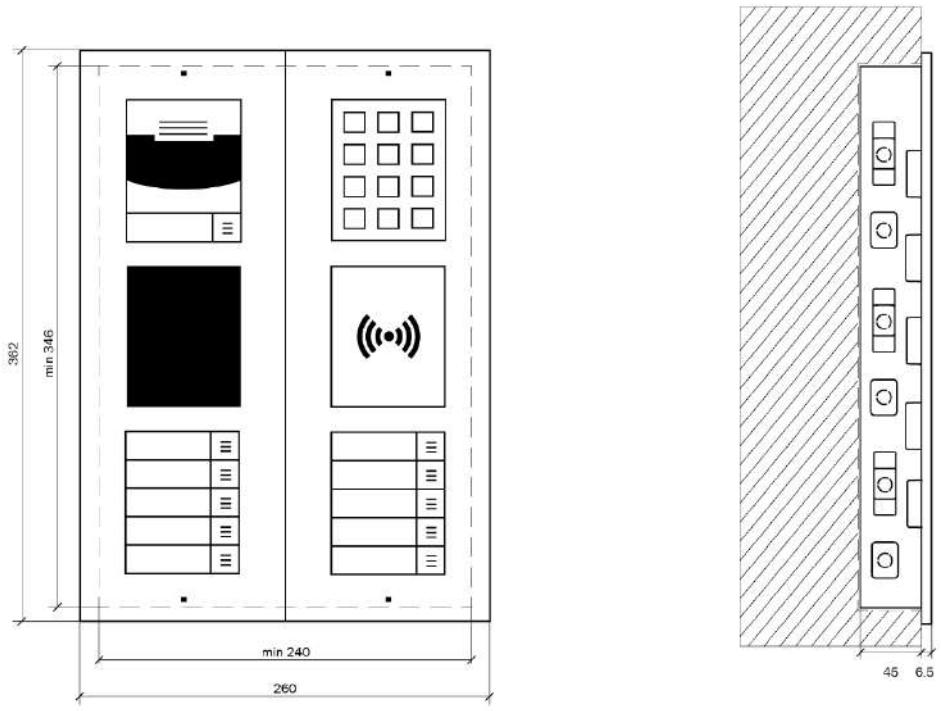


2 x 2 modules

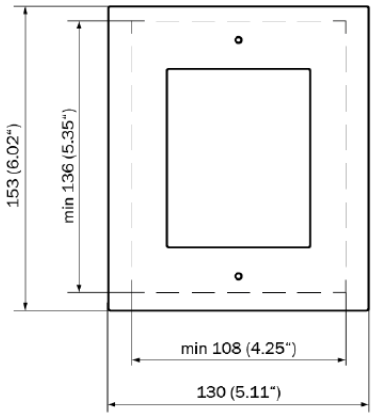


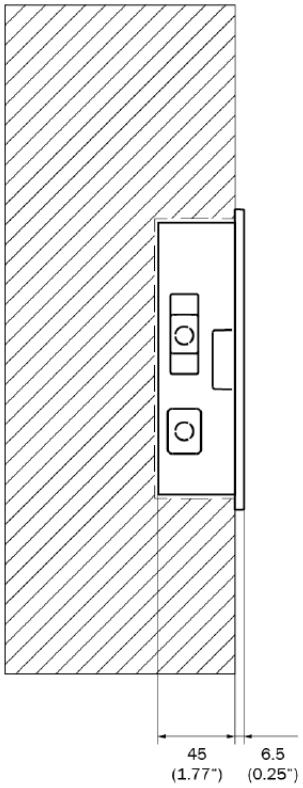


3 x 3 modules



1 module





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

2N® LTE Verso conforms to the following directives and regulations:

- 2014/53/EU for radio equipment
- 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment
- 2012/19/EU on waste electrical and electronic equipment

Industry Canada

This Class B digital apparatus complies with Canadian ICES-003/NMB-003.

FCC

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.

NOTE: 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.

DDA compliance:

2N TELEKOMUNIKACE intercoms comply with the Disability Discrimination Act 2005 (DDA) under the following conditions:

1. The intercoms are mounted so that their lower edge is between 100 and 120 centimeters above the floor.

2. The intercoms use a keyboard that has a mechanical protrusion on number 5.
3. The intercoms use electromagnetic loop as a hearing aid.

Intellectual Property Rights

Licensed U.S. Patent and Patent Application Nos: 8,139,098 7,193,644 8,144,183 8,144,184 8,154,581 8,164,614 9,432,638 9,414,030 9,485,478 9,516,284 9,635,323 9,706,178 9,648,290 9,554,090 9,924,141 9,866,802 10,097,797 10,097,796 11/929,449 11/929,457 11/929,460

Caution

Warning

In order to ensure the full functioning and guaranteed outputs we strongly recommend a verification of the timeliness of version of product or facility already during the installation process. The customer takes into consideration that the product or facility can achieve the guaranteed outputs and be fully operational pursuant to the producer's instructions only by using the most recent version of product or facility, which has been tested for full interoperability and has not been determined by the producer as incompatible with certain versions of other products, only in conformity with the producer's instructions, guidelines, manual or recommendation and only in conjunction with suitable products and facilities of the other producers. The most recent versions are available on the website https://www.2n.cz/cs_CZ/, or specific facilities, depending on their technical capacity, allow updating in the configuration interface. Should the customer use any other version of product or facility than the most recent one, or the version that has been determined by the producer as incompatible with certain versions of other producers' products of facilities, or the product or facility in a way incompatible with the producer's instructions, guidelines, manual or recommendation or in conjunction with unsuitable products or facilities of the other producers, he or she is aware of all potential limitations of functionality of such a product or facility and all relating consequences. Should the customer use any other than the most recent version of the product or facility, or the version that has been that has been determined by the producer as incompatible with certain versions of other producers' products of facilities, or the product or facility in a way incompatible with the producer's instructions, guidelines, manual or recommendation or in conjunction with unsuitable products or facilities of the other producers, he or she agrees that the company 2N TELEKOMUNIKACE a. s. is not liable neither for any limitation of such a product's functionality, nor for any damage, loss or injury relating to such a potential limitation of functionality.

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.

2N TELEKOMUNIKACE a.s.

Modřanská 621, 143 01 Prague 4, Czech Republic

Phone: +420 261 301 500, Fax: +420 261 301 599

E-mail: sales@2n.cz

Web: www.2n.cz

v1.5