



2N IP Force

Installation Manual



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Symbols and Terms Used

The following symbols and pictograms are used in the manual:



DANGER

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.

Product Description

In this section, we introduce the **2N IP Force** product, outline its application options and highlight the advantages following from its use.

Basic Features

2N IP Force is a highly durable and reliable IP intercom equipped with a number of useful features that are not common in devices in this category. Thanks to the SIP standard support and compatibility with renowned IP PBX and phone manufacturers, it can use all the VoIP network services.

2N IP Force can work as a standard or emergency door access intercom for buildings, entrances to premises or garages, manufacturing halls, highways and so on.

The main advantages of this device are:

Two highly sensitive microphones and one speakerphone (up to 10 W) – thanks to an integrated acoustic echo cancelling (AEC) system, the product provides mutual audibility even if the calling persons are talking at the same time under normal conditions.

Color Wide Angle Camera – the device can be equipped with a color wide angle camera, which allows the calling persons to be displayed on the called user's phone or PC monitor.

Keypad – the device can be equipped with a numeric keypad module, which allows the user to use the device as a code lock for lock switch activation and/or dialing a defined phone number or user number.

Card Reader – the device can be equipped with a card reader module, which provides access control functionality based on RFID cards or chips. With additional software features, functions other than the door lock can be RFID card controlled too.

Speed Dial Buttons – can be provided with pre-programmed buttons. You can set up to three telephone numbers and time profiles for each of the buttons to increase the accessibility of the called party.

Electric Lock Switch – this switch can be controlled via a numeric keypad, PC application or any phone during a call. If necessary, the device can be supplemented with an additional switch module.

Device Installation – is very easy, all you have to do is connect the system into your LAN via a network cable. The device can be supplied either from a 12 V DC power source or using PoE if supported by your LAN.

Device Configuration – use a PC equipped with any Internet browser for configuration. Extensive installations can be easily managed in bulk using **2N Access Commander**.

Other advantages of the device

Product Versions

2N IP Force is designed for outdoor applications and requires no additional roof. The W-including models are intended for WAP pressure cleaning and extremely noisy environments (such as highways, etc.).

A frame is included in the main unit package.



CAUTION

If combined with RFID readers, **2N IP Force** fails to meet the conditions of a supplementary regulation to the EU Radio Equipment Directive – effective from August 1, 2025. **2N IP Force 2.0** meets the conditions.

Refer to [Impacts of the EU Radio Equipment Directive](#) for more details.

One-button main units



Part No. 9151101W

Axis Part No. 01336-001

2N IP Force main unit – 1 button, 10 W loudspeaker

- IP69K
- 1 button
- 10 W loudspeaker
- Extra robust version
- Control of two electric locks
- Additional switch connection option

A frame is included in the main unit package.



Part No. 9151101CHW

Axis Part No. 01337-001

2N IP Force main unit – 1 button, HD camera, 10 W loudspeaker

- IP69K
- 1 button
- HD camera
- 10 W loudspeaker
- Control of two electric locks
- Additional switch connection option
- Night vision

Product Description



Part No. 9151101RPW

Axis Part No. 01335-001

2N IP Force main unit – 1 button, pictograms, 10 W loudspeaker, reader ready

- IP69K
- 1 button
- Pictograms
- 10 W loudspeaker
- Control of two electric locks
- Card reader connection option
- Additional switch connection option



Part No. 9151101CHRPW

Axis Part No. 01334-001

Main Unit 2N IP Force – 1 button, HD camera, pictograms, 10 W speaker, reader ready

- IP69K
- 1 button
- HD camera
- Pictograms
- 10 W loudspeaker
- Control of two electric locks
- Card reader connection option
- Additional switch connection option
- Night vision

Product Description



Part No. 9151101KW

Axis Part No. 01338-001

2N IP Force main unit – 1 button, keypad, 10 W loudspeaker

- IP69K
- 1 button
- Keypad
- 10 W loudspeaker
- Control of two electric locks
- Additional switch connection option



Part No. 9151101CHKW

Axis Part No. 01339-001

2N IP Force main unit – 1 button, HD camera, keypad, 10 W loudspeaker

- IP69K
- 1 button
- HD camera
- Keypad
- 10 W loudspeaker
- Control of two electric locks
- Additional switch connection option
- Night vision

Two-button main units



Part No. 9151102RW

Axis Part No. 01341-001

2N IP Force main unit – 2 buttons, 10 W loudspeaker, reader ready

- IP69K
- 2 buttons
- 10 W loudspeaker
- Card reader connection option
- Control of two electric locks
- Additional switch connection option



Part No. 9151102CHRW

Axis Part No. 01340-001

2N IP Force main unit – 2 buttons, HD camera, 10 W loudspeaker, reader ready

- IP69K
- 2 buttons
- HD camera
- 10 W loudspeaker
- Card reader connection option
- Control of two electric locks
- Additional switch connection option
- Night vision



Part No. 9151102-X1

2N IP Force set main unit

- IP69K
- 2 buttons with INFO and SOS labels
- 10 W loudspeaker
- Anti-vandal buttons made of stainless steel

Customization available per request.

Four-button main units



Part No. 9151104W

Axis Part No. 01342-001

2N IP Force main unit – 4 buttons, 10 W loudspeaker

- IP69K
- 4 buttons
- 10 W loudspeaker
- Control of two electric locks
- Additional switch connection option



Part No. 9151104CHW

Axis Part No. 01343-001

2N IP Force main unit – 4 buttons, HD camera, 10 W loudspeaker

- IP69K
- 4 buttons
- 10 W loudspeaker
- Control of two electric locks
- Additional switch connection option
- Night vision

Accessories

Accessories for Installation

2N IP Force is designed for both outdoor and indoor applications and requires no additional roof.

Choose the proper frame and, if necessary, other accessories for your particular installation needs.

All **2N IP Force** units can be used without additional accessories for flush and surface installation, however, the appropriate mounting kit must be used for plasterboard or hollow brick masonry installations.



Part No. 9151001

Axis Part No. 01348-001

Flush mounting box for walls

The box material is stainless steel.



Part No. 9151002

Axis Part No. 01349-001

Flush mounting box for plasterboard

Product Description



Part No. 9151005

Axis Part No. 01351-001

Stand installation spacer

The spacer allows for installation to a height of 120 cm to the top device edge.



Part No. 9151007

Axis Part No. 01550-001

Double mounting spacer

The double spacer allows for double installation at heights of 115 cm and 203 cm to the top device edge.



Part No. 9151006

Axis Part No. 01352-001

Installation adapter (US)



Part No. 9151018

Axis Part No. 01345-001

Security screws

This is a safer alternative to regular screws.

The screw head type is torx with pin (supplied with matching handle).

Extenders



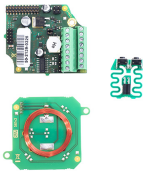
Part No. 9151010

Axis Part No. 01350-001

Additional Switch

Allows you to control another appliance (active output of 12 V DC / max. 600 mA) or such non-critical equipment as lights (passive relay output of 30 V / 1 A for an indefinite time).

It also comes with a tamper switch indicating that the **2N IP Force** front panel is open.



CAUTION

In combination with the **2N IP Force** intercom, this RFID reader does not meet the conditions of the supplementary regulation to the EU Radio Equipment Directive - effective from 1 August 2025. In combination with the **2N IP Verso 2.0** intercom, it meets the requirements.

Refer to [Impacts of the EU Radio Equipment Directive](#) for more details.

Part No. 9151011

Axis Part No. 01344-001

Internal 125 kHz RFID card reader

Supported RFID cards 125 kHz:

- EM4x02
- NXP HiTag2

It also comes with a tamper switch indicating that the **2N IP Force** front panel is open.

Two more switches, two more logical inputs and a Wiegand interface are available.

It is compatible with the **2N IP Force** models with two buttons and with models with pictograms.



CAUTION

In combination with the **2N IP Force** intercom, this RFID reader does not meet the conditions of the supplementary regulation to the EU Radio Equipment Directive - effective from 1 August 2025. In combination with the **2N IP Verso 2.0** intercom, it meets the requirements.

Refer to [Impacts of the EU Radio Equipment Directive](#) for more details.

Part No. 9151031

Axis Part No. 02522-001

Internal 13.56 MHz RFID card reader, NFC

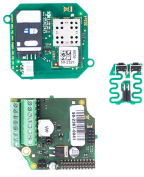
Supported RFID cards 13.56 MHz:

- **ISO14443A** (MIFARE Classic, MIFARE Plus, MIFARE Mini, MIFARE Ultralight, MIFARE DESFire CSN only)
- **PicoPass** (HID iClass CSN, Picopass)
- **FeliCa** (Standard, Lite)
- **ST SR** (SR, SRI, SRIX)
- **My2N**
- **2N PICard**

NFC/HCE preparation.

It also comes with a tamper switch indicating that the **2N IP Force** front panel is open.

Two more switches, two more logical inputs and a Wiegand interface are available.



CAUTION

In combination with the **2N IP Force** intercom, this RFID reader does not meet the conditions of the supplementary regulation to the EU Radio Equipment Directive - effective from 1 August 2025. In combination with the **2N IP Verso 2.0** intercom, it meets the requirements.

Refer to [Impacts of the EU Radio Equipment Directive](#) for more details.

Part No. 9151031S

Axis Part No. 01730-001

Internal secured 13.56 MHz RFID card reader, NFC

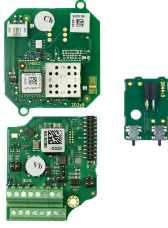
Supported RFID cards 13.56 MHz:

- **ISO14443A** (MIFARE Classic, MIFARE Plus, MIFARE Mini, MIFARE Ultralight, MIFARE DESFire CSN only)
- **PicoPass** (HID iClass CSN, Picopass)
- **FeliCa** (Standard, Lite)
- **ST SR** (SR, SRI, SRIX)
- **HID PAC** (HID SEOS, HID iClass SE, iClass SR, HID MIFARE DESFire with SIO, HID MIFARE Classic with SIO)
- **My2N**
- **2N PICard**

NFC/HCE preparation.

It also comes with a tamper switch indicating that the **2N IP Force** front panel is open.

Two more switches, two more logical inputs and a Wiegand interface are available.



CAUTION

In combination with the **2N IP Force** intercom, this RFID reader does not meet the conditions of the supplementary regulation to the EU Radio Equipment Directive - effective from 1 August 2025. In combination with the **2N IP Verso 2.0** intercom, it meets the requirements.

Refer to [Impacts of the EU Radio Equipment Directive](#) for more details.

Part No. 9151022

Axis Part No. 03228-001

Internal 125 kHz RFID card reader, OSDP

Supported RFID cards 125 kHz:

- EM4x02
- NXP HiTag2

It also comes with a tamper switch indicating that the **2N IP Force** front panel is open.

Two more switches, two more logical inputs and an OSDP interface are available.

It is compatible with the **2N IP Force** models with two buttons and with models with pictograms.



CAUTION

In combination with the **2N IP Force** intercom, this RFID reader does not meet the conditions of the supplementary regulation to the EU Radio Equipment Directive - effective from 1 August 2025. In combination with the **2N IP Verso 2.0** intercom, it meets the requirements.

Refer to [Impacts of the EU Radio Equipment Directive](#) for more details.

Part No. 9151023

Axis Part No. 03229-001

Internal 13.56 MHz RFID card reader, NFC, OSDP

Supported RFID cards 13.56 MHz:

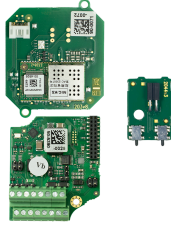
- **ISO14443A** (MIFARE Classic, MIFARE Plus, MIFARE Mini, MIFARE Ultralight, MIFARE DESFire CSN only)
- **PicoPass** (HID iClass CSN, Picopass)
- **FeliCa** (Standard, Lite)
- **ST SR** (SR, SRI, SRIX)
- **My2N**
- **2N PICard**

NFC/HCE preparation.

It also comes with a tamper switch indicating that the **2N IP Force** front panel is open.

Two more switches, two more logical inputs and an OSDP interface are available.

It is compatible with the **2N IP Force** models with two buttons and with models with pictograms.



CAUTION

In combination with the **2N IP Force** intercom, this RFID reader does not meet the conditions of the supplementary regulation to the EU Radio Equipment Directive - effective from 1 August 2025. In combination with the **2N IP Verso 2.0** intercom, it meets the requirements.

Refer to [Impacts of the EU Radio Equipment Directive](#) for more details.

Part No. 9151023S

Axis Part No. 03230-001

Internal secured 13.56 MHz RFID card reader, NFC, OSDP

Supported RFID cards 13.56 MHz:

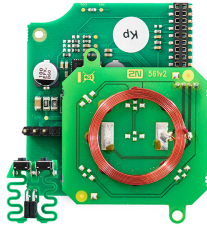
- **ISO14443A** (MIFARE Classic, MIFARE Plus, MIFARE Mini, MIFARE Ultralight, MIFARE DESFire CSN only)
- **PicoPass** (HID iClass CSN, Picopass)
- **FeliCa** (Standard, Lite)
- **ST SR** (SR, SRI, SRIX)
- **HID PAC** (HID SEOS, HID iClass SE, iClass SR, HID MIFARE DESFire with SIO, HID MIFARE Classic with SIO)
- **My2N**
- **2N PICard**

NFC/HCE preparation.

It also comes with a tamper switch indicating that the **2N IP Force** front panel is open.

Two more switches, two more logical inputs and an OSDP interface are available.

It is compatible with the **2N IP Force** models with two buttons and with models with pictograms.



CAUTION

In combination with the **2N IP Force** intercom, this RFID reader does not meet the conditions of the supplementary regulation to the EU Radio Equipment Directive - effective from 1 August 2025. In combination with the **2N IP Verso 2.0** intercom, it meets the requirements.

Refer to [Impacts of the EU Radio Equipment Directive](#) for more details.

Part No. 9151021

Axis Part No. 02338-001

Internal Induction Loop

The internal induction loop transmits sound wirelessly from **2N IP Force** to the hearing aids of the people with hearing disabilities enabling them to hear and perceive sounds better.



Part No. 9159050

Axis Part No. 01391-001

External Induction Loop

The external induction loop transmits sound wirelessly from **2N IP Force** to the hearing aids of the people with hearing disabilities and enables them to hear and perceive sounds better.



Part No. 9159010

Axis Part No. 01386-001

Security Relay

A handy add-on that significantly enhances security. It prevents lock tampering.

To be installed between the protected device from which it is also powered and the lock controlled by it.

Product Description

Part No. 9159011



Axis Part No. 01387-001

Wiegand Isolator

The Wiegand isolator is designed for galvanic isolation of two separately supplied devices interconnected via a Wiegand bus.

The Wiegand isolator protects the interconnected devices against communication errors and/or damage.

Part No. 9155198SET



Axis Part No. 01975-001

Security Package for 2N Devices

The security package provides increased door security.

The safety package includes a safety relay, a protection switch and an I/O module.

Power Supply

Part No. 91378100E (with EU cable)



Part No. 91378100US (with US cable)

Axis Part No. 01403-001

One-port PoE injector

For intercom supply via Ethernet cable where the PoE switch is absent.

Part No. 91341481E (with EU cable)



Part No. 91341481US (with US cable)

Axis Part No. 02520-001

Stabilized 12 V / 2 A power supply

The supply must be used where PoE is not used.

Product Description



Part No. 932928

Axis Part No. 02529-001

12 V transformer

For 230 V mains voltage.

Designed for external supply of electric locks.



Part No. 9159052

Axis Part No. 01393-001

12 V / 1 A power supply for 2N Induction Loop

The external induction loop power supply has 230 V AC input voltage and 12 V DC output voltage.

Licenses



Part No. 9137909

Axis Part No. 01380-001

Gold License

Includes the Enhanced Video, Enhanced Integration and Lift Control licenses.



Part No. 9137910

Axis Part No. 01381-001

InformaCast License



Part No. 9137921

Axis Part No. 03160-001

MS Teams license



TIP

- Refer to the Configuration Manual for 2N IP Intercoms, Subs. [Function Licensing](#) for details.
- Please refer to the local 2N distributor for more accessories and recommendations.

Other accessories



Part No. 9159013

Axis Part No. 02523-001

Departure button

The departure button is connected to the device logic input for opening the door from inside the building.



Part No. 9159012

Axis Part No. 01388-001

Magnetic door contact

Set for installation on a door, enabling the status of door opening to be ascertained. Used where the device is used for door protection, open door detection or forced opening.



Part No. 9134173

Axis Part No. 01384-001

MIFARE RFID chip card, 13.56 Hz

RFID chip card, MIFARE Classic 1k, 13.56 MHz.



Part No. 9134174

Axis Part No. 01385-001

MIFARE RFID chip fob, 13.56 MHz

RFID chip fob, MIFARE Classic 1k, 13.56 MHz.

Product Description

Part No. 9134165E

Axis Part No. 01395-001



EM RFID chip card, 125 Hz

RFID chip card, type EM4100, 125 kHz.

Part No. 9134166E

Axis Part No. 01396-001

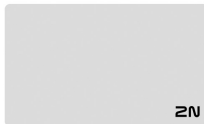


EM RFID chip fob, 125 kHz

RFID chip fob, type EM4100, 125 kHz.

Part No. 11202601

Axis Part No. 02787-001



MIFARE DESFire RFID chip card, 13.56 MHz

RFID chip fob, type MIFARE DESFire EV3 4 K, 13.56 MHz (ISO/IEC14443A).

Suitable for data encryption in **PICard Commander**.

The package includes 10 pieces.

Part No. 11202602

Axis Part No. 02788-001



MIFARE DESFire RFID fob, 13.56 MHz

RFID fob, type MIFARE DESFire EV3 4 K, 13.56 MHz (ISO/IEC14443A).

Suitable for data encryption in **PICard Commander**.

The package includes 10 pieces.

Part No. 9137420E

Axis Part No. 01399-001



External RFID reader, 125 kHz

External RFID card reader connectable to a PC via a USB interface.

Suitable for system administration and adding of EM41xx cards (125 kHz) using the device web configuration or **PICard Commander**.

Product Description



Part No. 9137421E

Axis Part No. 01399-001

External RFID reader, 13.56 MHz + 125 kHz, NFC/HCE

External RFID card reader connectable to a PC via a USB interface.

Suitable for system administration and adding of 13.56 MHz/125 kHz cards and Android devices with NFC/HCE support using the device web configuration or the **Access Commander**.

Suitable for uploading of MIFARE DESFire cards into the **PICard Commander** encryption application.

The following RFID cards can be read:

Supported RFID cards 125 kHz:

- EM4x02
- NXP HiTag2

Supported RFID cards 13.56 MHz:

- **ISO14443A** (MIFARE Classic, MIFARE Plus, MIFARE Mini, MIFARE Ultralight, MIFARE DESFire CSN only)
- **PicoPass** (HID iClass CSN, Picopass)
- **FeliCa** (Standard, Lite)
- **ST SR** (SR, SRI, SRIX)
- **My2N**
- **2N PICard**

The device can also read the 13.56 MHz 2N PICard RFID cards.



Part No. 9137424E

Axis Part No. 01527-001

External secured RFID reader, 13.56 MHz + 125 kHz, NFC/HCE

External secured RFID card reader connectable to a PC via a USB interface.

Suitable for system administration and adding of 13.56 MHz/125 kHz cards and Android devices with NFC/HCE support using the device web configuration or the **Access Commander**.

Suitable for uploading of MIFARE DESFire cards into the **PICard Commander** encryption application.

The following RFID cards can be read:

Supported RFID cards 125 kHz:

- EM4x02
- NXP HiTag2
- HID Prox

Supported RFID cards 13.56 MHz:

- **ISO14443A** (MIFARE Classic, MIFARE Plus, MIFARE Mini, MIFARE Ultralight, MIFARE DESFire CSN only)
- **PicoPass** (HID iClass CSN, Picopass)
- **FeliCa** (Standard, Lite)
- **ST SR** (SR, SRI, SRIX)
- **HID PAC** (HID SEOS, HID iClass SE, iClass SR, HID MIFARE DESFire with SIO, HID MIFARE Classic with SIO)
- **My2N**
- **2N PICard**

Part No. 9137410E

Axis Part No. 01397-001



External IP relay, 1 output

Stand-alone IP relay, which can be controlled from an intercom via HTTP commands and helps control devices from an unlimited distance.

Product Description

Part No. 9159014EU/US/UK

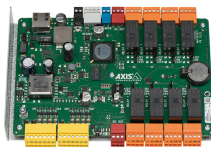


Axis Part No. 01404-001

2N 2Wire (set of 2 adaptors and power source for EU/US/UK)

The 2N 2Wire converter allows you to use the existing 2-wire cabling from your original doorbell or door intercom for connecting any IP device. You do not have to configure anything, all you need is one 2N 2Wire unit at each end of the cable and a power supply connected to at least one of these units. The 2N 2Wire unit then provides PoE power not only to the second converter, but to all of the connected IP end devices.

Part No. 9160501



Axis Part No. 0820-001

AXIS A9188 Network I/O Relay Module

The relay is part of the lift access solution. One relay can control up to 8 floors. Intercom or access unit can be interconnected with up to 8 AXIS A9188 lift relays. The solution is thus suitable for up to 64 floors.

Package Completeness Check

Please check the product delivery before installation. Contents:

1x **2N IP Force**

1x Certificate of ownership

1x Brief Manual

1x installation drilling template

1x Torx 10 / Torx 20 double-ended wrench

1x Frame (in matching color)

Product Description

- 1x Bushings (enclosed):
- 1x big two-hole sealed bushing with nut
 - 1x spare sealing for big bushing for a thick cable, one hole
 - 1 big blank with nut
 - 1x small bushing with nut
 - 1x bushing plug, big size
 - 2x bushing plugs, small size
-

1x Transparent name plate foil

2x Frame fitting

1x spare name tag

1x Grounding terminal with a screw

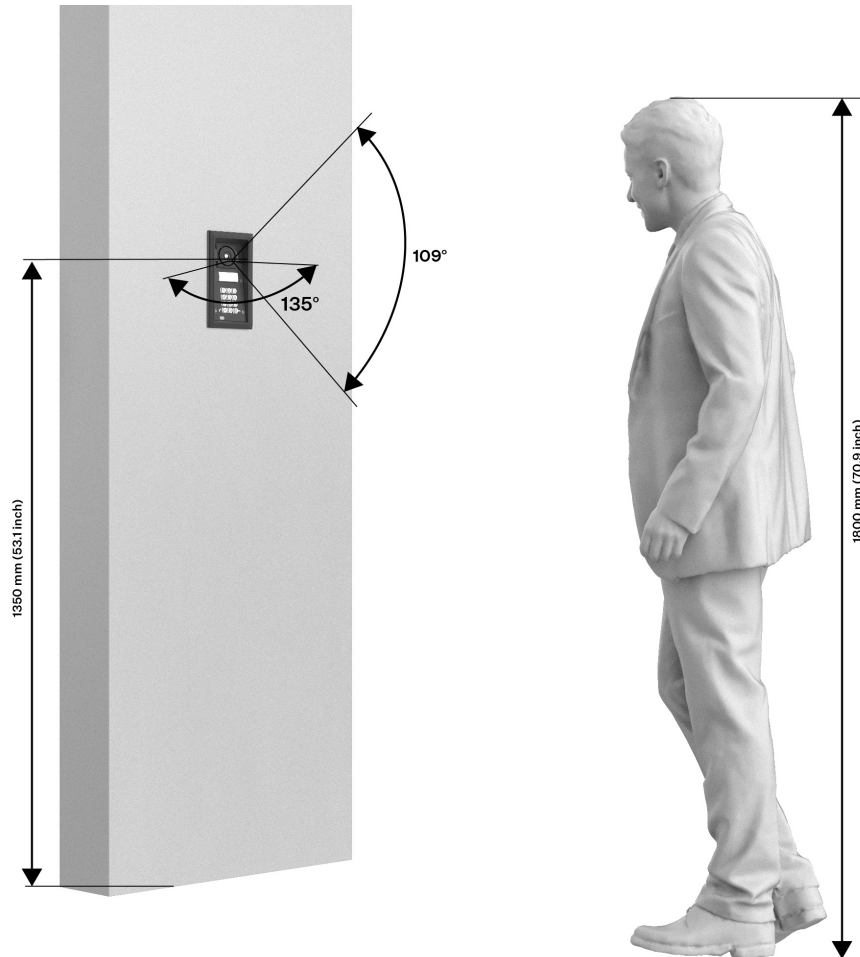
4x 5 x 90 mm screw

4x "Intelligent" dowel (8 x 50 mm)

2x tactile sticker

Installation

For optimum functionality, it is recommended that the device is placed at a height according to the following scheme:



Mechanical Installation

Installation Conditions

Make sure that the following 2N IP Force installation conditions are met.

- There must be enough space for the device installation.
- Make sure that the dowel holes have the required diameter. If the diameters are too large, the dowels may get loose! Use the mounting glue to secure the dowels if necessary.
- Do not use low-quality dowels to avoid their falling out of the wall!
- Make sure that the depths of the dowel holes are accurate! The plugs are 50 mm long and the screws are 90 mm long.
- Stainless steel screws are used for the **2N IP Force** assembly. Other screws than stainless steel ones corrode soon and may aesthetically deteriorate the surrounding environment!
- Before starting the mechanical installation on a selected place, make sure carefully that the preparations associated with it (drilling, wall cutting) cannot damage the electrical, gas, water and other existing wires and pipes.

Installation

- The device is not designed for environments with increased vibrations such as means of transport, machine rooms and so on.
- The device may not be exposed to aggressive gas, acid vapors, solvents, etc.
- The device is not intended for direct connection into the Internet/WAN. The device must be connected to the Internet/WAN via a separating active network element (switch/router).
- Having removed the front panel, make sure that no dirt gets inside the product, especially onto the sealing surface and microphone wave guides.



NOTE

The microphone sound guides are normally loose after the front panel is removed! The screw is only used as a fall-out protection during installation.

- Avoid strong electromagnetic radiation on the installation site.
- Make sure that the VoIP connection is configured properly according to the SIP and other VoIP recommendations.



WARNING

Be sure to keep strictly the hole dimensions while mounting the device into classic bricks without the flush mounting box as shown in the picture with dimensions.



CAUTION

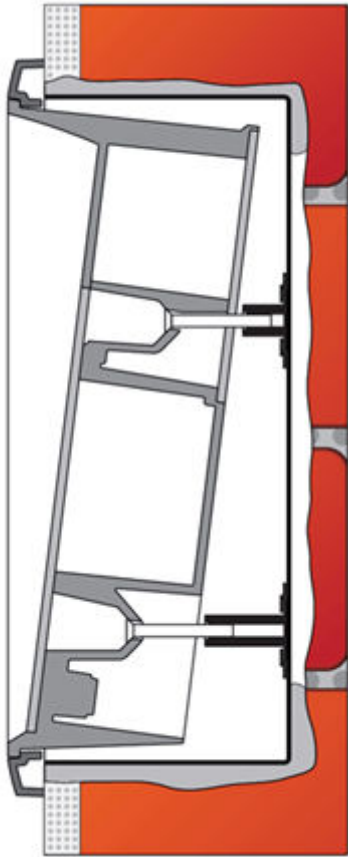
- When the proper installation instructions are not met, water might get in and destroy the electronics. As the device circuits are constantly under voltage water leakage causes electrochemical reaction. The manufacturer's warranty shall be void for products damaged in this way!
- The warranty does not apply to the product defects and failures arisen as a result of improper installation (in contradiction herewith). The manufacturer is neither liable for damage caused by theft within an area that is accessible after the attached electric lock is switched on. The product is not designed as a burglar protection device except when used in combination with a standard lock, which has the security function.
- Exceeding the allowed operating temperature may not affect the device immediately but leads to premature ageing and lower reliability. For the acceptable range of operating temperatures and relative humidity values refer to [S. Technical Parameters \(p. 96\)](#).
- Any intentional mechanical damage to the device (drilling, main unit tampering, etc.) results in a loss of warranty.
- The device installation and setting should only be performed by professionally qualified persons.

Installation Tips

- The recommended height is 135 cm for standard installations (100–120 cm for disabled persons) from the floor to the device camera level. The installation heights may vary depending on the device use.
- The mounting box can be purchased in advance. Thus, a building company can be commissioned to do the rough work. The mounting box also helps you put your device exactly in the vertical position (with a max deviation of 2 ° while walling in).

Flush Mounting

Flush mounting – into classic masonry



What you need for mounting:

- **2N IP Force**
- a properly cut hole as instructed in the box package (131 x 222 x 82 mm)
- flush mounting box for walls (9151001, 01348-001)

If you use the brick flush mounting box, follow the instructions below:

1. Make a hole using the template. Suppose that all the required cables have been carried into the hole.
2. Put the flush mounting box inside for testing purposes to make sure that the hole is deep enough and the uneven hole edge is perfectly covered with the frame.
3. If the hole is perfect, wall in the flush mounting box.
4. Remove the front panel from the device.
5. Select the holes for cable supply. Insert the included blanks into the other holes. Apply the cable bushings or a suitable sealant to prevent penetration of insects or water. You can also insert the small bushing in the device bottom hole.
6. Attach the frame to the device.
7. Place the device into the flush mounting box while introducing the cables. Leave some of the cables inside the device as a reserve and keep the rest under the device bottom.

8. Insert the supplied screws in the side mounting holes making sure that they penetrate into the flush mounting box nuts. Tighten all the screws properly.



WARNING

Keep the maximum tightening torque of 1.5 Nm. Be careful, the screw tightening sequence may affect the device position.

9. It is recommended that the frame – wall gap is sealed with silicone or another sealant. This prevents water leakage behind the device.

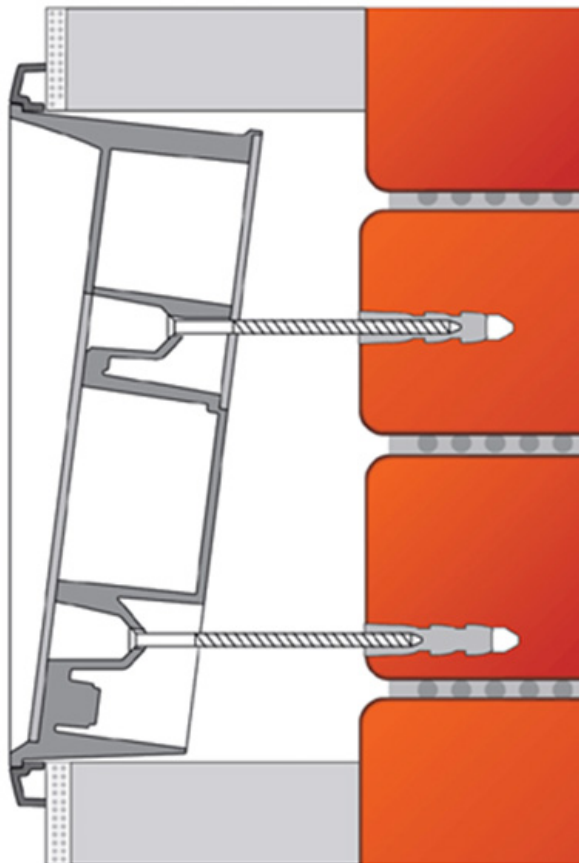
Do not complete mounting until you have finished electrical installation.



TIP

- While flush mounting, pull the cables through the device back hole. A reserve cable length can be left behind the device.
- If the cables cannot be cut in the wall deep enough, you can use a smaller hole on the device bottom.

Flush mounting – into insulated facade



What you need for mounting:

- **2N IP Force**
- a properly cut hole as instructed in the box package (135 x 243,5 x 85 mm)
- longer screws (depending on the thermal insulation thickness)

1. Cut out the thermal insulation layer using the template (the same as for classic brick wall). Suppose that all the required cables have been carried into the hole.
2. Put the device inside for testing purposes to make sure that the hole is deep enough and the uneven hole edge is perfectly covered with the frame.
3. Remove the front panel from the device.
4. Select the holes for cable supply. Insert the included blanks into the other holes. Apply the cable bushings or a suitable sealant to prevent penetration of insects or water. You can also insert the small bushing in the device bottom hole.
5. Attach the frame to the device.
6. Place the device into the flush mounting box while introducing the cables. Leave some of the cables inside the device as a reserve and keep the rest under the device bottom.
7. Insert the supplied screws in the side mounting holes making sure that they penetrate into the flush mounting box nuts. Tighten all the screws properly.



WARNING

Keep the maximum tightening torque of 1.5 Nm. Be careful, the screw tightening sequence may affect the device position.

8. It is recommended that the frame – wall gap is sealed with silicone or another sealant. This prevents water leakage behind the device.

Do not complete mounting until you have finished electrical installation.



CAUTION

- The hole depth depends on the insulation layer thickness. If the insulation layer is rather thick, you may need longer screws! If there are hollow bricks under the insulation, make sure that your screws pass through the whole dowel (50 mm)! Otherwise, the dowel does not hold in a hollow brick.
- Make sure that the dowel holes have the required diameter. If the diameter is too large, the dowels may get loose! Use the mounting glue to secure the dowels if necessary.
- Make sure that the depths of the dowel holes are accurate! The dowel length is 50 mm and the screw length is 90 mm.

Flush installation – in a hollow brick

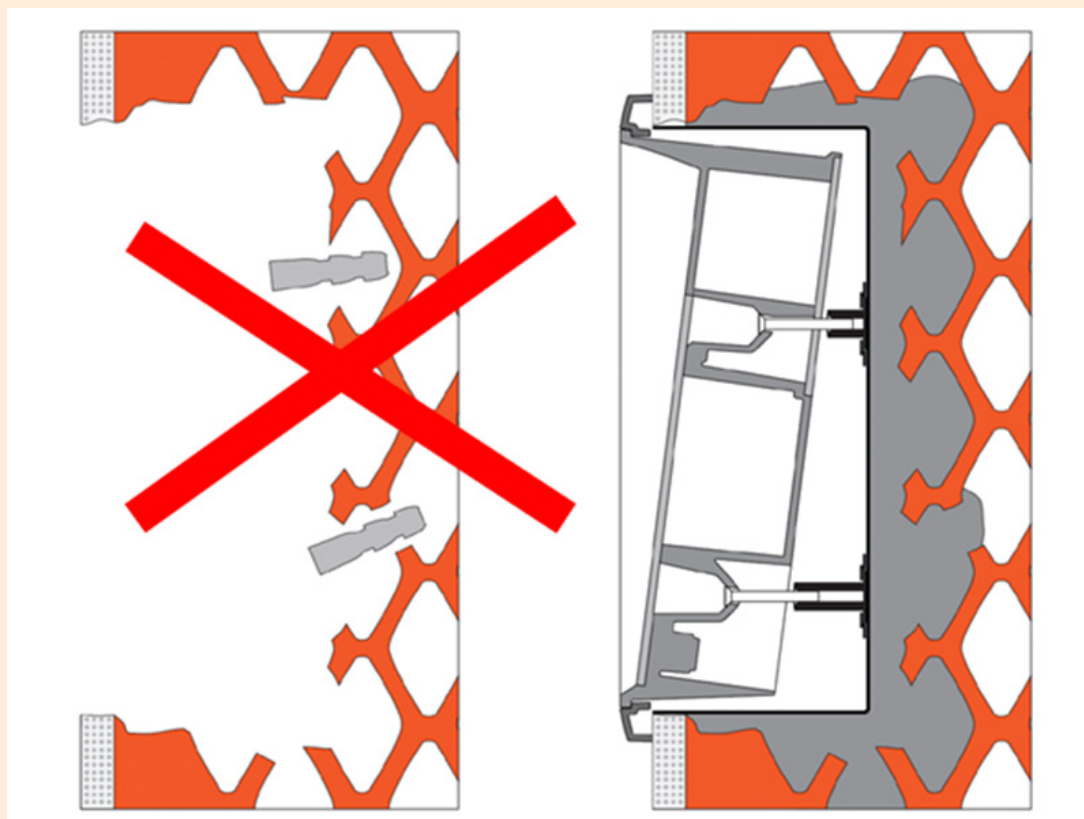
What you need for mounting:

- **2N IP Force**
- a properly cut hole as instructed in the box package (131 x 222 x 82 mm)
- flush mounting box for walls (9151001, 01348-001)



WARNING

Note that the external side of the bricks gets damaged by cutting and the dowels cannot practically be fixed into the thin internal part of the bricks. Therefore, use the wall flush mounting box and follow the instructions for this box.



If you use the brick flush mounting box, follow the instructions below:

1. Make a hole using the template. Suppose that all the required cables have been carried into the hole.
2. Put the flush mounting box inside for testing purposes to make sure that the hole is deep enough and the uneven hole edge is perfectly covered with the frame.
3. If the hole is perfect, wall in the flush mounting box.
4. Remove the front panel from the device.
5. Select the holes for cable supply. Insert the included blanks into the other holes. Apply the cable bushings or a suitable sealant to prevent penetration of insects or water. You can also insert the small bushing in the device bottom hole.
6. Attach the frame to the device.
7. Place the device into the flush mounting box while introducing the cables. Leave some of the cables inside the device as a reserve and keep the rest under the device bottom.
8. Insert the supplied screws in the side mounting holes making sure that they penetrate into the flush mounting box nuts. Tighten all the screws properly.



WARNING

Keep the maximum tightening torque of 1.5 Nm. Be careful, the screw tightening sequence may affect the device position.

9. It is recommended that the frame – wall gap is sealed with silicone or another sealant. This prevents water leakage behind the device.

Do not complete mounting until you have finished electrical installation.

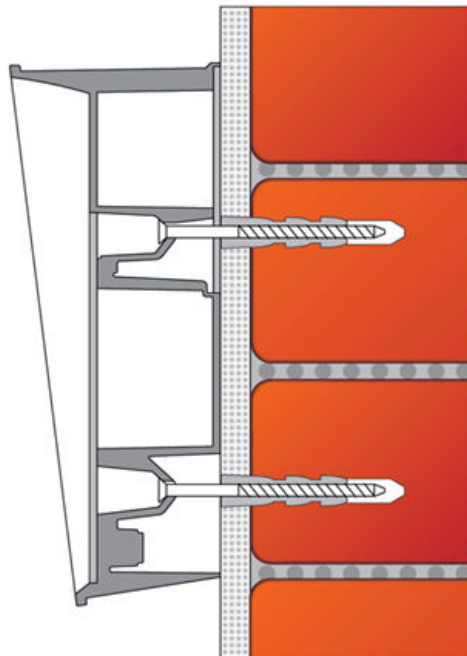
Flush mounting – into plasterboard

What you need for mounting:

- **2N IP Force**
- a properly cut hole as instructed in the box package (116 x 233 x 78 mm)
- flush mounting box for plasterboards (9151002, 01349-001)

Use the flush mounting box for plasterboards and follow the instructions for this box.

Surface Installation



What you need for mounting:

- **2N IP Force** (the frame is not used)



WARNING

Eliminate the risk of personal injury! Surface installation 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!



CAUTION

- If the device is installed in locations with an increased risk of damage (e.g., in public garages or in areas prone to vandalism), replace the supplied dowels and screws with steel anchoring elements.
- Be sure to insert plugs into unused bushing holes to avoid water leakage during facade cleaning, for example. Never leave the holes open for even a short time (one day delay between mounting and cable connection, e.g.).

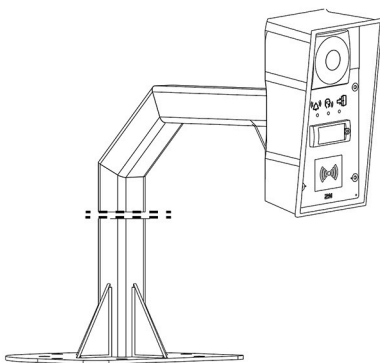


TIP

Download the [drilling template](#) from 2N.com.

1. Select position with respect to the supply cables. Where the cables are installed inside a structure or wall, use the hole at the device bottom.
2. Drill holes of the depth of 70 mm for dowels in the wall as shown in the figure. Push or hammer the enclosed dowels into the drilled holes. Use some suitable building adhesive if the dowels are too loose. Use fixing elements of your own for steel structure surface mounting (metric screws + nuts, e.g.).
3. Remove the front panel from the device.
4. Select the holes for cable supply. Select and mount the bushings depending on the cables: 2-hole bushing or 1-hole bushing or both. Insert the included blanks into the other holes.
5. Put the device on the wall/structure while introducing cables inside. Leave some of the cables inside as a reserve. Insert the plugs in the unused bushings and tighten the bushing nuts carefully.
6. Do not complete mounting until you have finished electrical installation – refer to Mounting Completion. Where cables lead along the surface, use the bushings included in the delivery.

Stand Installation



What you need for mounting:

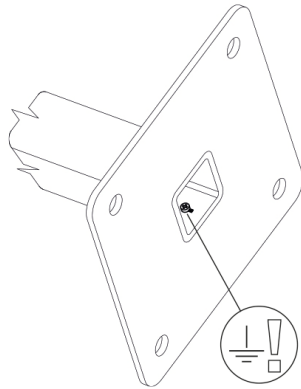
- **2N IP Force**
- stand installation spacer (9151005, 01351-001)



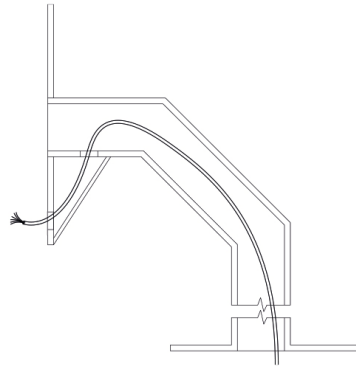
CAUTION

Remember to fit the stand to the base thoroughly especially if there is a risk of vandalism (public garages, etc.). Steel fitting elements are recommended.

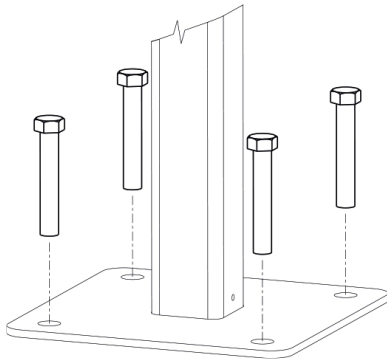
1.



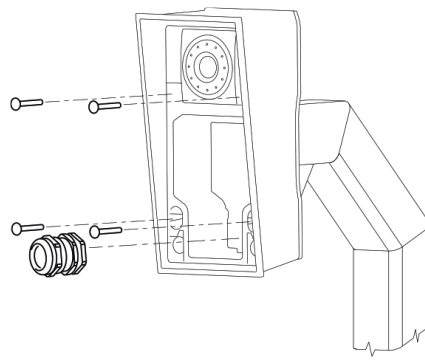
2.



3.



4.



1. Connect grounding.
2. Pull the cable through the stand.
3. Fit the stand to the base. Refer to the base drilling template for the dimensions of the fitting elements. The screws are not included in the package. Use screws of your own according to the type of surface.
4. Use a cable bushing for the **2N IP Force** cable feed-out!

Use of Cable Bushings

The cable bushings are designed for the following cables:

- big bushing: for two cables of the diameter of 5–6 mm (UTP cable), or, upon insert replacement, for one thick cable/tube of the diameter of up to 14 mm
- small bushing: for one cable of the diameter of 5–8 mm



TIP

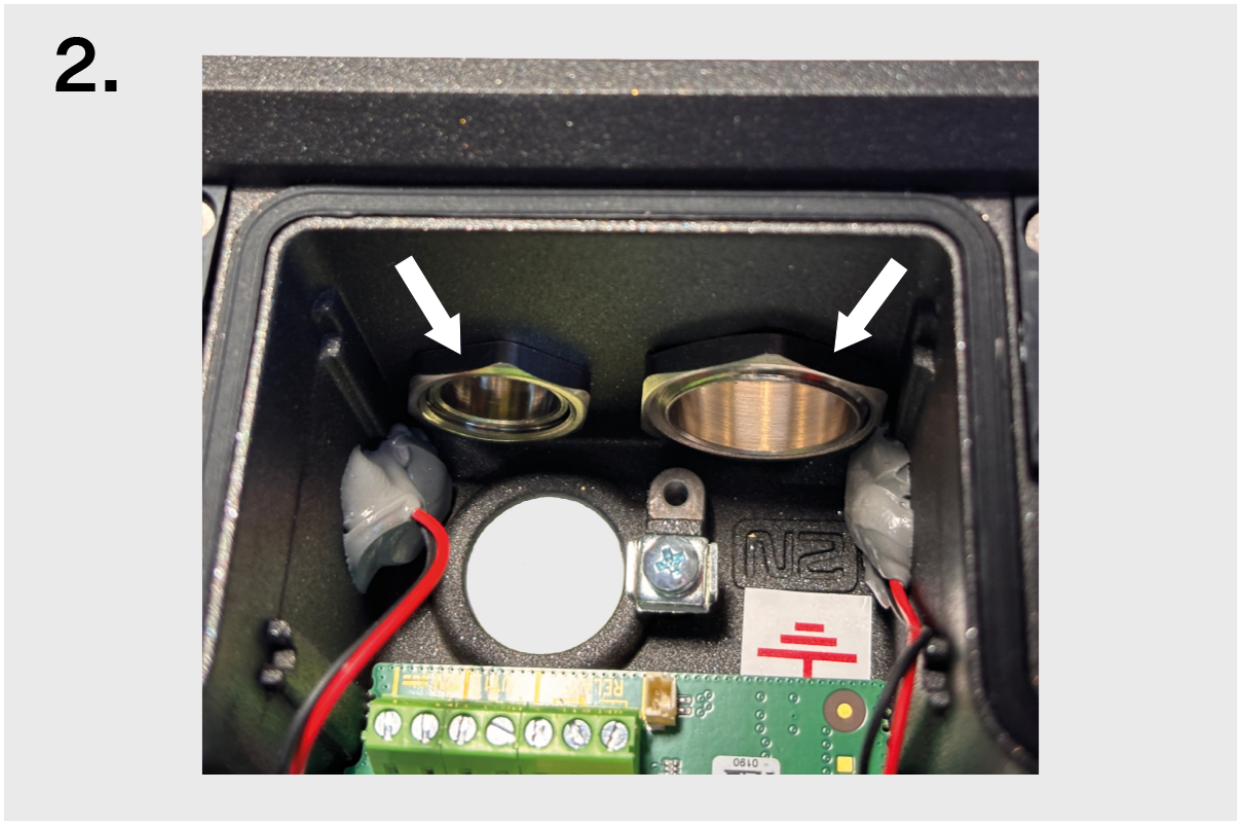
Even a LAN cable including the RJ-45 connector can go through the big bushing. See below for instructions.

How to Pull a RJ-45 Terminated Cable through a Bushing

1. The cable wiring holes are located on the bottom of the device.

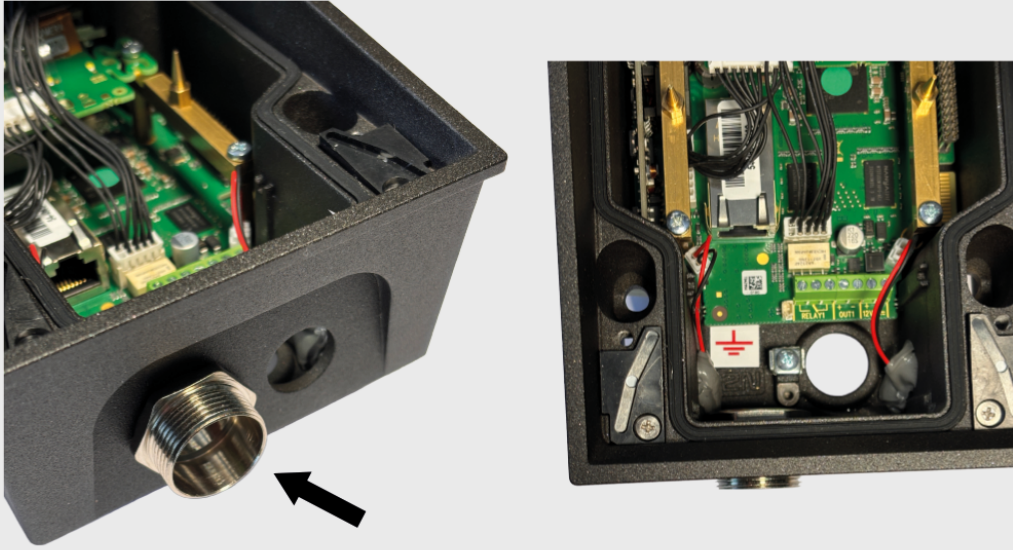


2. Place the nuts on the inside of the holes.



3. Screw on and tighten the bushing.

3.



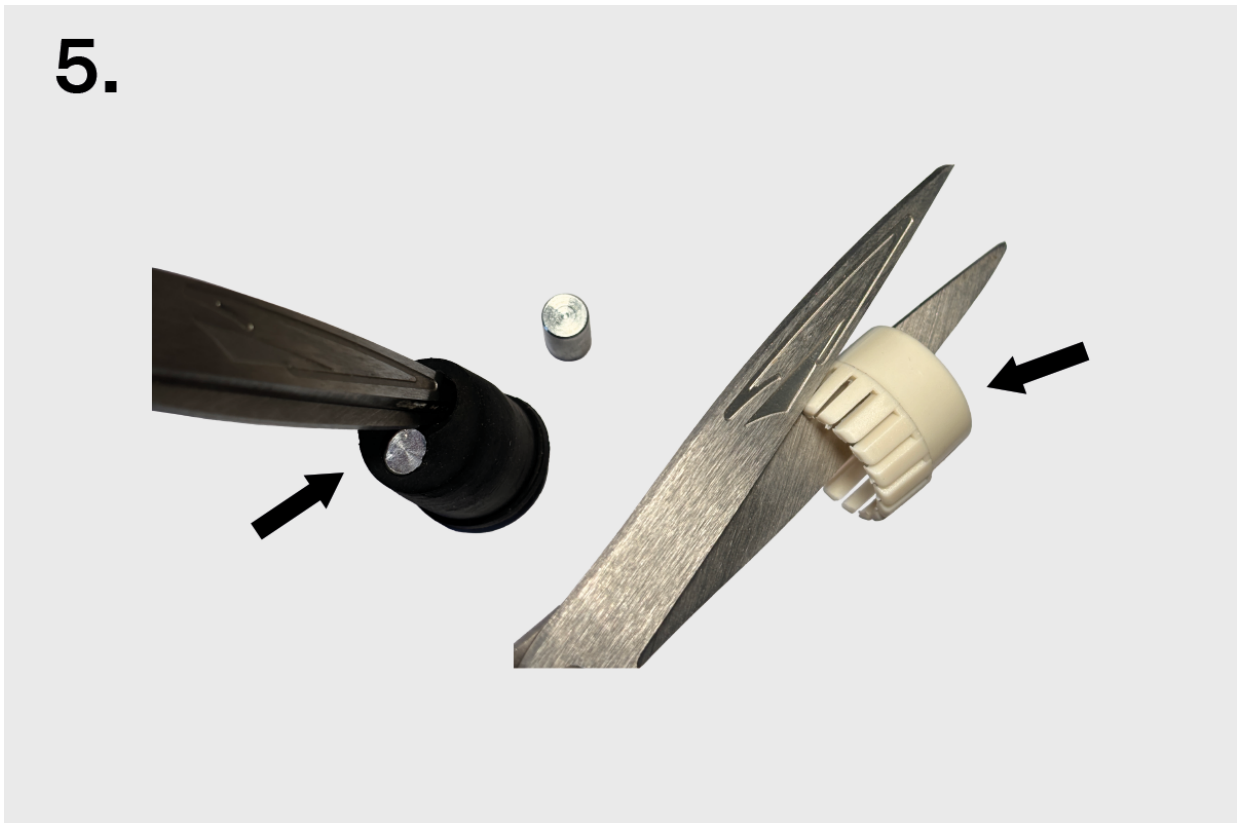
4. Screw on and tighten the blank.

4.

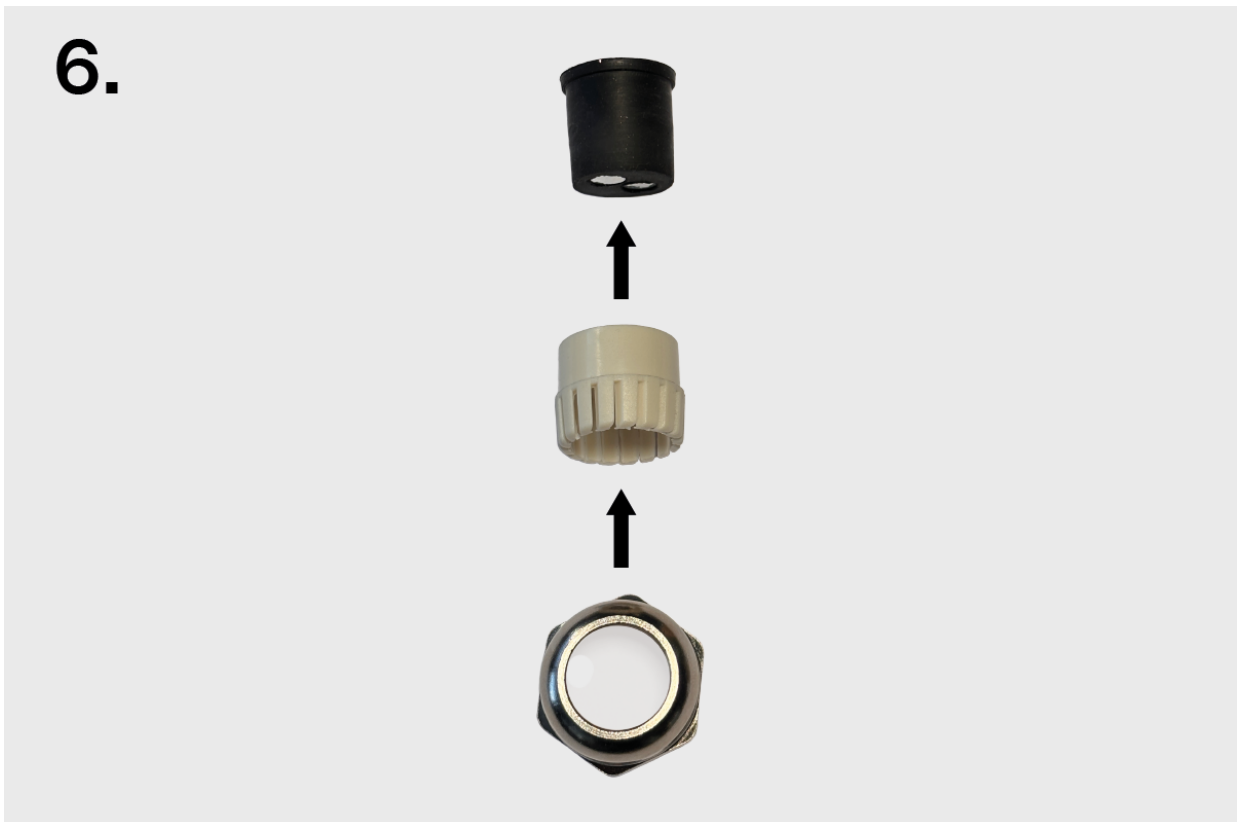


Installation

5. Remove the necessary number of cable glands from the seal. Place the nuts on the inside of the holes. Cut the case as shown.

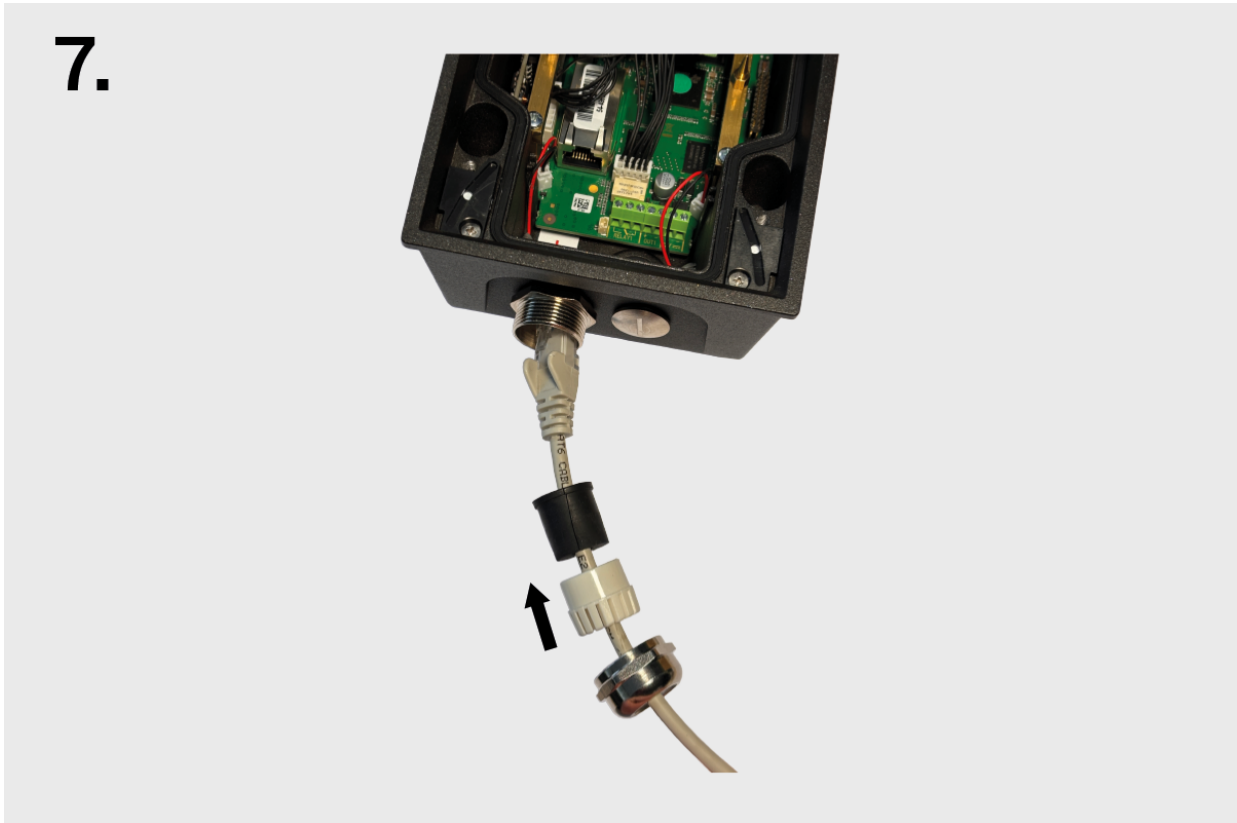


6. To ensure tightness, follow the correct order and orientation of the case, seal and nut.



Installation

7. Attach the bushing nut, case and seal to the cable.

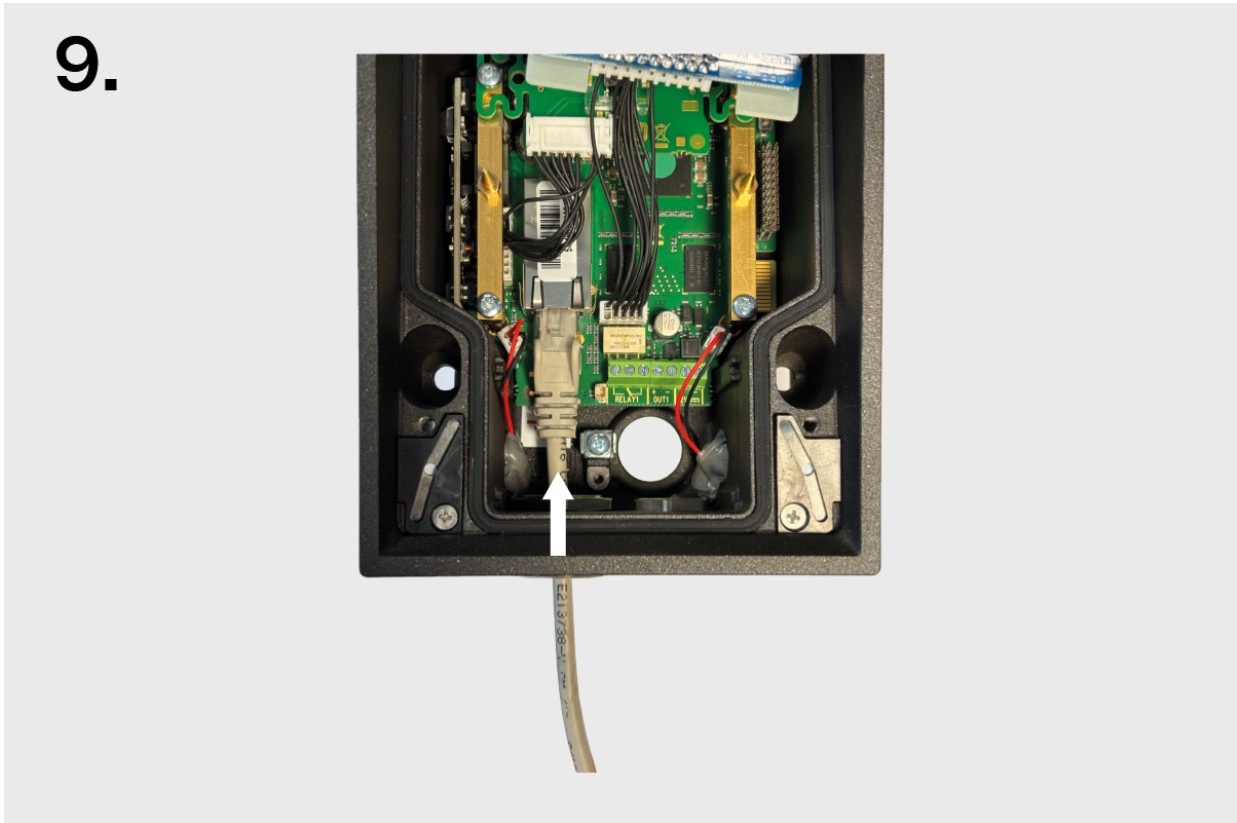


8. Pull the cable end through the bushing body into the intercom.

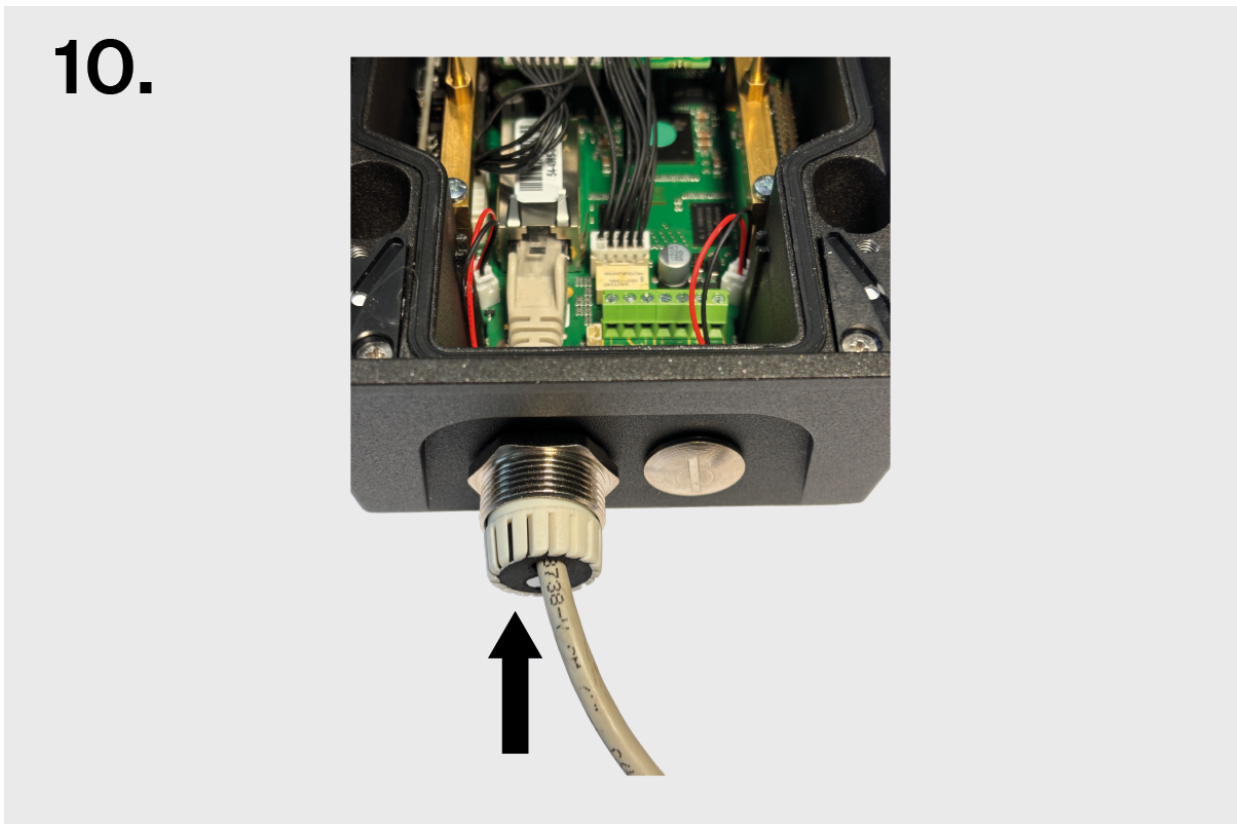


Installation

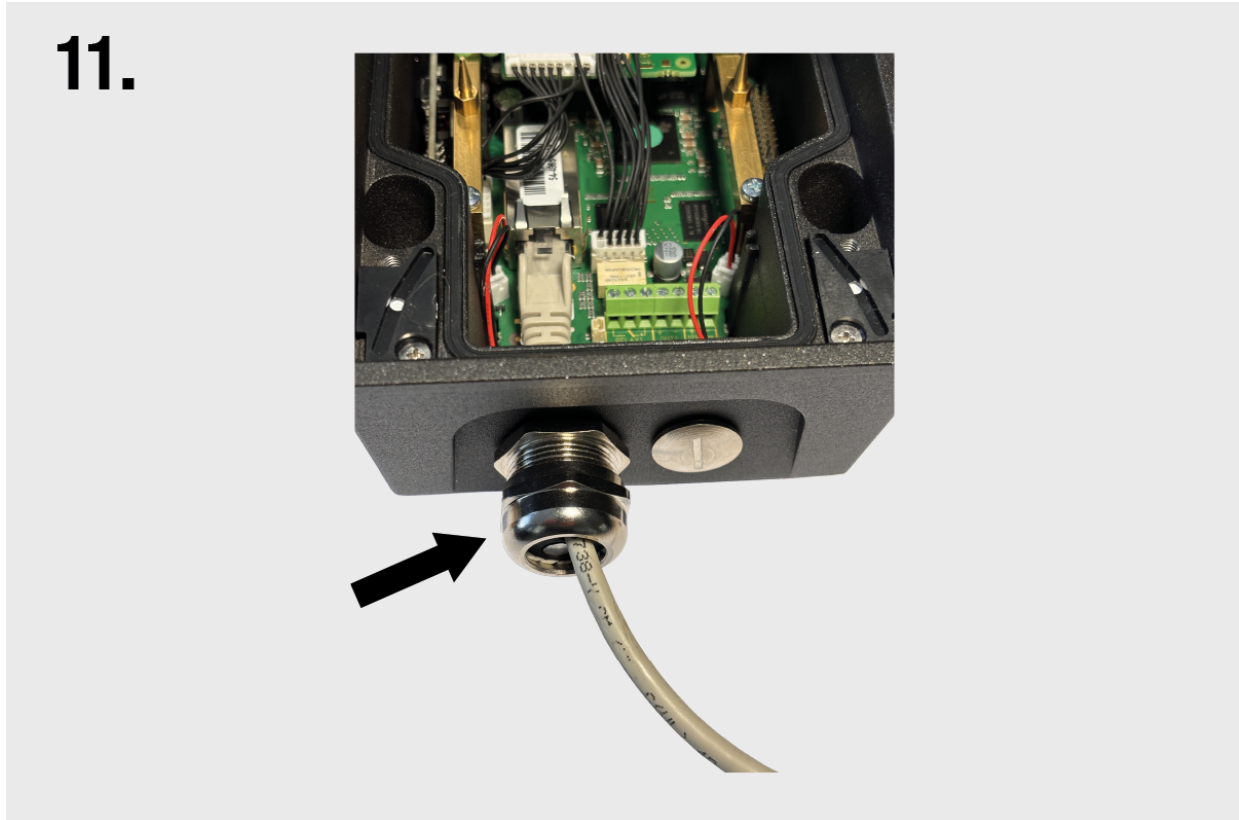
9. Snap the cable end into the motherboard connector.



10. Move the sealing including the case along the cable as far as the bushing body.



11. Screw on and tighten the nut.



Electric Installation

Power Supply

2N IP Force can be fed either directly from the LAN if equipped with PoE 802.3af (Class 0, max. 12,95 W) supporting network elements or from an external 12 V $\pm 15\%$ / 2 A DC power supply.



CAUTION

- The device must be part of the electrical system of the building.
- The external power supply should comply with PS2/LPS.

PoE Supply

2N IP Force is compatible with the PoE 802.3af (Class 0, max. 12,95 W) technology (Class 0, max. 12.95 W) and can be supplied directly from the LAN via compatible network elements. If your LAN does not support this technology, insert a PoE injector, between **2N IP Force** and the nearest network element.

External Power Supply

Use a SELV supply 12 V $\pm 15\%$ dimensioned to the current consumption feeding of at least 4A to make your device work reliably.



CAUTION

Make sure that the wires are firmly attached to the terminal to avoid any free contact.

Adapter Connection (1341481, 02520-001)

The white wire at the end of the adapter carries the positive charge (+), the black wire carries the negative charge (-).

Combined Power Supply

LAN Connection

2N IP Force is connected to the LAN by inserting a SSTP cable (Cat-5e or higher) terminated with an RJ-45 plug into the marked LAN connector on the device (connector X11). As the device is equipped with the Auto-MDIX function, you can use either the straight or crossed cable version.

This device must be deployed within a network infrastructure that provides adequate protection against Denial-of-Service (DoS) attacks and similar network-based threats. The device does not include built-in protection against high-volume or malicious traffic and relies on the surrounding network environment—such as firewalls, intrusion prevention systems, or rate limiting—for defense. Failure to implement appropriate network security measures may lead to service degradation or unavailability. The equipment's user documentation shall contain a [description of all exposed network interfaces and all services exposed via network interfaces](#), which are delivered as part of the factory default state.



WARNING

This device cannot be connected directly to telecom lines (or public wireless networks) of any telecom service providers (i.e. mobile providers, landline providers or Internet providers). A router has to be used for the device Internet connection.



CAUTION

- We recommend the use of a LAN [surge protection](#) (p. 52).
- We recommend the use of a shielded SSTP Ethernet cable.

Board Versions

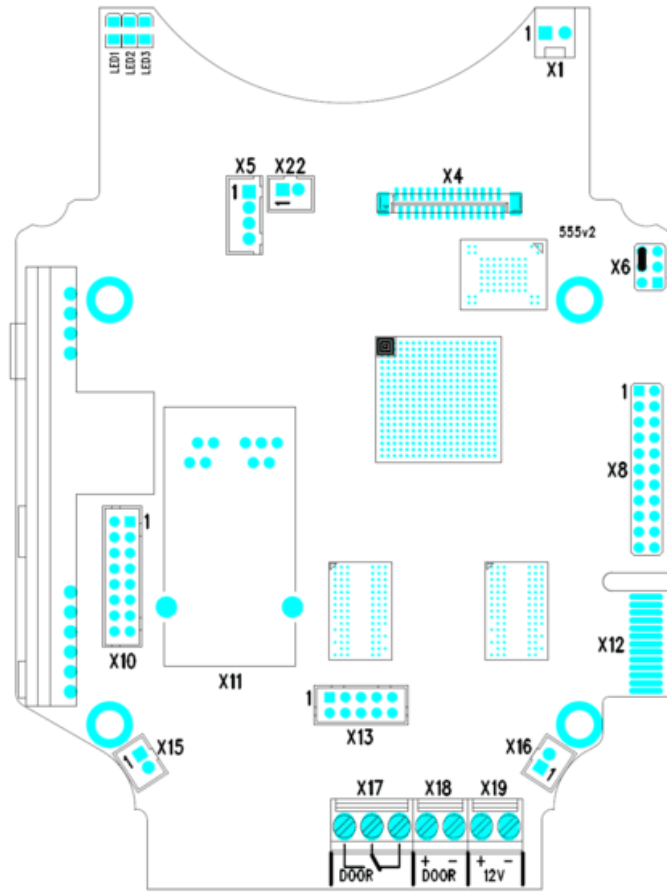
This subsection includes diagrams showing the main PCB connectors for different board versions.

The figures below show the layout of connectors on the printed circuit board (PCB). Cables, accessories and other system components are connected to connectors X1 through X22 shown in the figures.

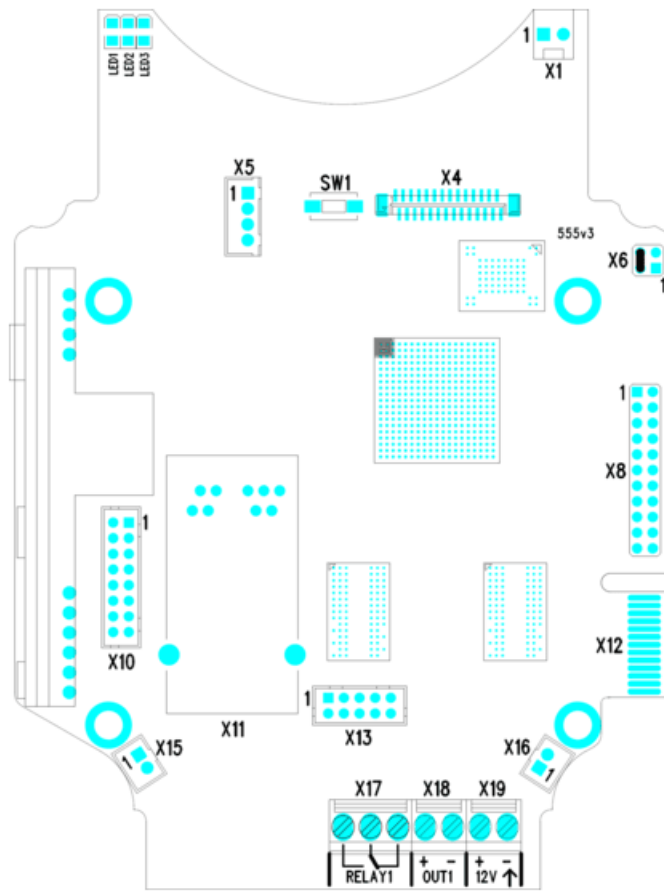
Connector	Description
X1	Speaker
X2	Button 2
X3	Button 3

Connector	Description
X4	Camera module
X5	Button 1
SW1	Reset button (PCB version 555v3 and higher)
X6	Configuration jumpers
X7	Induction loop output Connector type JST SHR-02V-S
X8	Extending module (RFID card reader or additional switch)
X10	Buttons 1 through 4
X11	LAN connection
X12	Servicing connector
X13	Keypad module
X15	Left-hand microphone
X16	Right-hand microphone
X17	Relay NO and NC contacts max. 30 V / 1 A AC/DC. Used for connection of non-critical devices only (lights, e.g.).
X18	Switched output 8 to 12 V DC depending on the power supply (PoE: 10 V; adapter: supply voltage minus 2 V), max. 600 mA.
X19	12 V \pm 15 % / 2 A DC power input
LED1/2	System status indicators are displayed
LED3	LAN connection activity

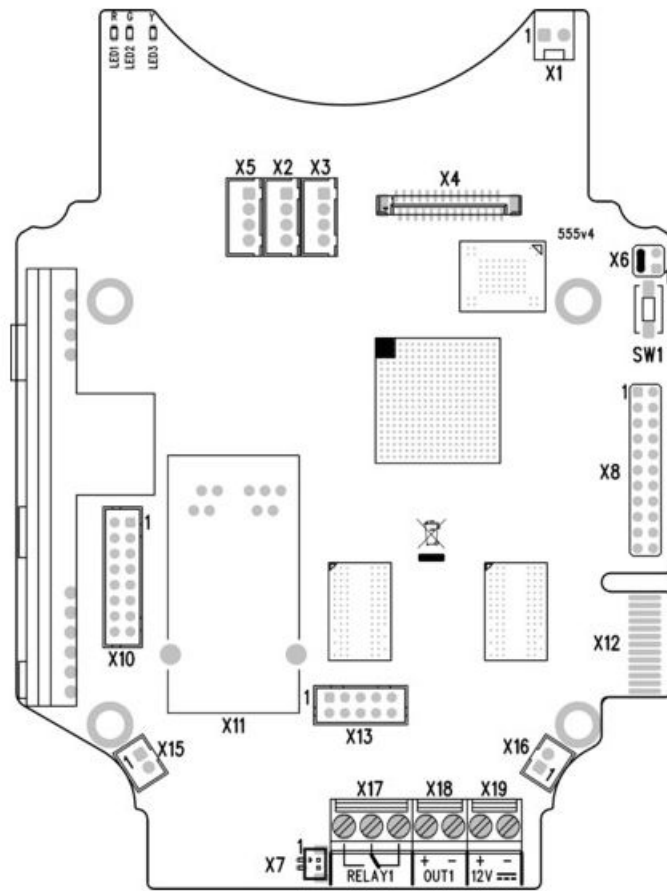
2N IP Force – version 555v2



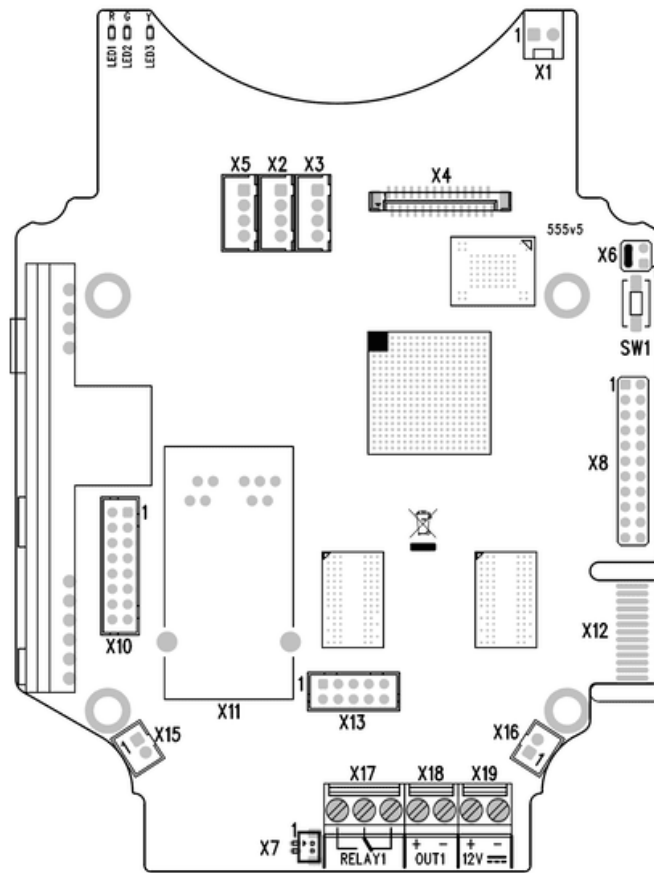
2N IP Force – version 555v3



2N IP Force – version 555v4



2N IP Force – version 555v5



Available switches

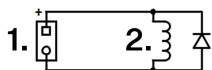
Location	Name	Description
Main unit	RELAY1	<p>Passive switch:</p> <ul style="list-style-type: none"> • NO contact • max. 30 V / 1 A AC/DC • only used to connect non-critical devices (e.g. lights)
	OUTPUT1	<p>Active switch output:</p> <ul style="list-style-type: none"> • 8 – 12 V DC depending on the power supply, max. 600 mA • PoE: 11.6 V • adapter: source voltage -0.4 V

Location	Name	Description
Additional switch (9151010, 01350-001)	RELAY2	<p>Passive switch:</p> <ul style="list-style-type: none"> • make and break contact • max. 30 V / 1 A AC/DC • only used to connect non-critical devices (e.g. lights)
	OUTPUT2	<p>Active switch output:</p> <ul style="list-style-type: none"> • 8 – 12 V DC depending on the power supply, max. 600 mA <ul style="list-style-type: none"> • PoE: 11.6 V • adapter: source voltage -0.4 V
Internal RFID card readers	RELAY 2	<p>Passive switch:</p> <ul style="list-style-type: none"> • NO contact • max. 30 V / 1 A AC/DC
	OUTPUT 2	<p>Active switch output:</p> <ul style="list-style-type: none"> • 9.8 – 13.8 V DC depending on the power supply, max. 400 mA <ul style="list-style-type: none"> • PoE: 11.6 V • adapter: source voltage -0.4 V



DANGER

If a coil containing device is connected, e.g. relays/electromagnetic locks, it is necessary to protect the device output against voltage peak while switching off the induction load. For this way of protection we recommend a 1 A / 1000 V diode (e.g., 1N4007, 1N5407, 1N5408) connected antiparallel to the device.



1. Terminals
2. Coil. e.g. relay or electromagnetic lock



WARNING

The 12V output is used for lock connection. If the device is installed in a location where there is a danger of unauthorized access (building front, e.g.), we strongly recommend the use of the 2N Security Relay (9159010, 01386-001) to ensure the maximum installation security.

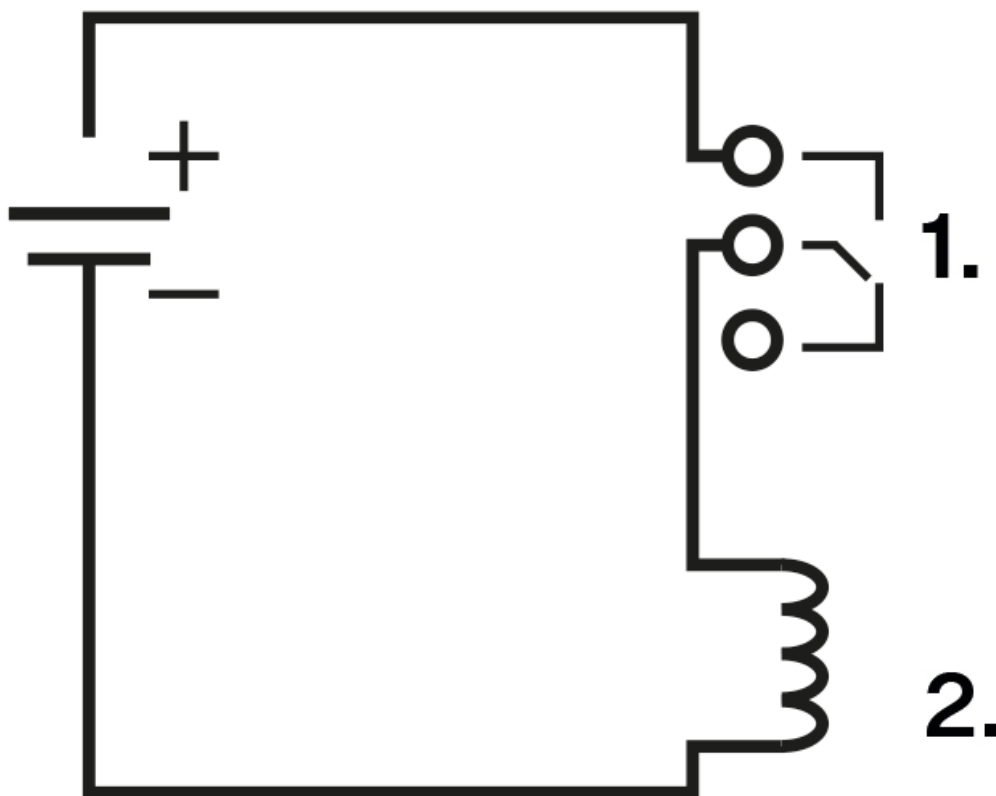
Relay Terminal Wiring Diagrams

It is possible to connect a device to the **2N IP Force** relay terminals to be controlled by this relay, e.g. an electric/electromechanical door lock.

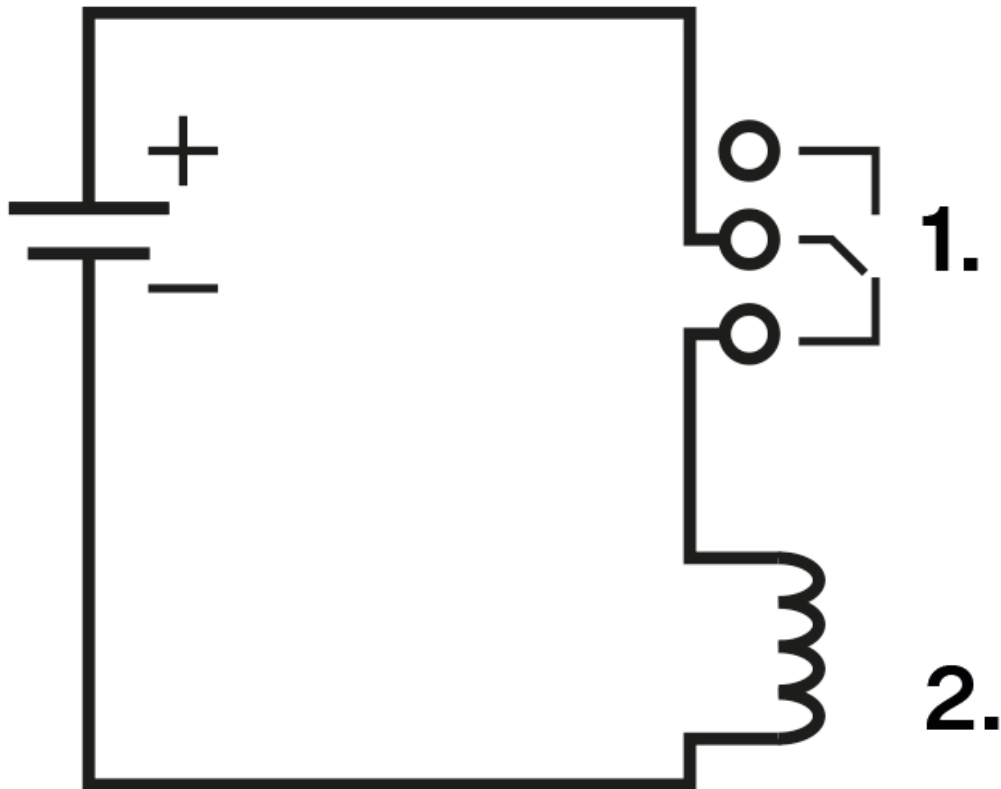
The elements are designated as follows in the diagrams below:

- 1. Device relay
- 2. Controlled device

Wiring diagram for closing the electric circuit of the controlled device



Wiring diagram for opening the electric circuit of the controlled device



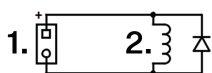
Electric Lock Connection

2N IP Force is equipped with a galvanically isolated relay switch with a connected normally open and normally closed contact (terminals X17, max. 30 V / 1 A AC/DC) and a switched output of 9 to 13 V DC depending on the power supply (PoE: 9 V; adapter: source voltage minus 1 V), max. 600 mA (terminals X18), to which a conventional electric lock or another suitable appliance can be connected.



DANGER

If a coil containing device is connected, e.g. relays/electromagnetic locks, it is necessary to protect the device output against voltage peak while switching off the induction load. For this way of protection we recommend a 1 A / 1000 V diode (e.g., 1N4007, 1N5407, 1N5408) connected antiparallel to the device.



- 1. Terminals
- 2. Coil. e.g. relay or electromagnetic lock

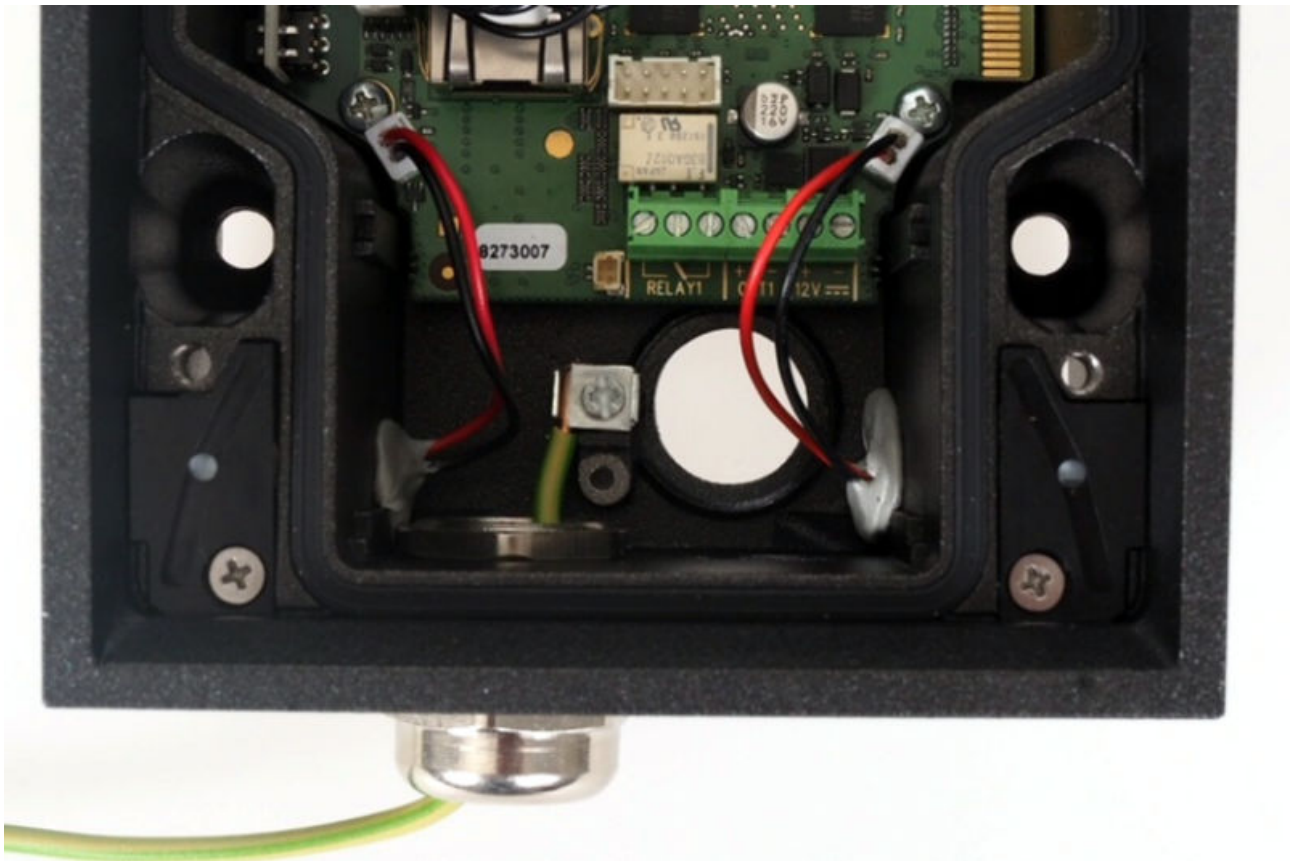


NOTE

Devices with PCB version 555v3 and higher provides independent control of 12 V switched output (terminal block X18) and relay switch (terminal block X17). Devices with PCB version 555v2 have both outputs switched simultaneously.

Grounding

To increase the static electricity resistance, you need a cable of the minimum cross-section of 4 mm². Connect the cable to the terminal in the bottom part of the device as shown in the figure below. The terminal is included in the delivery.



Overvoltage Protection

The 2N device cables have to be protected against atmospheric overvoltage caused by external causes (lightning, e.g.). A surge can damage a device installed outside/inside the building if the wires are unprotected.

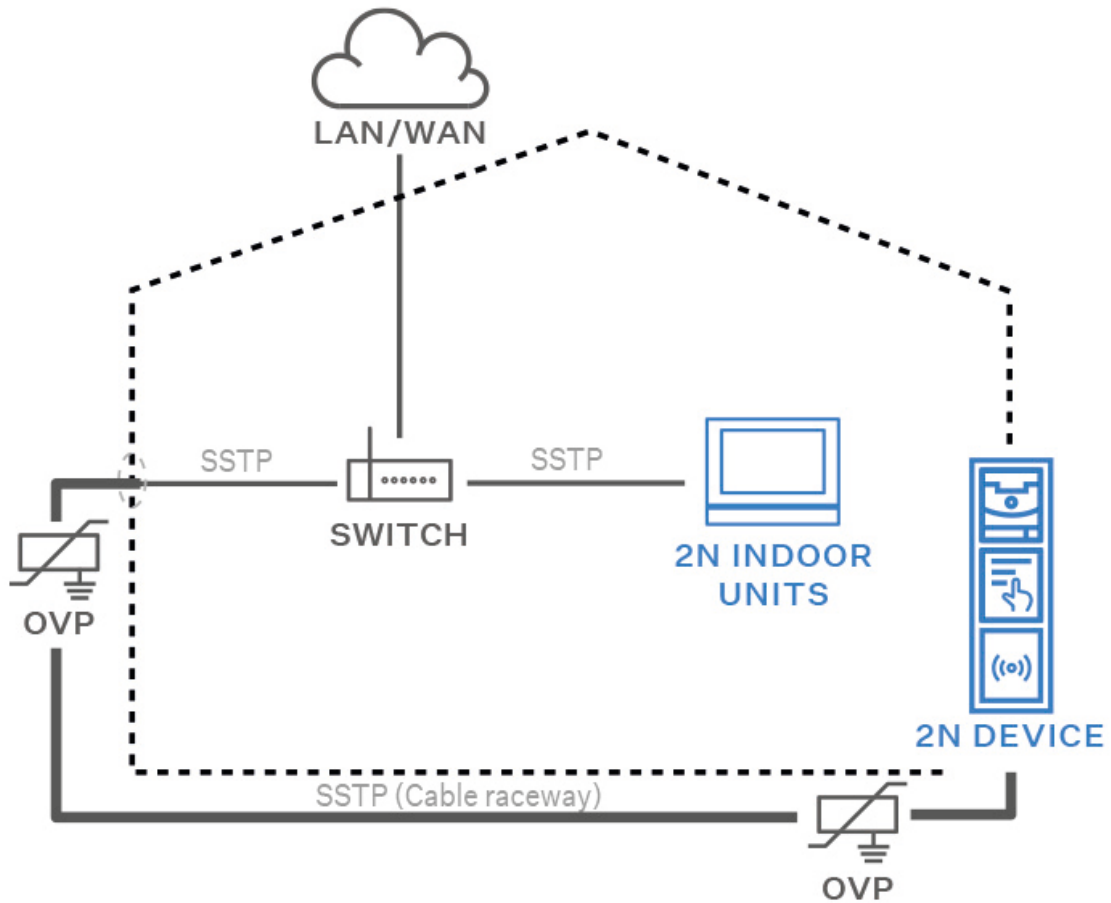
Therefore, we recommend that additional overvoltage protectors (OVP) be installed on the outer walls or roof for all the wires leading outside the building. Keep the following instructions while installing overvoltage protectors:

- Make sure that the overvoltage protector is installed as close as possible to the device installed outside the building.
- Make sure that the overvoltage protector is installed as close as possible to the device installed on an external part of the building.

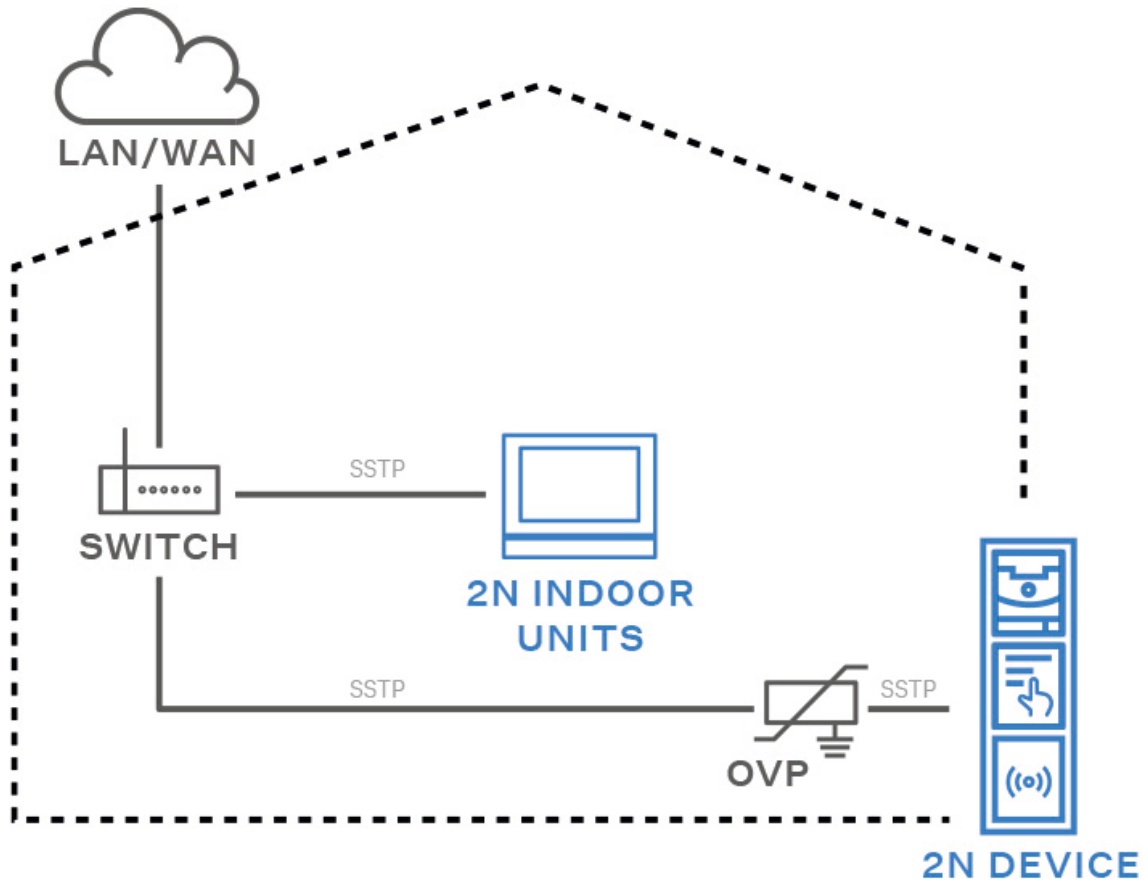
- Make sure that the overvoltage protector is installed as close as possible to the point where the cabling leaves the building.

Examples of Overvoltage Protection Installation

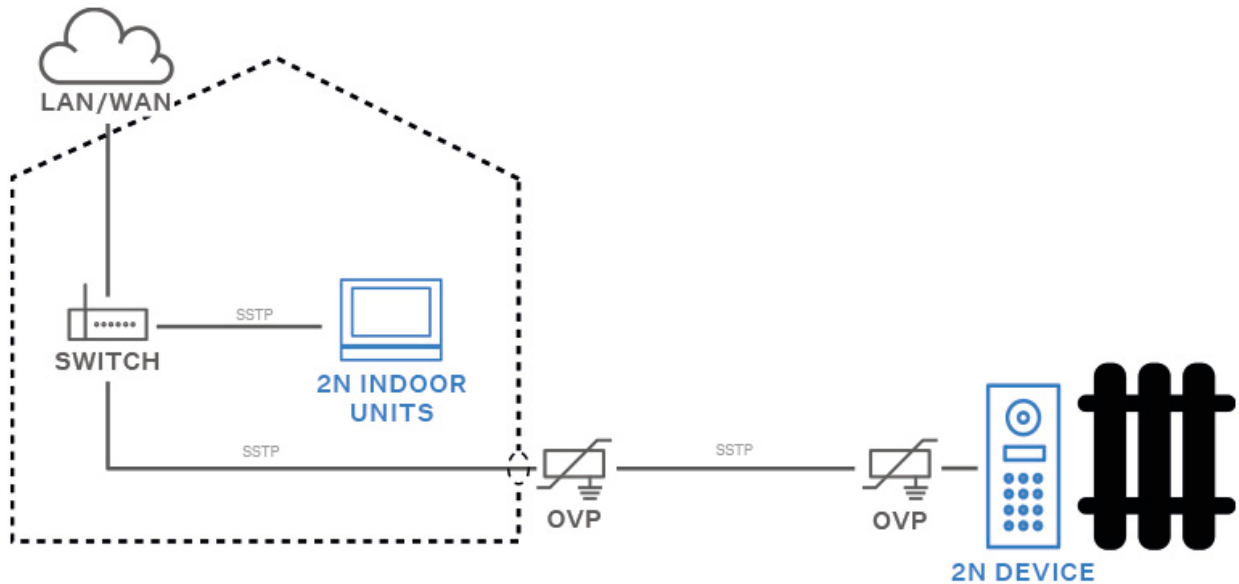
Overvoltage protection installation diagram for a device installed on the building facade and cables outside the building



Overvoltage protection installation diagram for a device installed on the building facade and cables inside the building



Overvoltage protection installation diagram for a device and cables installed outside the building



Main and Extending Modules



CAUTION

In case the firmware versions of the module to be connected and the main unit are incompatible, the module will not be detected. Therefore, update the device firmware after connecting the modules. Update firmware via the web configuration interface in System > Maintenance.

2N IP Force can be interconnected with the following modules:

- Internal 125 kHz RFID card reader (p. 57)
- Internal RFID Card Reader 13.56 MHz (p. 60)
- Internal secured RFID Card Reader 13.56 MHz (p. 62)
- Internal RFID Card Reader 125 kHz, OSDP (p. 64)
- Internal RFID Card Reader 13.56 MHz, NFC, OSDP (p. 66)
- Internal secured RFID Card Reader 13.56 MHz, NFC, OSDP (p. 69)
- Additional Switch
- Wiegand Isolator

- [Induction Loop external \(p. 73\)](#)
- [Induction Loop internal \(p. 71\)](#)
- [Security Relay \(p. 77\)](#)

Internal RFID card readers

Internal RFID card readers are designed for mounting into the **2N IP Force** main unit and is compatible with the main unit Part Nos. 9151101RPW, 9151101CHRPW, 9151102RW and 9151102CHRW. These models have a window, which is necessary for antenna operation. If the Internal RFID Card Reader is installed, it is not possible to install an Additional Switch.

The **2N IP Force** Internal RFID Card Reader adds two logical inputs, two switches and a tamper switch to the main unit.

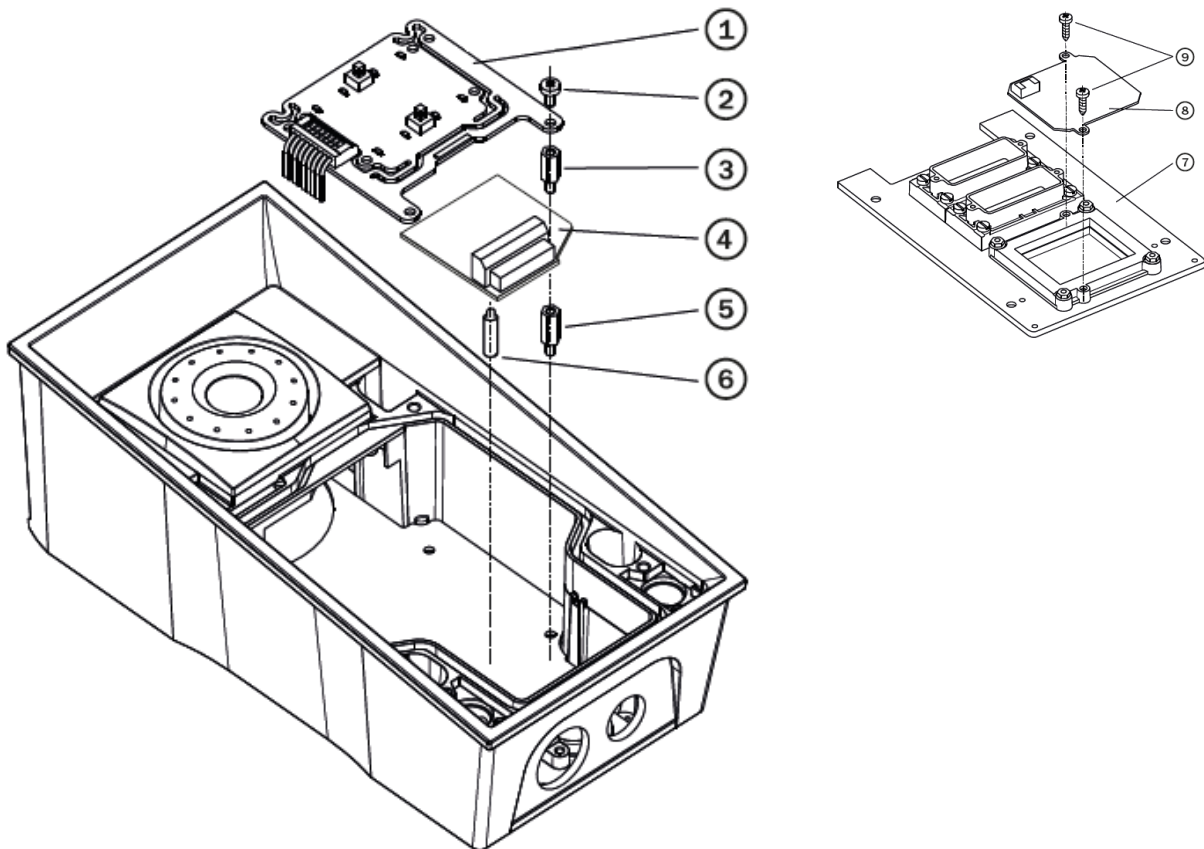
The purpose of the tamper switch is to signal any unauthorized opening of the device (to prevent a theft, e.g.). It is recommended to use the tamper switch.

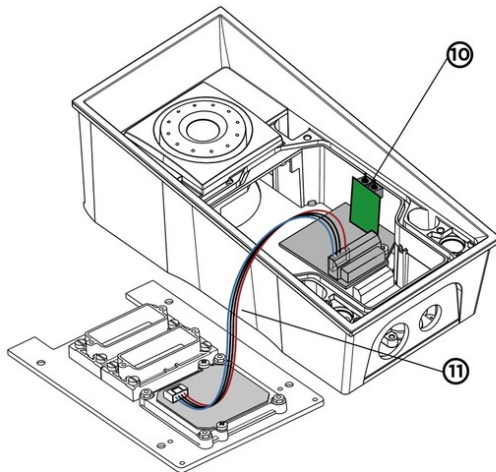


TIP

FAQ: [Tamper Switch - How to Connect It to 2N IP Intercom](#)

Installation



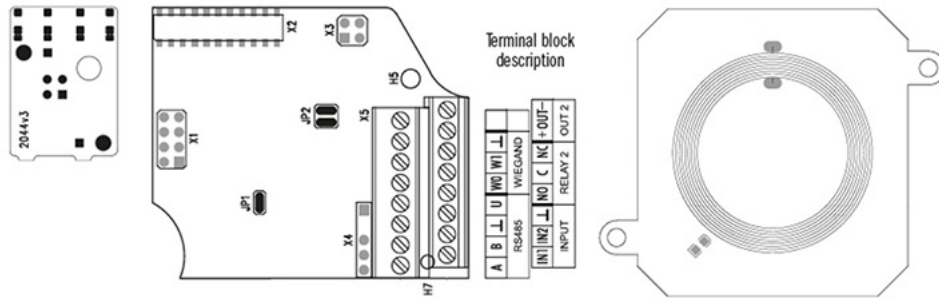


1. Turn off the device.
2. Remove the front panel (7) from the device.
3. Mount the antenna board (8). Use the two enclosed screws (9).
4. Plug the enclosed cable (11) to the antenna board connector.
5. Demount the button PCB (1). Do not disconnect its cable!
6. Dismount the right-hand bottom spacer (there are four spacers altogether).
7. There are two short metal spacers enclosed to the reader. Take the longer, 12 mm long spacer (5). Screw it into the free hole.
8. Plug the enclosed plastic support (6) into the reader board from the bottom side.
9. Put the reader board (4) in the motherboard connector. Make sure that the screw hole is directly above the spacer.
10. Screw in the remaining metal spacer (3), which is 10.5 mm long.
11. Fit the button PCB (1) back to its position using the original screws.
12. If you want to use the tamper switch (to detect unauthorized case opening for theft protection), insert the tamper board (10) in the connector located in the right-hand bottom part of the switch board (4). As the tamper switch shares the Relay2 NO and NC terminals, you cannot use the RELAY2 output and the tamper switch at the same time.
13. Plug the antenna cable (11) to its connector at the reader board (4).
14. Replace the front panel and tighten all the four screws.

Internal 125 kHz RFID card reader, Wiegand

The Internal RFID Card Reader 125 kHz (Part No. 9151011, 01344-001) is used for reading RFID card Ids in the 125 kHz band.

Specification



Card Reader

Supported RFID cards 125 kHz:

- EM4x02
- NXP HiTag2
- Operating frequency: 125 kHz
- Minimum reading distance: 10 mm above the **2N IP Force** surface

Passive output

- Max. 30 V / 2A AC / DC

Switched output

- 9 to 12 V DC according to power supply (PoE: 9 V; adapter: source voltage minus 1 V), up to 600 mA

Logical inputs

Active mode – requires external voltage (JP2 jumper OFF)

- U_{IN-ON} = min. +2.5 V
- U_{IN-OFF} = max. +1.5 V
- U_{IN} max. = +48 V
- I_{IN} (U_{IN} +48 V) = max. 1 mA

Passive mode – requires external contact only (JP2 jumper ON)

- U_{OUT} = approx. 8.3 V
- I_{LOOP} = approx. 0.5 mA

Signaling output

- Internal red LED under the intercom front panel

WIEGAND interface

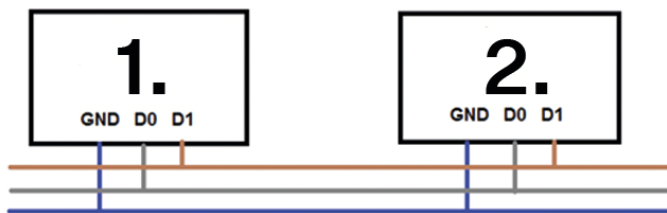
- Off/Input/Output (as programmed)

Wiegand Input Technical Parameters

Current	5 mA
Input resistance	680 Ω
Pulse length	50 μ s
Inter-pulse interval	approx. 2 ms

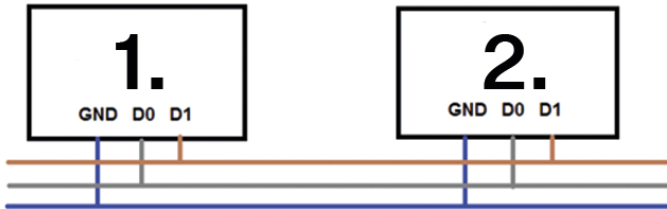
Recommended Wiegand bus wiring diagram, 2N device as a receiver.

1. 2N IP Force
2. External RFID Card Reader



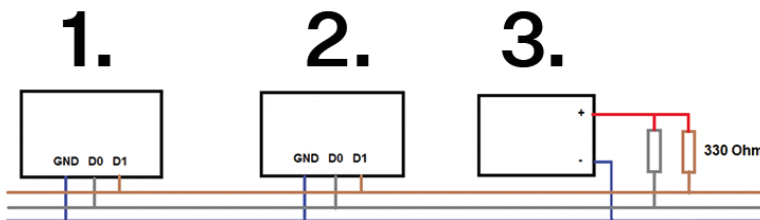
Recommended Wiegand bus wiring diagram, 2N device as a transmitter.

1. External RFID Card Reader
2. **2N IP Force**



Recommended reader & OC output wiring diagram

1. **2N IP Force**
2. External RFID Card Reader
3. 5 V power supply



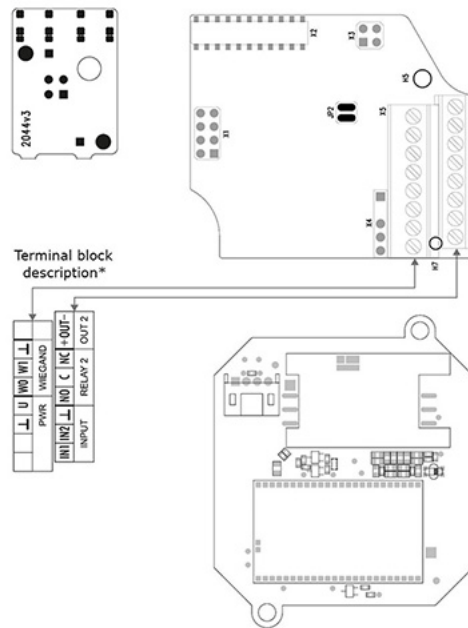
Module Settings

Refer to the Configuration Manual for details of Wiegand, output and reader settings. Refer to the Automation manual for input, red LED and tamper switch settings and use.

13.56 MHz Internal RFID Card Reader, Wiegand

The Internal RFID Card Reader 13.56 MHz (Part No. 9151031, 02522-001) is used for reading RFID card Ids in the 13.56 MHz band, NFC supported.

Specification



Card Reader

Supported RFID cards 13.56 MHz:

- **ISO14443A** (MIFARE Classic, MIFARE Plus, MIFARE Mini, MIFARE Ultralight, MIFARE DESFire CSN only)
- **PicoPass** (HID iClass CSN, Picopass)
- **FeliCa** (Standard, Lite)
- **ST SR** (SR, SRI, SRIX)
- **My2N**
- **2N PICard**
- Operating frequency: 13.56 MHz
- Minimum reading distance: 30 mm above the **2N IP Force** surface

Relay (SSR A, SSR B)

- NO contact max. 30 V / 1 A AC/DC

Switched output

- 9.8 to 13.8 V DC according to power supply (PoE: 11.6 V; adapter: supply voltage minus 0,4 V), up to 400 mA

Logical inputs

Active mode – requires external voltage (jumper JP1 for IN1, pins 3–4 are open, jumper JP1 for IN2, pins 1–2 are open)

- $U_{IN-ON} = \text{min. } +2.5 \text{ V}$
- $U_{IN-OFF} = \text{max. } +1.5 \text{ V}$
- $U_{IN \text{ max.}} = +48 \text{ V}$

- $I_{IN} (U_{IN} +48 V) = \text{max. } 1 \text{ mA}$

Passive mode – requires external contact only (jumper JP1 for IN1, pins 3–4 are open, jumper JP1 for IN2, pins 1–2 are open)

- $U_{IN1} = \text{approx. } 8.3 \text{ V}$
- $U_{IN2} = \text{approx. } 8.3 \text{ V}$
- $I_{LOOP} = \text{approx. } 0.5 \text{ mA}$

Signaling output

- Internal red LED under the intercom front panel

Power Supply

- For external RFID card reader
- 12 V DC \pm 15% / 350 mA

WIEGAND interface

- Off/Input/Output (as programmed)

Wiegand Input Technical Parameters

Current	5 mA
Input resistance	680 Ω
Pulse length	50 μs
Inter-pulse interval	approx. 2 ms

Module Settings

Refer to the Configuration Manual for details of Wiegand, output and reader settings. Refer to the Automation manual for input, red LED and tamper switch settings and use.

Internal secured RFID Card Reader 13.56 MHz, Wiegand

The 13.56 MHz Internal secured RFID Card Reader (Part No. 9151031S/01730-001) is used for reading RFID card IDs in the 13.56 MHz band, NFC supported.

- $I_{IN} (U_{IN} +48 V) = \text{max. } 1 \text{ mA}$

Passive mode – requires external contact only (JP2 jumper ON)

- $U_{IN1} = \text{approx. } 8.3 \text{ V}$
- $U_{IN2} = \text{approx. } 8.3 \text{ V}$
- $I_{LOOP} = \text{approx. } 0.5 \text{ mA}$

Signaling output

- Internal red LED under the intercom front panel

Power Supply

- For external RFID card reader
- 9 to 12 V / 350 mA depending on power supply

WIEGAND interface

- Off/Input/Output (as programmed)

Module Settings

Refer to the Configuration Manual for details of Wiegand, output and reader settings. Refer to the Automation manual for input, red LED and tamper switch settings and use.

Internal RFID Card Reader 125 kHz, OSDP

The 13.56 MHz Internal Secured RFID Card Reader (Part No. 9151022, 03228-001) is used for reading RFID card IDs in the 125 kHz band. Provides communication between a connected OSDP device (control panel, door controller) and 2N device via the OSDP.

Specification

Card Reader

Supported RFID cards 125 kHz:

- EM4x02
- NXP HiTag2
- Operating frequency: 125 kHz
- Minimum reading distance: 30 mm above the **2N IP Force** surface

Relay (SSR A, SSR B)

- NO contact max. 30 V / 1 A AC/DC

Switched output

- 9.8 to 13.8 V DC according to power supply (PoE: 11.6 V; adapter: supply voltage minus 0,4 V), up to 400 mA

Logical inputs

Active mode – requires external voltage (jumper JP1 for IN1, pins 3–4 are open, jumper JP1 for IN2, pins 1–2 are open)

- $U_{IN-ON} = \text{min. } +2.5 \text{ V}$
- $U_{IN-OFF} = \text{max. } +1.5 \text{ V}$
- $U_{IN \text{ max.}} = +48 \text{ V}$
- $I_{IN} (U_{IN} +48 V) = \text{max. } 1 \text{ mA}$

Passive mode – requires external contact only (jumper JP1 for IN1, pins 3–4 are open, jumper JP1 for IN2, pins 1–2 are open)

- U_{IN1} = approx. 8.3 V
- U_{IN2} = approx. 8.3 V
- I_{LOOP} = approx. 0.5 mA

Signaling output

- Internal red LED under the intercom front panel

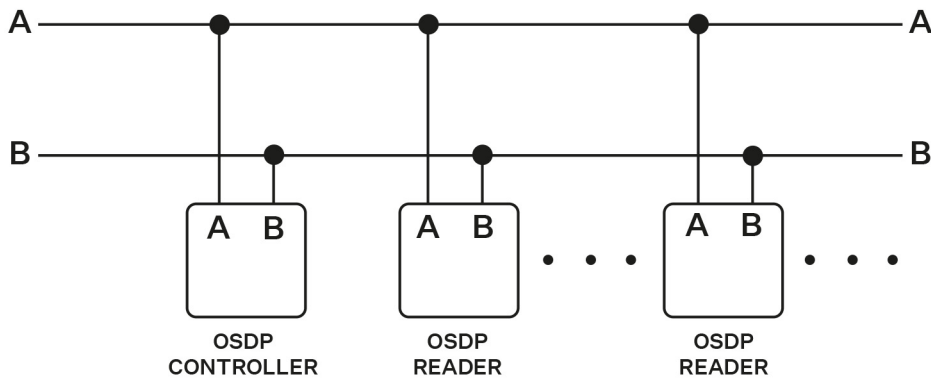
Power Supply

- For external RFID card reader
- 12 V DC \pm 15% / 350 mA

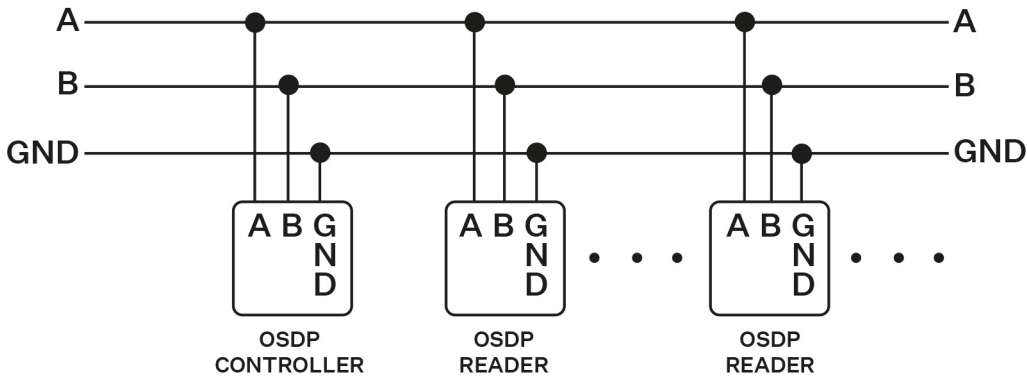
OSDP Interface

- OSDP reader (software configurable)

Wiring diagram for two-wire connection



Wiring diagram for three-wire connection



Module Settings

Refer to the Configuration Manual for OSDP, output and reader settings. Refer to the Automation manual for input, red LED and tamper switch settings and use.

Internal RFID Card Reader 13.56 MHz, NFC, OSDP

The 13.56 MHz Internal RFID Card Reader, NFC, OSDP (Part No. 9151023, 03229-001) is used for reading RFID card IDs in the 13.56 MHz band, NFC supported. Provides communication between a connected OSDP device (control panel, door controller) and 2N device via the OSDP.

Specification

Card Reader

Supported RFID cards 13.56 MHz:

- **ISO14443A** (MIFARE Classic, MIFARE Plus, MIFARE Mini, MIFARE Ultralight, MIFARE DESFire CSN only)
- **PicoPass** (HID iClass CSN, Picopass)
- **FeliCa** (Standard, Lite)
- **ST SR** (SR, SRI, SRIX)
- **My2N**
- **2N PICard**

- Operating frequency: 13.56 MHz
- Minimum reading distance: 30 mm above the **2N IP Force** surface

Relay (SSR A, SSR B)

- NO contact max. 30 V / 1 A AC/DC

Switched output

- 9.8 to 13.8 V DC according to power supply (PoE: 11.6 V; adapter: supply voltage minus 0,4 V), up to 400 mA

Logical inputs

Active mode – requires external voltage (jumper JP1 for IN1, pins 3–4 are open, jumper JP1 for IN2, pins 1–2 are open)

- $U_{IN-ON} = \text{min. } +2.5 \text{ V}$
- $U_{IN-OFF} = \text{max. } +1.5 \text{ V}$
- $U_{IN \text{ max.}} = +48 \text{ V}$
- $I_{IN} (U_{IN} +48 \text{ V}) = \text{max. } 1 \text{ mA}$

Passive mode – requires external contact only (jumper JP1 for IN1, pins 3–4 are open, jumper JP1 for IN2, pins 1–2 are open)

- $U_{IN1} = \text{approx. } 8.3 \text{ V}$
- $U_{IN2} = \text{approx. } 8.3 \text{ V}$
- $I_{LOOP} = \text{approx. } 0.5 \text{ mA}$

Signaling output

- Internal red LED under the intercom front panel

Power Supply

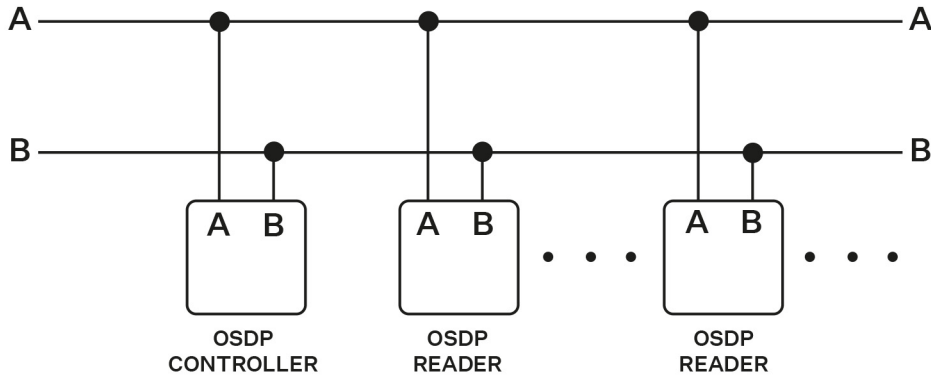
- For external RFID card reader
- 12 V DC \pm 15% / 350 mA

OSDP Interface

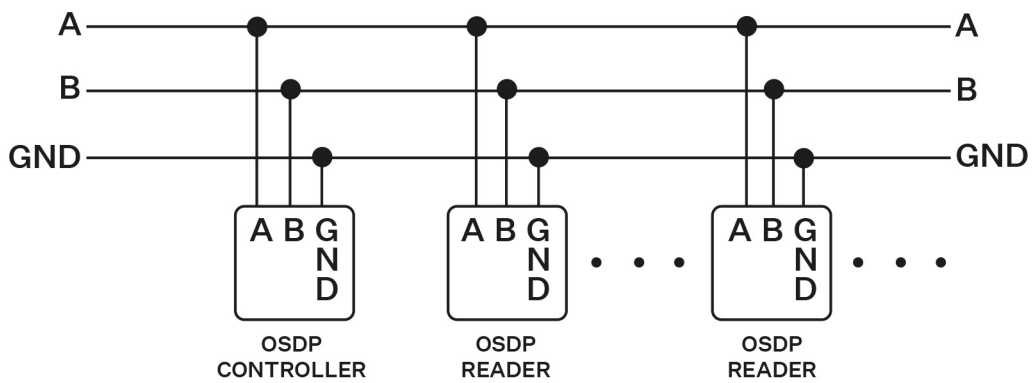
- OSDP reader (software configurable)

Recommended wiring

Wiring diagram for two-wire connection



Wiring diagram for three-wire connection



Module Settings

Refer to the Configuration Manual for OSDP, output and reader settings. Refer to the Automation manual for input, red LED and tamper switch settings and use.

Internal RFID Card Reader 13.56 MHz, NFC, OSDP

The 13.56 MHz Internal secured RFID Card Reader, NFC, OSDP (Part No. 9151023S, 03230-001) is used for reading RFID card IDs in the 13.56 MHz band, NFC supported. Provides communication between a connected OSDP device (control panel, door controller) and 2N device via the OSDP.

Specification

Card Reader

Supported RFID cards 13.56 MHz:

- **ISO14443A** (MIFARE Classic, MIFARE Plus, MIFARE Mini, MIFARE Ultralight, MIFARE DESFire CSN only)
- **PicoPass** (HID iClass CSN, Picopass)
- **FeliCa** (Standard, Lite)
- **ST SR** (SR, SRI, SRIX)
- **HID PAC** (HID SEOS, HID iClass SE, iClass SR, HID MIFARE DESFire with SIO, HID MIFARE Classic with SIO)
- **My2N**
- **2N PICard**

- Operating frequency: 13.56 MHz
- Minimum reading distance: 30 mm above the **2N IP Force** surface

Relay (SSR A, SSR B)

- NO contact max. 30 V / 1 A AC/DC

Switched output

- 9.8 to 13.8 V DC according to power supply (PoE: 11.6 V; adapter: supply voltage minus 0,4 V), up to 400 mA

Logical inputs

Active mode – requires external voltage (jumper JP1 for IN1, pins 3–4 are open, jumper JP1 for IN2, pins 1–2 are open)

- $U_{IN-ON} = \text{min. } +2.5 \text{ V}$
- $U_{IN-OFF} = \text{max. } +1.5 \text{ V}$
- $U_{IN \text{ max.}} = +48 \text{ V}$
- $I_{IN} (U_{IN} +48 \text{ V}) = \text{max. } 1 \text{ mA}$

Passive mode – requires external contact only (jumper JP1 for IN1, pins 3–4 are open, jumper JP1 for IN2, pins 1–2 are open)

- $U_{IN1} = \text{approx. } 8.3 \text{ V}$
- $U_{IN2} = \text{approx. } 8.3 \text{ V}$
- $I_{LOOP} = \text{approx. } 0.5 \text{ mA}$

Signaling output

- Internal red LED under the intercom front panel

Power Supply

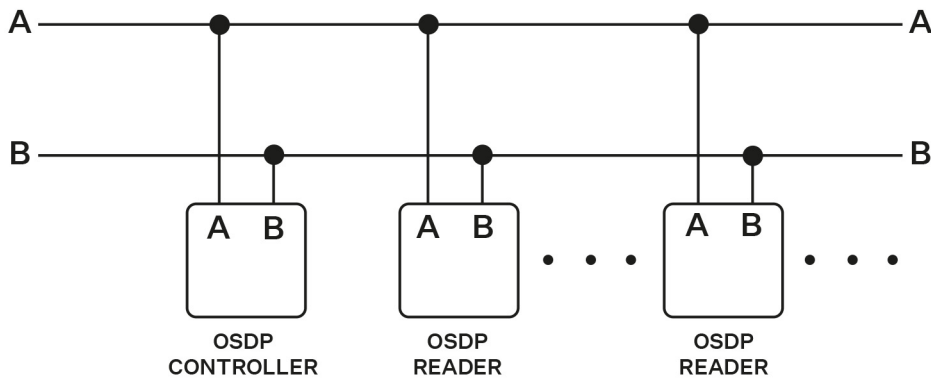
- For external RFID card reader
- 12 V DC \pm 15% / 350 mA

OSDP Interface

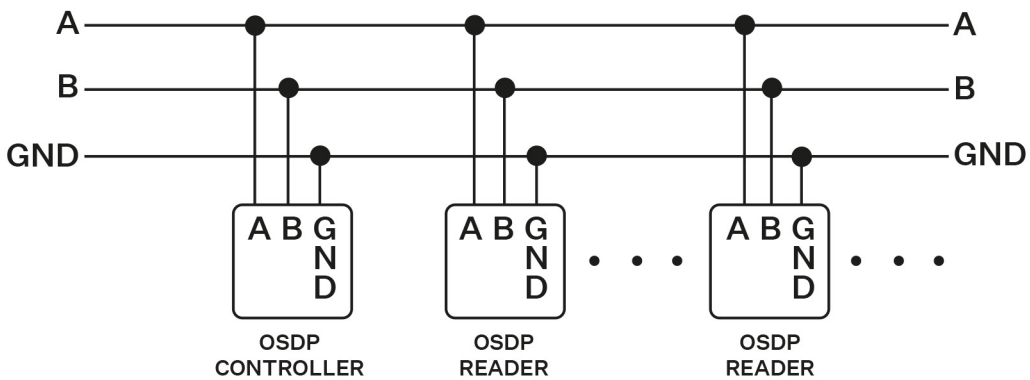
- OSDP reader (software configurable)

Recommended wiring

Wiring diagram for two-wire connection



Wiring diagram for three-wire connection



Module Settings

Refer to the Configuration Manual for OSDP, output and reader settings. Refer to the Automation manual for input, red LED and tamper switch settings and use.

Internal Induction Loop

The internal induction loop (Part No. 9151021, 02338-001) is one of the **2N IP Force** extending modules, which is used for people with disabled hearing equipped with a special hearing aid that receives reproduced sound via a magnetic field sensor.

Compatibility



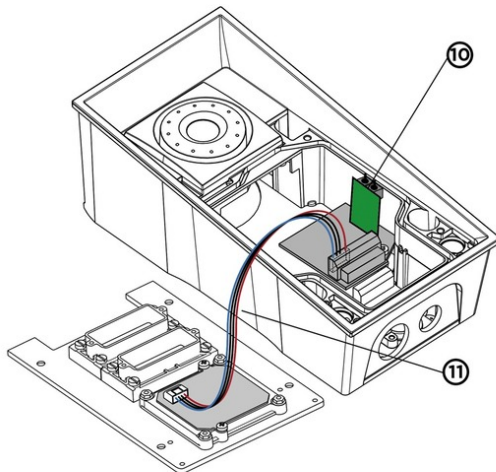
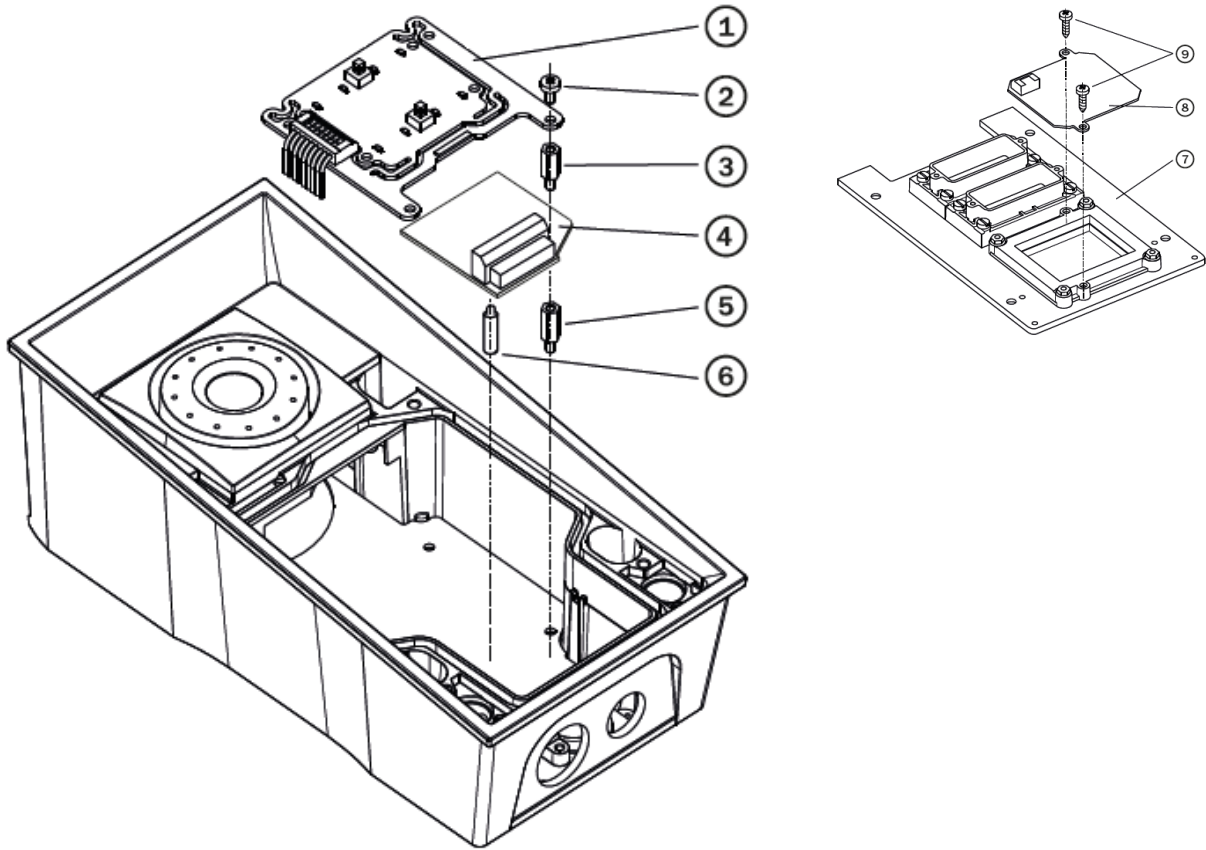
CAUTION

- If you use the induction loop, you cannot put an RFID card reader inside the device.
- If the Internal RFID Card Reader is installed, it is not possible to install an Additional Switch.

The module is compatible with the basic units with Part No.:

- 9151101RPW
- 9151101CHRPW
- 9151102CHRW
- 9151102RW

Installation



1. Turn off the device.
2. Remove the front panel (7) from the device.
3. Mount the antenna board (8). Use the two enclosed screws (9).
4. Plug the enclosed cable (11) to the antenna board connector.

5. Demount the button PCB (1). Do not disconnect its cable!
6. Dismount the right-hand bottom spacer (there are four spacers altogether).
7. There are two short metal spacers enclosed to the reader. Take the longer, 12 mm long spacer (5). Screw it into the free hole.
8. Plug the enclosed plastic support (6) into the reader board from the bottom side.
9. Put the reader board (4) in the motherboard connector. Make sure that the screw hole is directly above the spacer.
10. Screw in the remaining metal spacer (3), which is 10.5 mm long.
11. Fit the button PCB (1) back to its position using the original screws.
12. If you want to use the tamper switch (to detect unauthorized case opening for theft protection), insert the tamper board (10) in the connector located in the right-hand bottom part of the switch board (4). As the tamper switch shares the Relay2 NO and NC terminals, you cannot use the RELAY2 output and the tamper switch at the same time.
13. Plug the antenna cable (11) to its connector at the reader board (4).
14. Replace the front panel and tighten all the four screws.

Induction Loop external

External inductive loop (Inductive loop amplifier – Part No. 9159050, 01391-001, Inductive loop amplifier without accessories – Part No. 9159054, 12 V DC power adapter – Part No. 9159052, 01393-001) is used for reading RFID card IDs in the 13.56 MHz band, with NFC support. Provides communication between a connected OSDP device (control panel, door controller) and 2N device via the OSDP.

Specification

- Supply voltage: : 8–18 V DC
- Supply current at 12 V supply:
 - 1 Ω load, full power output; 1.4 A, sine wave signal; 1 A, pink noise signal
 - 8 Ω load, half power output; 550 mA, sine wave signal; 1.4 A, sine wave signal; 400 mA, pink noise signal
 - no signal; 100 mA
 - standby; max. 10 mA
- Switch to standby without signal: 10 s
- Basic input level: 100 mV – 6 V_{ef}
- Increased input level: 1 V – 35 V_{ef}
- Input impedance: 2 k Ω parallel with 0.3 H
- Output current, 1 Ω load: 2.2 A_{ef} (sine)
- Full power: 1.6 A_{ef} (pink noise)
- Output current, 8 Ω load: 730 mA_{ef} sine wave signal
- Half power: 520 mA_{ef} pink noise signal
- Output short-circuit resistance: unlimited time
- Frequency characteristics: 100 Hz – 5 KHz \pm 3 dB
- Temperature range: –20 to +50 °C
- Covering: IP65 (with round cable of 5–10 mm diameter)
- Dimensions: 144 x 100 x 31 mm
- Weight: 0.3 kg

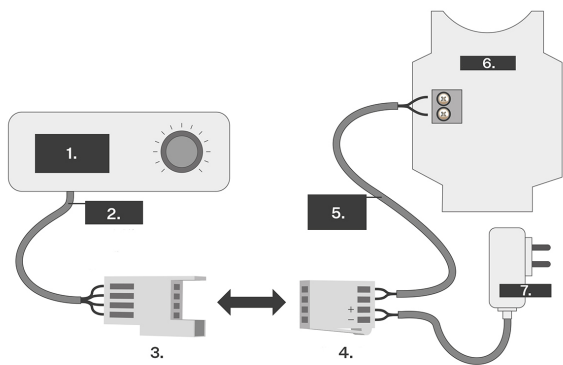
Installation

The induction loop amplifier can be wall mounted with the use of an internal induction loop where a signal covering is requested. Outdoor use is possible thanks to the IP65 covering. A four-wire cable of the length of one meter is mounted to the supplied product for easier connection to the intercom. In the cable there are two wires for 12 V DC supply and two wires for signal input, the wires are connected into interconnection connector. If you shorten the cable, follow the color marking.

1. Before wall mounting the amplifier, run the cable through the hole that you have prepared. Indicate the position of the holes for installation, the two holes on the front.

Installation

2. Remove the amplifier and drill the mounting holes.
3. Use the plugs and screws included in the delivery. Use a drill of the diameter of 6 mm.
4. After fastening, cover the screws with the blanks supplied.
5. Use the supplied connectors to connect the amplifier to the intercom and power supply.
6. The A connector is connected to the amplifier four-wire cable.
7. Insert a special intercom-connecting cable supplied with the amplifier and 12 V power supply outlets to the B connector. Connect the special cable to the intercom and connect the power supply to the mains.
8. You can place the mated A and B connectors into the 2N device cover. The connectors help you connect stripped cables. Open the connector by pushing a thin screwdriver onto the white spots at its front and close the connector by sliding the movable part through a side gap.
9. Finally, test the amplifier function using a suitable receiver for hearing impaired persons or magnetic field communication tester. No other settings are required.



1. Amplifier with pre-installed cable
2. Four-wire cable
 - IN1 – brown
 - IN2 – white
 - +12 V – yellow
 - 0 V – green
3. Connector A
4. Connector B
5. Connecting cable
6. 2N intercom
7. Power supply

Additional Switch

The Additional Switch (Part No. 9151010, 01350-001) is used for extending the count of inputs/outputs.



CAUTION

If the Additional Switch is installed, it is not possible to install the Internal RFID Card Reader.

Features

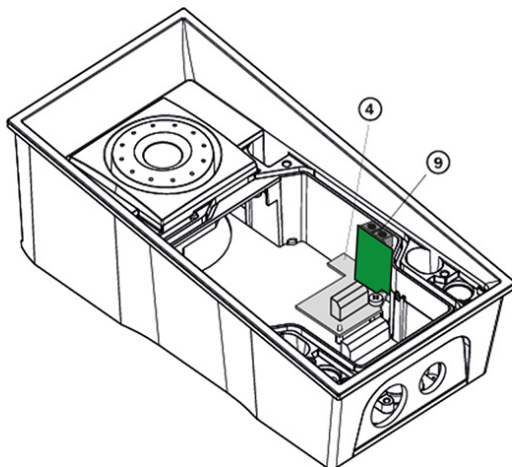
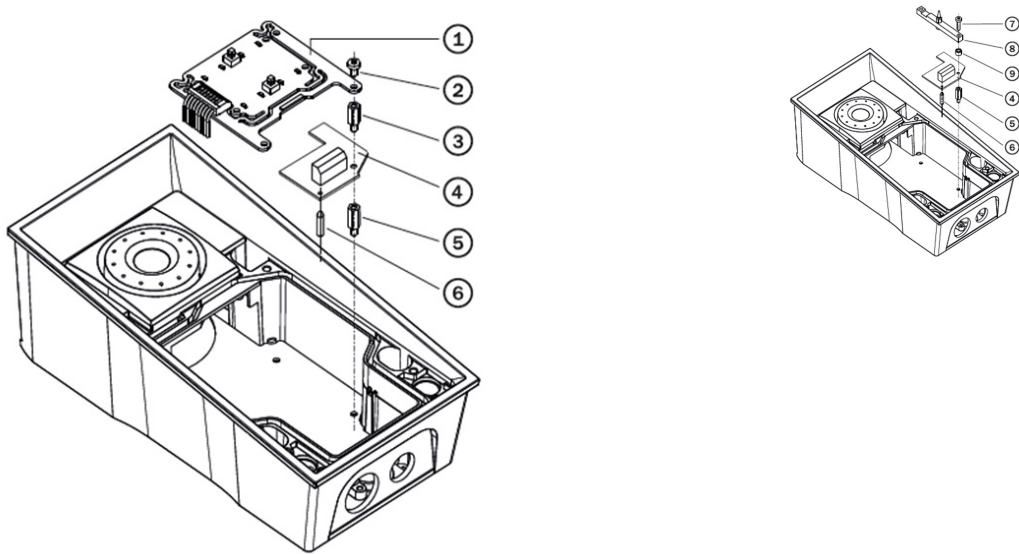
- The **2N IP Force** Additional Switch adds two additional switches, one logical input and a tamper switch to the main unit.
- The purpose of the tamper switch is to signal any unauthorized opening of the device (to prevent a theft, e.g.). It is recommended to use the tamper switch.



TIP

FAQ: [Tamper Switch - How to Connect It to 2N IP Intercom](#)

Installation



1. Turn off the device.
2. Remove the front panel from the device.
3. According to your model:
 - a. If you are mounting the switch into a two-nameplate model, demount the button PCB (1) and remove the right-hand bottom spacer (there are four PCB fitting spacers altogether).
 - b. If you are mounting the switch into a keypad model, take the keypad out of the holder. Demount the right-hand keypad holder - beam with a pin (8) – remembering its position. Demount the right-hand bottom spacer. Do not disconnect the button cable!
 - c. If you are mounting the switch into a model other than the two ones mentioned in items 3a and 3b above, remove the right-hand bottom screw from the motherboard.
4. Screw the enclosed 12 mm spacer (5) into the vacated motherboard slot.
5. Mount the enclosed plastic support (6) onto the switch board bottom side.

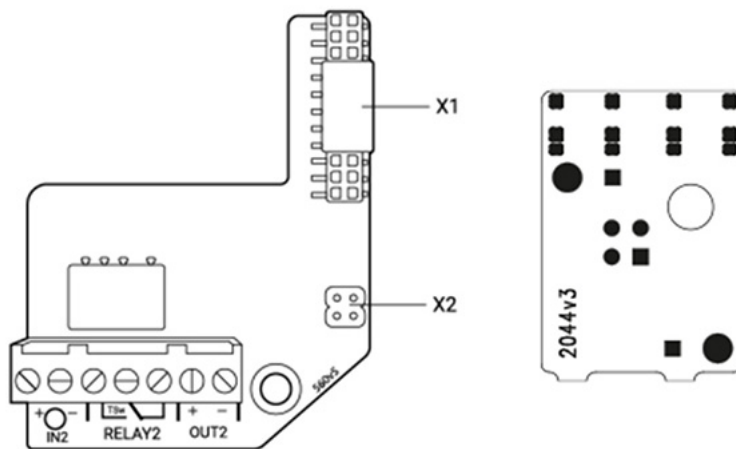
6. Put the switch board (4) in the motherboard connector. Make sure that the screw hole is directly above the spacer.
7. According to your model:
 - a. If you are mounting the switch into a two-nameplate model, fit the switch board with the enclosed 10.5 mm spacer (3) and reinstall the button PCB (1).
 - b. If you are mounting the switch into a keypad model, reinstall the beam (8) of the keypad holder (the pin is on the top). Insert the enclosed 4.5 mm washer (9) between the beam and the switch board, fitting the assembly with the 15 mm screw enclosed (7).
 - c. If you are mounting the switch into a model other than the two ones mentioned in items 7a and 7b, fit the switch board with the original 6 mm screw (2).
8. If you want to use the tamper switch, insert the tamper board (9) in the connector located in the right-hand bottom part of the switch board (4). As the tamper switch shares the RELAY2 NO and NC terminals, you cannot use the RELAY2 output and the tamper switch together.
9. Replace the front panel and tighten all the four screws.

Module Settings

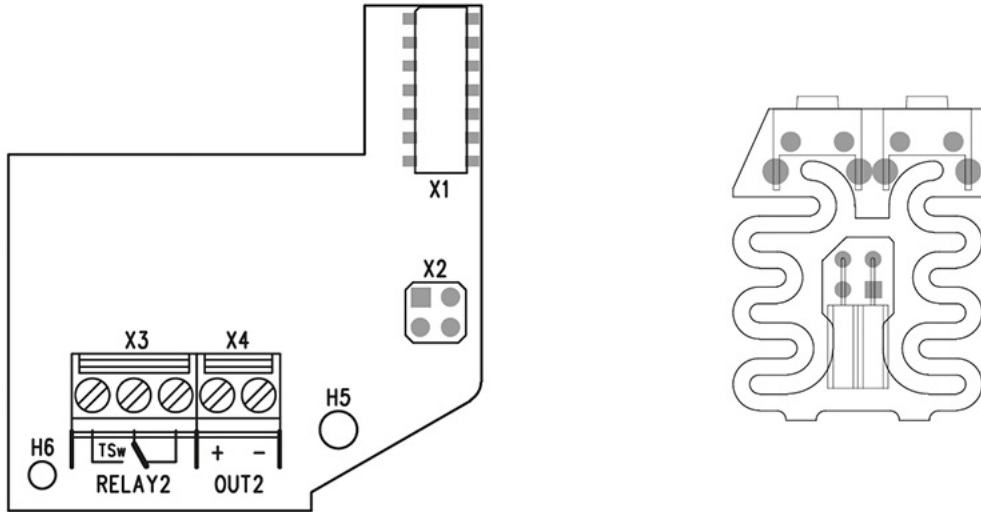
Refer to the Configuration Manual for details.

Connection

Version 5



Version 4 and lower



Security Relay

The Security Relay (9159010, 01386-001) is used for enhancing security between **2N IP Force** and the connected electric lock. The Security Relay significantly enhances security of the connected electric lock by preventing unlocking due to device tampering.



TIP

FAQ: [2N Security Relay – description of the device and use with the 2N intercoms](#)

Specification

Passive switch NO/NC contact, up to 30 V / 1 A AC/DC

- Switched output
- Where the Security Relay is fed from the device, 8 to 12 V DC is available on the output depending on the power supply, 400 mA DC.
 - PoE: 10 V
 - adapter: source voltage of minus 2 V
 - Where the Security Relay is fed from an external power supply, 12 V / 700 mA DC is available on the output.

Dimensions 66.5 × 32.5 × 20.5 mm

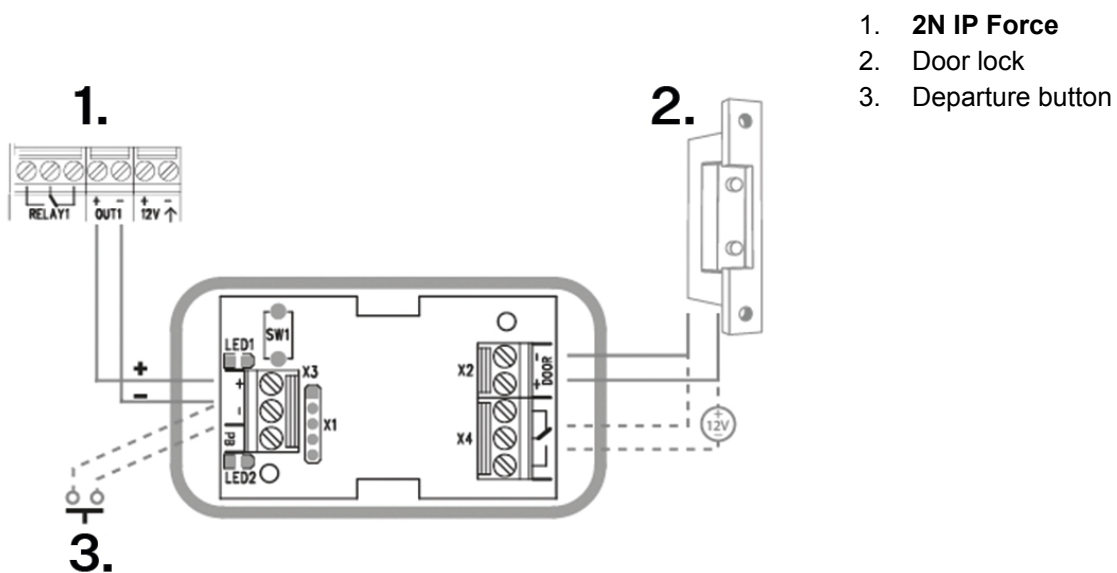
Weight 24 g

Connectors and Installation

The Security Relay is installed between the device (outside the secured area) and the electric lock (inside the secured area). The Security Relay includes a relay that can only be activated if a valid access card/code is detected on the unit.

The Security Relay is installed on a two-wire cable between the device and the electric lock inside the area to be secured (typically behind the door). The Security Relay is powered and controlled via this two-wire cable and can thus be added to an existing installation. Thanks to its compact dimensions, the device can be installed into a standard mounting box.

The Security Relay is designed with holes for surface anchoring. It is recommended that a screw of the diameter of 3 mm with a lens head of the diameter of 6 mm is used. Using a countersunk head may cause irreversible damage to the plastic cover!



Connect the Security Relay to the access unit as follows:

- To the Active output

Connect the electric lock to the Security Relay as follows:

- to the switched output
- to the passive output in series with the external power supply

The Security Relay also supports the Departure button connected to the 'PB' and '- 2N IP intercom' terminals. Once the Departure button is pressed, the output is activated for 5 seconds.

<https://www.youtube.com/embed/ardukvQzw5A>

Status Signaling

Green LED	Red LED	State
flashing	off	Operational mode
on	off	Activated output
flashing	flashing	Programming mode – waiting for initialization
on	flashing	Error – wrong code

Configuration

1. Connect the Security Relay to the properly set Security output of the device. Refer to the Configuration Manual for details. Make sure that one LED at least is on or flashing.
2. Press and hold the Relay RESET button for 5 seconds to switch the device in the programming mode (red and green LEDs flashing).
3. Activate the output switch using the keypad, telephone, etc. The first code sent from the device will be stored in the memory and considered valid. After code initialization, the Security Relay will pass into the operational mode (green LED flashing).

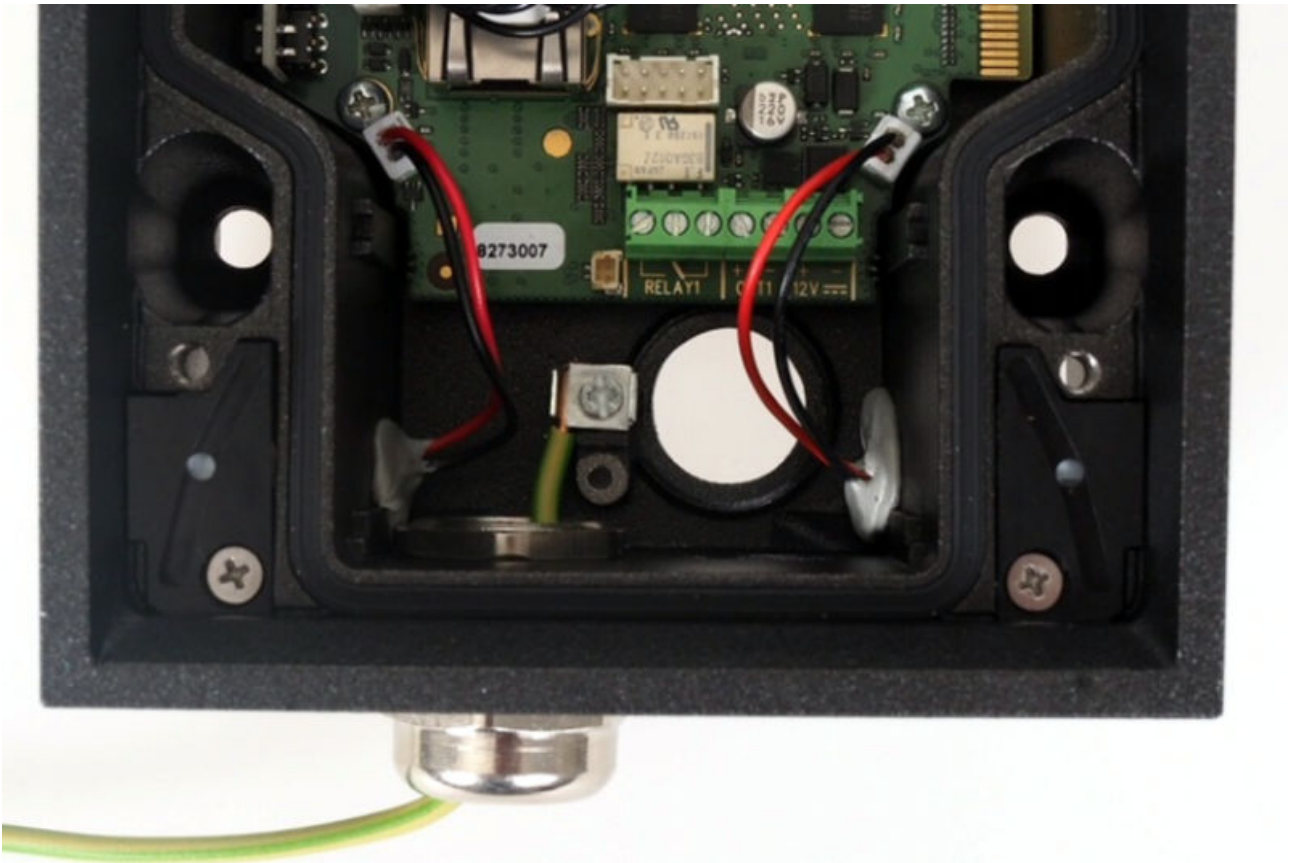


CAUTION

Having reset the factory defaults on a device with firmware 2.18 or higher, remember to reprogram Security Relay using the instructions above.

Grounding

To increase the static electricity resistance, you need a cable of the minimum cross-section of 4 mm². Connect the cable to the terminal in the bottom part of the device as shown in the figure below. The terminal is included in the delivery.



Installation Completion

1. Having connected all the wires, make sure that the bushings, if used, are tightened properly and the RJ-45 connector is inserted in the PCB connector.
2. Replace the front cover carefully. Make sure that the connector is inserted correctly and the wires inside the device leave enough space for the board if you are installing a four-button board. Tighten the four screws thoroughly to push the panel by about 1 mm to fit tightly to the metal chassis. You can use the wrench included in package for tightening (Torx 20). Keep the maximum tightening torque of 1.5 Nm.



WARNING

- Properly installed device is waterproof. An incorrectly made installation may compromise the device waterproofness. Water infiltration may damage the electronic part.
- Stainless steel screws are used for the **2N IP Force** assembly. Other screws than stainless steel ones corrode soon and may aesthetically deteriorate the surrounding environment!

Name Tags

Name Tag Printing

1. A sheet of translucent foil is enclosed to every device. Print it using a laser printer.

2. Cut the printed foil and insert the nametags in the buttons. Every name plate includes a piece of foil, which can be written over manually, using a waterproof permanent marker, if necessary.



TIP

Refer to the [Support & Download Center](#) section at 2N.com for the name tag printing template.

•

Name Tag Insertion/Replacement

The advantage of **2N IP Force** is its intuitive, simple access to name tags. There is no need to remove the front panel for replacement and so there is no risk of losing parts.

1. Loosen the name plate screw using the wrench enclosed, for example. You can open the name plate window like a door without losing the tightened screw.
2. Remove the used or blank name tag and insert a new tag.
3. Close the name plate window and tighten the screw appropriately.
4. Check the click effect of the button: if the button fails to click properly when pressed (when moved by approx. 0.5 mm), the tag is too thick or thin. Make sure that the button clicks when you press it on both ends.

Nametag Insertion/Replacement

The advantage of **2N IP Force** is its intuitive, simple access to name tags. There is no need to remove the front panel for replacement and so there is no risk of losing parts.

1. Loosen the name plate screw using the wrench enclosed, for example. You can open the name plate window like a door without losing the tightened screw.
2. Remove the used or blank name tag and insert a new tag.
3. Close the name plate window and tighten the screw appropriately.
4. Check the click effect of the button: if the button fails to click properly when pressed (when moved by approx. 0.5 mm), the tag is too thick or thin. Make sure that the button clicks when you press it on both ends.

Tactile stickers

Special tactile stickers with raised surfaces are included in the package. These stickers help people with visual impairments to recognize the basic controls of the device.

We recommend placing the sticker on the primary quick dial button. Place the sticker on the button edge and adjust the text on the label as needed to make it legible and not obscured by the sticker.



NOTE

Clean the device surface from dust and dirt before applying the sticker.

Brief Guidelines

- [Device Configuration Interface Access \(p. 82\)](#)
- [Configuration via Hardware](#)
- [IP Address Retrieval \(p. 85\)](#)
- [Firmware Update \(p. 90\)](#)
- [Device Restart \(p. 90\)](#)
- [Factory Default Reset](#)
- [Call Connection \(p. 92\)](#)

Device Configuration Interface Access

2N IP Force is configured via a web configuration interface. You have to know the device IP address or the device domain name. Make sure that the device is connected to the local IP network and powered.

Refer to the Configuration [Manual for 2N IP Intercoms](#) for the device configuration details.

Domain Name

Enter the device domain name as “hostname.local” to connect to the device. The hostname of a new device consists of the device name and serial number. Enter the serial number into the domain name without dashes. Change the hostname anytime in **System > Network**.

Default domain name 2N IP Force: 2NIPForce-{serial number without dashes}.local (e.g.: “2NIP-Force-0000000001.local”)

Login based on a domain name is advantageous if the dynamic IP address is used. While the dynamic IP address changes, the domain name remains the same. It is possible to generate certificates signed by a trusted certification authority for the domain name.

IP address

To retrieve the device IP address, take the following steps, see :

- Use the freely accessible **2N Network Scanner**.
- Use the Speed Dial button.

Web Configuration Interface Login

1. Fill in the **2N IP Force** address or domain name into the internet browser.

The login screen is now displayed.

Should the login screen fail to appear, make sure that you have typed the correct IP address, port or domain name. The login screen also does not appear when the administration web server is off. If you do not have a certificate generated for the IP address / domain name, an invalid security certificate warning may be displayed. In this case, you have to confirm that you want to go to the web configuration interface.

2. Enter the login data.

The default login data are:

Username: **Admin**

Password: **2n**

It is necessary to change the password immediately upon the first login.

After login using the default password, the access to the web configuration interface functions is limited.

**TIP**

It is recommended that a password is used that is difficult to break. It is not recommended that names, places or things, especially those closely related to the user, are used in the password.

For increased password security, it is recommended that:

- the random password generator is used,
- the password length is 12 characters at least,
- various characters from different character sets are combined (small/capital letters, digits, special characters, etc.).

Configuration via Hardware

The RESET button helps you reset the factory default values, restart the device, retrieve the device IP address and switch the IP address static/dynamic mode.

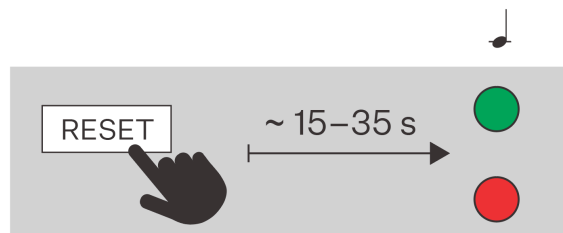
Device Restart

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

IP Address Retrieval Using Hardware

Follow the instructions below to retrieve the current IP address:

1. Press the button RESET and keep it pressed.
 - a. Wait until the red and green LEDs go on simultaneously on the device and the acoustic signal can be heard (approx. 15–35 s).
2. Release the RESET button.
3. The device announces the current IP address via the speaker automatically.

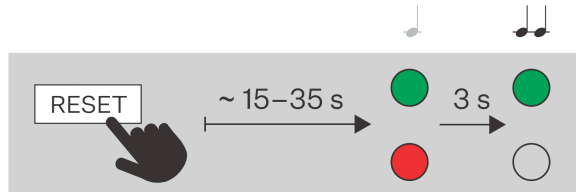
**NOTE**

The delay after pressing RESET till the first light and sound signaling is set to 15–35 s depending on the device model used.

Dynamic/Static IP Address Switching

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

1. Press the button RESET and keep it pressed.
 - a. Wait until the red and green LEDs go on simultaneously on the device and the acoustic signal can be heard 🗣️ (approx. 15–35 s).
 - b. Wait until the red LED goes off and the acoustic signal can be heard 🗣️ (approx. for another 3 s).
2. Release the RESET button.



NOTE

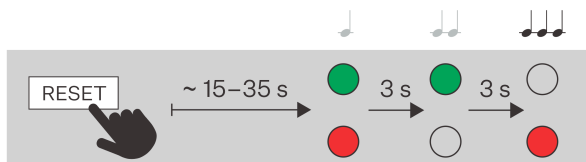
The following network parameters will be set after restart:

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

Dynamic IP Address Setting

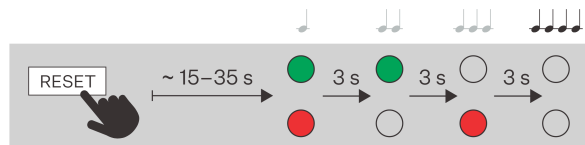
Follow the instructions below to switch on the Static IP address mode (DCHP ON):

1. Press the button RESET and keep it pressed.
 - a. Wait until the red and green LEDs go on simultaneously on the device and the acoustic signal can be heard 🗣️ (approx. 15–35 s).
 - b. Wait until the red LED goes off and the acoustic signal can be heard 🗣️ (approx. for another 3 s).
 - c. 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).
2. Release the RESET button.



Factory Default Reset

1. Press the button RESET and keep it pressed.
 - a. Wait until the red and green LEDs go on simultaneously on the device and the acoustic signal can be heard 🗣️ (approx. 15–35 s).
 - b. Wait until the red LED goes off and the acoustic signal can be heard 🗣️ (approx. for another 3 s).
 - c. 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).
 - d. Wait until the red LED goes off and the acoustic signal can be heard 🗣️ (approx. for another 3 s).
2. Release the RESET button.



IP Address Retrieval

To retrieve the device IP address, take the following steps:

- Use the freely accessible **2N Network Scanner**.
- Use the Speed Dial button.

IP Address Retrieval Using 2N Network Scanner

The application helps you find the IP addresses of all the 2N devices in the LAN. Download **2N Network Scanner** from the 2N.com website. Make sure that Microsoft .NET Framework 2.0 is installed for successful app installation.

1. Run the **2N Network Scanner** installer.
2. The Installation Wizard will help you with the installation.
3. Having installed **2N Network Scanner**, start the application using the Microsoft Windows Start menu. Once started, the application begins to automatically search the LAN for all the 2N devices which have been DHCP/statically assigned IP addresses. These devices are then shown in a table.

IP Address	Serial Number	Display Name	Version
10.0.24.69	54-1921-5022	2N IP Verso Mobile Team	2.29.0.38.6
10.0.24.73	52-1953-0073	2N Indoor Touch 2.0	4.0.0
10.0.24.74	54-0956-0004	2N Indoor Touch	3.4.0.1.0
10.0.24.75	52-1953-0064	2N Indoor Touch 2.0	999.4.3.0 (eng.378...
10.0.24.78	52-1953-0079	2N Indoor Touch 2.0	999.4.4.0 (eng.502...
10.0.24.79	52-2339-0077	2N Indoor Compact	2.30.0.39.0
10.0.24.87	52-2101-0046	2N Indoor Touch 2.0	4.3.0 (rc.4.3.x)
10.0.24.102	52-1953-0098	2N Indoor Touch 2.0	999.4.4.0 (eng.496...
10.0.24.105	52-2656-0067	2N Indoor View	2.29.0.38.6
10.0.24.108	52-2700-0559	2N Indoor Touch 2.0	999.4.4.0 (eng.494...
10.0.24.116	52-2667-0295	2N Indoor Touch 2.0	4.2.2 (release.4.2.2)
10.0.24.123	99-8888-0035	2N Indoor Touch 2.0	999.4.1.7 (eng.root...

Count: 15

4. Select the device to be configured and right-click it. Select *Browse...* to open the device administration web interface login box for configuration.



CAUTION

If the found device is grey highlighted, its IP address cannot be configured using this application. In that case, click Refresh to find the device again and check whether multicast is enabled in your network.



TIP

- Double click the selected row in the **2N Network Scanner** list to access the device web interface easily.
- To change the device IP address, select *Config* and enter the required static IP address or activate DHCP.

The default login data are:

Username: **Admin**

Password: **2n**

It is necessary to change the password immediately upon the first login.



TIP

It is recommended that a password is used that is difficult to break. It is not recommended that names, places or things, especially those closely related to the user, are used in the password.

For increased password security, it is recommended that:

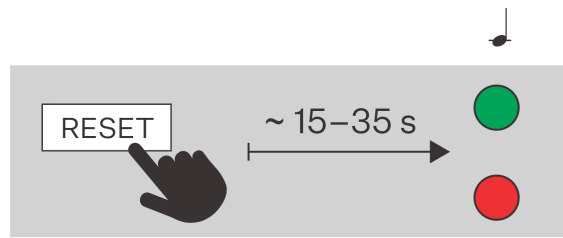
- the random password generator is used,
- the password length is 12 characters at least,
- various characters from different character sets are combined (small/capital letters, digits, special characters, etc.).

IP Address Retrieval Using Hardware

Follow the instructions below to retrieve the current IP address:

1. Press the button RESET and keep it pressed.
 - a. Wait until the red and green LEDs go on simultaneously on the device and the acoustic signal can be heard 🗣️ (approx. 15–35 s).
2. Release the RESET button.

3. The device announces the current IP address via the speaker automatically.



NOTE

The delay after pressing RESET till the first light and sound signaling is set to 15–35 s depending on the device model used.

IP Address Retrieval Using Speed Dial Button

Take the following steps to retrieve the **2N IP Force** IP address:

1. Connect the device to the power supply (if connected, disconnect and reconnect it).
2. Wait for the second sound signal.
3. Press the Quick dial button 5 times on the main unit.
4. The device reads its IP address.




NOTE

- If the address is 0.0.0.0, it means that the device has not obtained the IP address from the DHCP server.
- Press the button sequence within 30 seconds after the sound signal for security reasons. Up to 2 s intervals are allowed between the presses.

Dynamic/Static IP Address Switching

In 1 or 2-button models, DHCP switching can be performed using only one button.

1. Connect the device to the power supply (if connected, disconnect and reconnect it).
2. Wait for the first sound signal .
3. Press the Quick dial button 15 times on the main unit.



CAUTION

The 15 times 1 sequence must be entered within 30 seconds after the first sound signal for security reasons. Up to 2 s intervals are allowed between the presses.

4. The acoustic signal  indicates mode switching.



NOTE


After the static address mode is switched on, the basic network parameters are reset to the following default values:

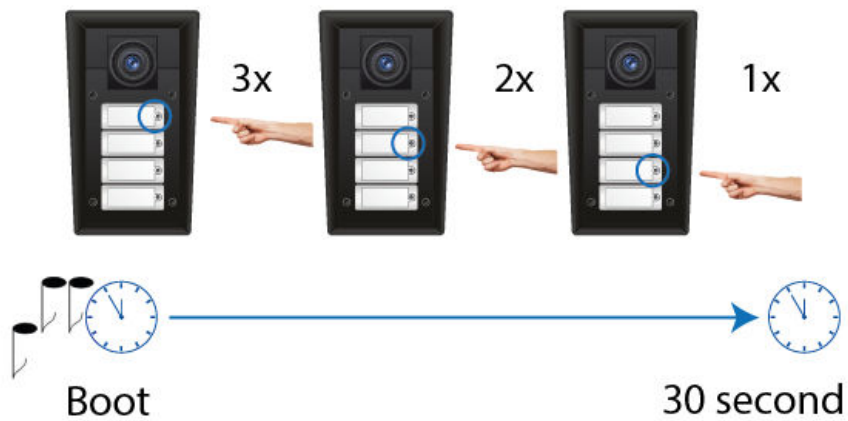
- IP address: 192.168.1.100
- Network mask: 255.255.255.0
- Default gateway: 192.168.1.1

4-Button Models

Dynamic/Static IP Address Switching

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

1. Connect the device to the power supply (if connected, disconnect and reconnect it).
2. Wait for the first sound signal .
3. Press buttons 1, 1, 1, 2, 2, 3 sequentially.



CAUTION

Be sure to press the button sequence within thirty seconds after the sound signal for security reasons. Up to 2 s intervals are allowed between the presses.

4. The acoustic signal  indicates mode switching.
5. Wait until the device is restarted automatically.




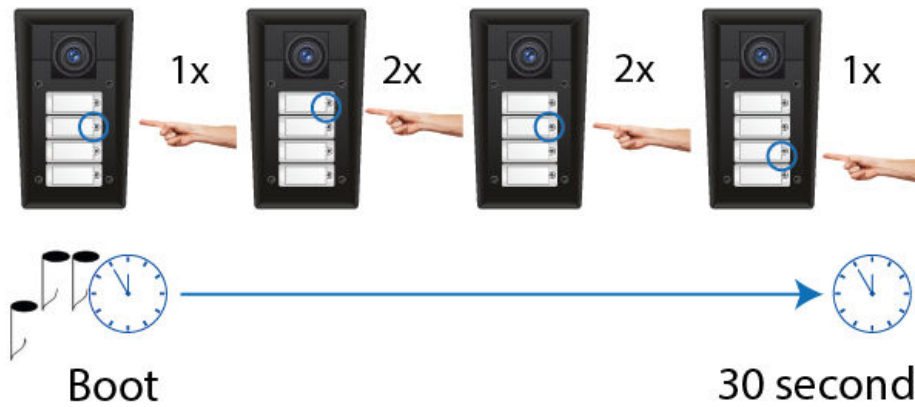
NOTE

After the static address mode is switched on, the basic network parameters are reset to the following default values:

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


Dynamic IP Address Setting

1. Connect the device to the power supply (if connected, disconnect and reconnect it).
2. Wait for the first sound signal .
3. Press buttons 2, 1, 1, 2, 2, 3 sequentially.



CAUTION

Be sure to press the button sequence within thirty seconds after the sound signal for security reasons. Up to 2 s intervals are allowed between the presses.

4. The acoustic signal  indicates mode switching.
5. Wait until the device is restarted automatically.

Device Restart

To restart the device choose one of the following options:

- using the RESET button,
- via the web configuration interface.



NOTE

The device restart does not result in any change in the configuration settings.

Restart Using RESET Button

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

Restart Using Web Configuration Interface

You can restart the device via the web configuration interface. Refer to [Web Configuration Interface Login \(p. 82\)](#) for login details. Restart the device in System > Maintenance > System using **Restart device**.

Firmware Update

We recommend that the firmware is also updated during the **2N IP Force** installation. Refer to [2N.com](#) for the latest FW version.

Update firmware via the web configuration interface in System > Maintenance, refer to the device Configuration Manual.





Once the firmware is uploaded successfully, the device is restarted automatically.



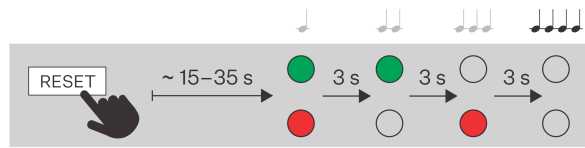
TIP

You can make bulk updates for multiple devices via **2N Access Commander**.

Factory Default Reset

1. Press the button RESET and keep it pressed.
 - a. Wait until the red and green LEDs go on simultaneously on the device and the acoustic signal can be heard  (approx. 15–35 s).
 - b. Wait until the red LED goes off and the acoustic signal can be heard  (approx. for another 3 s).
 - c. 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).
 - d. Wait until the red LED goes off and the acoustic signal can be heard  (approx. for another 3 s).

2. Release the RESET button.



Factory Default Reset (version 555v3)

For resetting device to default settings press and hold SW1 button. Wait for the first sound signalization and then release the button. If you press the button for short time device will reboot only.



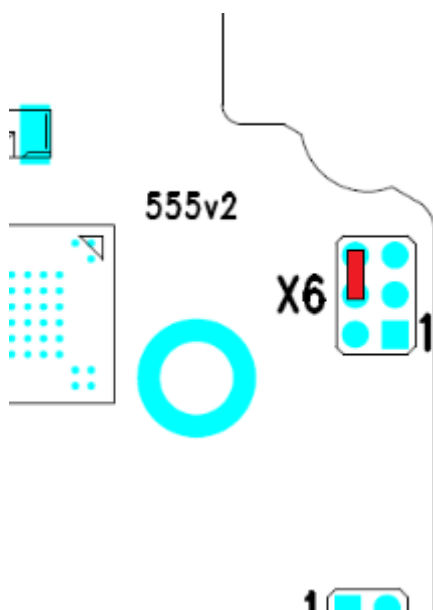
WARNING

Having reset the factory defaults on a device with firmware 2.18 or higher, remember to reprogram Security Relay using the instructions above.

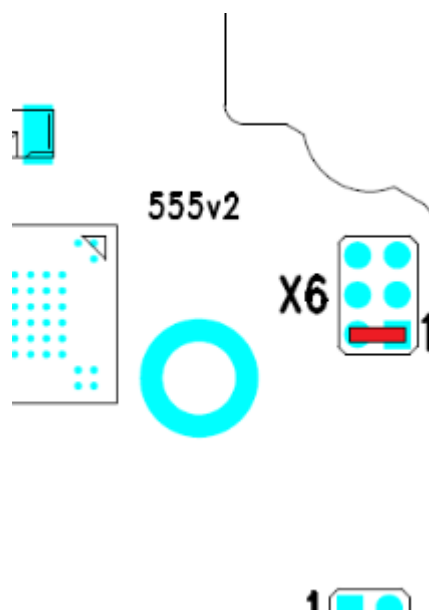
Factory Default Reset (version 555v2)

1. Disconnect the device from the power supply.
2. Move the short-circuit jumper on connector X6 into the Default setup position. Configuration jumpers (X6) are located in the right-hand upper corner of the PCB.
3. Reconnect the power supply and wait for a start signalling sound.
4. Disconnect the device from the power supply.
5. Move the short-circuit jumper on connector X6 into the Normal operation position.
6. Reconnect the power supply. The device will be reset to factory default.

Configuration jumpers X6, PCB version 555v2 – Normal Operation



Configuration jumpers X6, PCB version 555v2 – Factory Reset



**WARNING**

Having reset the factory defaults on a device with firmware 2.18 or higher, remember to reprogram Security Relay using the instructions above.


Call Connection

To make calls with other terminal devices in IP networks, it is necessary to assign the device to a contact in the Directory.

Connection with 2N Devices in LAN

1. Make sure that Local calls is enabled on both the 2N devices.
2. Click **Find device** above the table. Check the listed device that you want to establish connection to. Once the device is added, editing becomes available.
3. Edit the following:
 - a virtual number to start a call by entering the number via your numerical keypad
 - basic information and access options for the device user
4. To dial calls using a device button, assign the selected user to the speed dial button in **Calls > Dialing**, refer to Speed dial buttons.
5. Make sure that Local calls is enabled on the called 2N device to make a successful call.

Connection with Other Devices

1. Click **Add user** or open the existing contact detail to create a new contact.
2. Click the pencil icon next to the Phone number  to open phone number editing.
3. Enter the calling destination address into the destination field to which the call is to be routed. Complete the target IP address or SIP URI in the format “ user_name@host” (e.g.: “johana@2.255.4.255” or “johana@calls.2N.com”). For local calls, fill in the called 2N device ID as specified in the Local calls tab in the called device web configuration interface.
4. Edit the following:
 - a virtual number to start a call by entering the number via your numerical keypad
 - basic information and access options for the device user
5. To dial calls using a device button, assign the selected user to the speed dial button in **Calls > Dialing**, refer to Speed dial buttons.
6. Make sure that the call transmitting service is enabled on the called 2N device to make a successful call.

**TIP**

- Each user can be assigned up to 3 phone numbers. In case the first user fails to answer, the call is forwarded to the next number. Alternatively, you can set calling to multiple phone numbers simultaneously. Check Call in group between the selected numbers to set such multiple phone number calling for one user.
- In case all the user phone numbers are unavailable, you can set call forwarding to **Deputy**.
- Users can be gathered in calling groups. The calling group name is shown in the phone book on the device display. You can assign a calling group to a quick dial button. To terminate an outgoing group call after the first rejection from any of the called users, set this function in Calls > General Settings.

Device Control

2N IP Force is an intercom allowing you to:

- call other devices
 - use quick dial buttons
 - dial phone number
 - receive and reject incoming calls
 - activate switch (e.g. door opening, lift control, etc.)
- The device works as an authorization intermediary, which authenticates the user access rights and, if the user access is valid, activates the switch. The door lock, lifts etc. can be controlled by the switch.

The device control depends on the product version:


- using RFID cards and chips – by tapping a card/chip on the device,
- using NFC,
- by entering a numeric access code via a keypad application

Speed Dial Buttons

By pressing the speed dial button on the main unit, you can make a quick call to the assigned position in the phone book, see the Intercom Configuration > Calling > Dialing chapter in the Configuration Manual.



Call setup is signaled by a long intermittent tone or otherwise as configured in the PBX connected.

Pressing the same button repeatedly during or while making a call can be assigned the function of hanging up or hanging up simultaneously with a call to the next phone number of the called party. Alternatively, pressing the same button repeatedly may have no function, see **Intercom Configuration > Calling > General Settings** in the Configuration Manual.

For keypad equipped models, you can also hang up the call at any time by pressing  if enabled so by the Button function during an outgoing call parameter, see **Intercom Configuration > Calling > General Settings** in the Configuration Manual.


Calling to Phone Book Position



The Phonebook **2N IP Force** can contain up to 1 999 pre-programmed positions. Depending on the number of speed dial buttons actually installed, you can call a given number of positions in the phone book. The remaining positions can be retrieved via the numeric keypad if the **Speed dial using digits** is enabled in configuration.

1. Enter the position number using your numeric keypad (05, 15, 200 e.g. – two digits at least and four digits at most) and press  for confirmation.
2. For keypad equipped models, you can also hang up the call at any time by pressing  if enabled so by the Button function during an outgoing call parameter, see **Intercom Configuration > Calling > General Settings** in the Configuration Manual.



Calling to User-Defined Phone Number

If the **Phone Function Enable** parameter is set, you can use the numeric keypad to call a user-entered phone number.

1. Press the  button.




2. You will hear a continuous tone from the speaker.
3. Enter the telephone number using the numerical keypad and repress  for confirmation.
4. For keypad equipped models, you can also hang up the call at any time by pressing  if enabled so by the Button function during an outgoing call parameter, see **Intercom Configuration > Calling > General Settings** in the Configuration Manual.

Incoming Call Answering/Rejecting

If the automatic incoming call answering function is turned off, an incoming call is signaled by a loud ringing tone. Push the  button to answer the call and the  button to reject the call.

Door Opening (Switch Activation) by Code

2N IP Force is equipped with a door unlocking switch. Enter the valid code (refer to Subs. [Switches](#) of the Configuration Manual for IP Intercoms) using the numeric keypad to activate this switch.

1. Enter the switch activating numeric code using the numeric keypad and press the  button for confirmation.
2. A valid code is notified 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 signaled acoustically   or using a user sound.

Troubleshooting

Refer to <https://www.2n.com/faqs> for the most frequently solved problems.

Technical Parameters

Power supply types

PoE IEEE PoE 802.3af (Class 0, max. 12,95 W) (Class 0, max. 12.95 W)

External supply 12 V \pm 15 % / 2 A DC

Signaling protocol

SIP UDP, TCP, TLS

Buttons

Button design Transparent, white backlit buttons with easily replaceable nametags

Button count 1, 2 or 4

Numeric Keypad Optional

Audio

Microphone 2 integrated

Amplifier 10 W (class D)

Speaker 10 W

Sound pressure level (SPL max) 78.5 dB (1 W model, for 1 kHz at 1 m); 94 dB \pm 3 % (10 W model, for 1 kHz at 1 m)

Technical Parameters

Audio

Volume Control	Adjustable with automatic adaptive mode
Full duplex	Yes (AEC)

Audio stream

Protocols	<ul style="list-style-type: none">• RTP• RTSP
Codecs and Used Bandwidth	<ul style="list-style-type: none">• G.711 (PCMA, PCMU) – 64 kbps (with 85.6 kbps headers)• G.729 – 16 kbps (with 29.6 kbps headers)• G.722 – 64 (with 85.6 kbps headers)• L16/16kHz – 256 kbps (with 277.6 kbps headers)

Camera

Sensor	1/3" color CMOS
JPEG resolution	Up to 1280 x 960
Video resolution	640 x 480
Frame rate	30 fps
Sensor sensitivity	5.6 V/lux-sec (550 nm)
Viewing angle	135° (H), 109° (V)
Infrared illumination	Yes
Focal length	2.3 mm

Technical Parameters

Video stream

Protocols	<ul style="list-style-type: none">• RTP• RTSP• HTTP
ONVIF/RTSP streaming codecs	<ul style="list-style-type: none">• H.264• MPEG-4• MJPEG
IP Camera Function	Yes – compatible profiles: <ul style="list-style-type: none">• ONVIF v2.4 profile S

Interface

LAN	10/100BASE-TX with Auto-MDIX, RJ-45
Recommended cabling	Cat-5e or higher
Supported protocols	SIP2.0, DHCP opt. 66, SMTP, 802.1x, RTSP, RTP, TFTP, HTTP, HTTPS, Syslog, ONVIF
Passive switch (relay)	NO/NC contact, up to 30 V / 1 A AC/DC
Active switch output	8 to 12 V DC according to power supply, up to 600 mA <ul style="list-style-type: none">• PoE: 10 V• adapter: source voltage –2 V

Mechanical Parameters

Cover	Robust aluminum cast product Color: <ul style="list-style-type: none">• metallic black, semi-matt (not RAL)
Front Panel	Aluminum cast <ul style="list-style-type: none">• Fiberglass FR4

Mechanical Parameters

Body material

- Black version:
 - Material - Zamak 410 - Zn95Al4Cu1
 - Surface treatment – PUR Wet coating 15–25 µm, RAL 25 Jet black, inner side - passivated zinc

Dimensions with frame

242 x 136 x 83 mm

Weight (depending on configuration)

Max. net

2 kg

Max. gross

2.5 kg

Operating temperature

–40 °C to 55 °C

Relative humidity

10 to 95 % (non-condensing)

Storing temperature

–40 °C to 70 °C

Recommended altitude

up to 2000 m

Protection class

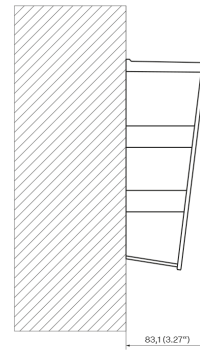
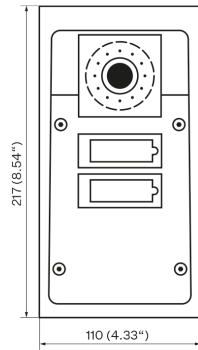
IP65, IP69K (91511xxxW), NEMA X4

Resistance level

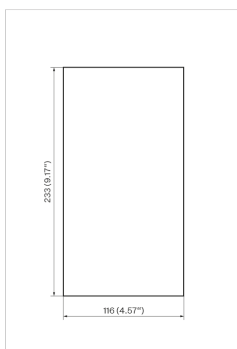
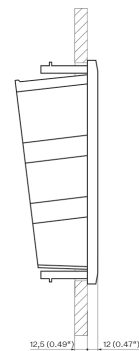
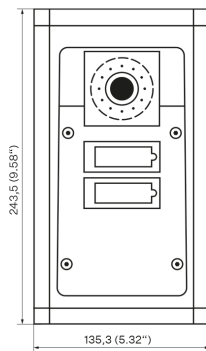
IK10

General Drawings

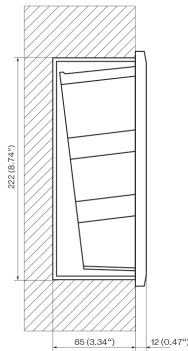
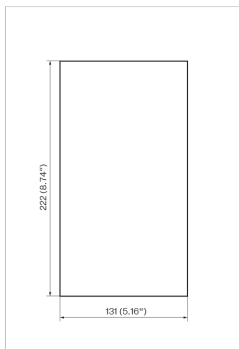
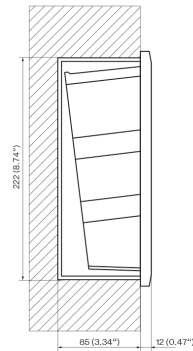
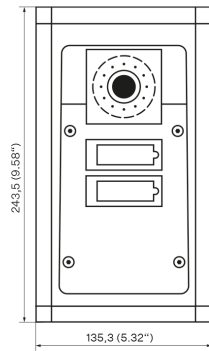
Surface Installation



Flush mounting – into plasterboard



Flush mounting – into classic masonry



General Instructions and Cautions

Please read this User Manual carefully before using the product and follow the instructions and recommendations included therein.

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.

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 unfavorable 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, procure software protection of the product. The manufacturer shall not be held liable for any damage incurred as a result of the use of deficient 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 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 to increased tariff lines.

Directives, Laws and Regulations

2N IP Force conforms to the following directives and regulations:

EU

- 2012/19/EU on waste electrical and electronic equipment

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

Industry Canada

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


Compliance with DDA:

The 2N Telekomunikace devices comply with the Disability Discrimination Act (DDA) of 2005 stipulating the following conditions:


1. The devices are mounted in such a manner that their bottom edges are 100 to 120 centimeters above the ground.
2. The devices use keypads with a mechanical protrusion on digit 5.
3. The devices use an electromagnetic loop as the hearing aid.

Legislation of Thailand

เครื่องโทรคมนาคมและอุปกรณ์นี้
ความสอดคล้องตามมาตรฐานหรือขอ
กำหนดทางเทคนิคของ กสทช.


nabp.

เครื่องวิทยุคมนาคมนี้ ได้รับยกเว้น ไม่ต้องได้
รับใบอนุญาตให้มี ใช้ซึ่งเครื่องวิทยุคมนาคม
หรือตั้งสถานีวิทยุคมนาคมตามประกาศ กสทช.
เรื่อง เครื่องวิทยุคมนาคม และสถานีวิทยุ
คมนาคมที่ได้รับยกเว้นไม่ต้องได้รับใบอนุญาต
วิทยุคมนาคมตามพระราชบัญญัติวิทยุคมนาคม
พ.ศ. 2498



nabp. | โทรคมนาคม
กำกับดูแลเพื่อประชาชน
Call Center 1200 (InswS)

Legislation of Japan

本製品は、特定無線設備の技術基準適合証明を受けています。

本製品は、シールドネットワークケーブル(STP)を使用して接続してください。また適切に接地してください。

本製品は電気通信事業者(移動通信会社、固定通信会社、インターネットプロバイダ等)の通信回線(公衆無線LANを含む)に直接接続することができません。本製品をインターネットに接続する場合は、必ずルータ等を経由し接続してください。

Electric Waste and Used Battery Pack Handling



General Instructions and Cautions

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

Deliver your expired household 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 IP Force – Installation Manual

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