Installation manual 2N® IP Uni

v.2.18

www.2n.com

Content:

1. Product Overview

Here is what you can find in this section:

Basic Features

2N® IP Uni is a highly resistant and reliable IP door access intercom provided with a lot of useful above-standard functions. Supporting the SIP standard and being compatible with the leading IP PBX and telephone suppliers, **2N® IP Uni** can make use of all VoIP services. **2N® IP Uni** can work as a standard or emergency door access intercom for buildings, entrances to premises or garages, manufacturing halls, highways and so on.

2N® IP Uni is equipped with a loudspeaker (1 W). Thanks to an integrated acoustic echo cancelling (AEC) system, the product provides mutual audibility even of persons talking at the same time under normal conditions.

2N® IP Uni can be provided with 1 or 2 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.

2N® IP Uni is equipped with an electric lock switch. You can control the switch during a call, using any telephone set.

2N® IP Uni is very easy to install. All you have to do is connect the system into your LAN via a network cable and feed it from a 12 V power supply or your PoE supporting LAN.

Configure **2N® IP Uni** using your PC via any web browser. Use the **2N® Access Commander** to manage extensive **2N® IP Uni** systems easily and quickly.

Advantages of Use

- Variable mounting options (brick/plasterboard flush mounting, wall mounting)
- Sensitive microphone and powerful loudspeaker
- Bidirectional communication – acoustic echo cancelling
- Optional dial buttons including name tags and backlight
- Integrated electronic lock switches with wide setting options
- LAN (PoE) or external 12 V power supply
- Configuration via web interface or dedicated PC application
- SIP 2.0 support
- HTTP server for configuration
- SNTP client for time synchronisation with server

1.1 Components and Associated Products

Basic Units

2N Part No. 9153101 **Axis Part No. 01361-001** 	• 1 button • control of one electric lock • protective switch
2N Part No. 9153102 **Axis Part No. 01362-001** 	• 2 buttons • control of one electric lock • protective switch

2N Part. No. 9153101P **Axis Part No. 01363-001** 	• 1 button, pictograms • control of one electric lock • protective switch

All **2N IP Uni** units can be flush mounted without requiring any additional accessories. Use the appropriate mounting box (see below) for wall (surface) mounting. **2N IP Uni** is designed for outdoor applications and requires no additional roof.

Mounting Accessories

2N Part No. 9153003 **Axis Part No. 01364-001** 	• Wall mounting box • (Al casting)
	• Brick flush mounting box • (included in the delivery)

2N Internal Units and Accessories

Part Numbers: **2N Part No. 91378375** **Axis Part No. 01668-001** **2N Part No. 91378376** **Axis Part No. 01670-001** 	• **2N Indoor Touch 2.0** - black • WiFi version (second part no.) • The elegant internal touch panel, **2N Indoor Touch 2.0**, is suitable for all **2N IP intercoms**. On the panel's display not only can you find out who is at the door, but also start a conversation with the visitor, open the lock or turn on the light in the entrance hall.
2N Part No. 91378382 **Axis Part No. 01425-001** 	• **2N Indoor Touch** desk stand black

Part Numbers:

2N Part No. 91378375WH

Axis Part No. 01669-001

2N Part No. 91378376WH

Axis Part No. 01671-001

- **2N Indoor Touch 2.0** - white
- WiFi version (second part no.)
- The elegant internal touch panel, **2N Indoor Touch 2.0**, is suitable for all **2N IP intercoms**. On the panel's display not only can you find out who is at the door, but also start a conversation with the visitor, open the lock or turn on the light in the entrance hall.

2N Part No. 91378382W **Axis Part No. 01426-001** 	• **2N Indoor Touch** desk stand white
2N Part No. 1120101W **Axis Part No. 02518-001** 	• **2N IP Handset** • answering unit • white color

2N Part No. 1120101B **Axis Part No. 02519-001** 	• **2N IP Handset** • answering unit • black color

IP Phones

2N Part No. 1120102 **Axis Part No. 02660-001** 	• **2N IP Phone D7A** • simple operation • HD quality video calls • A display-equipped extender EXP50 (Part No. **91378363**) can be added to the phone delivery to make up to 60 speed dialings.
2N Part No. 1120111EU **Axis Part No. 02544-001** 	• **Grandstream GXV3350 IP video phone** • Android 7.0 OS • 5” touch display control • HD quality video calls • WiFi and Bluetooth support • HDMI output and pan tilt zoom camera • Easy integration with intercoms or PBXs via SIP

Electric Locks

⚠ • These products have been removed from sale.

Part No. 11202101 	• **Mini electronic doorstrike series 5** • electric opener designed for door frame installation • intended for such narrow profiles as aluminum, wood or PVC in particular • short sheet metal front cover version (130 mm) • 16 mm width
Part No. 11202101-L 	• **Mini electronic doorstrike series 5 – long** • electric opener designed for door frame installation • intended for such narrow profiles as aluminum, wood or PVC in particular • long sheet metal front cover version (250 mm) • 16 mm width
Part No. 11202102 	• **Mini electronic doorstrike series 5 – with momentum pin** • electric opener designed for door frame installation • intended for such narrow profiles as aluminum, wood or PVC in particular • short sheet metal front cover version (130 mm) • 16 mm width

Part No. 11202102-L 	• **Mini electronic doorstrike series 5 – with momentum pin, long** • electric opener designed for door frame installation • intended for such narrow profiles as aluminum, wood or PVC in particular • long sheet metal front cover version (250 mm) • 16 mm width
Part No. 11202103 	• **Mini electronic doorstrike series 5 – with mechanical blocking** • electric opener designed for door frame installation • intended for such narrow profiles as aluminum, wood or PVC in particular • short sheet metal front cover version (130 mm) • 16 mm width
Part No. 11202103-L 	• **Mini electronic doorstrike series 5 – with mechanical blocking, long** • electric opener designed for door frame installation • intended for such narrow profiles as aluminum, wood or PVC in particular • long sheet metal front cover version (250 mm) • 16 mm width

Part No. 11202104 	• **Mini electronic doorstrike series 5 – door signaling** • electric opener designed for door frame installation • intended for such narrow profiles as aluminum, wood or PVC in particular • including a door state monitoring micro switch: open/closed • short sheet metal front cover version (130 mm) • 16 mm width
Part No. 11202104-L 	• **Mini electronic doorstrike series 5 – door signaling, long** • electric opener designed for door frame installation • intended for such narrow profiles as aluminum, wood or PVC in particular • including a door state monitoring micro switch: open/closed • long sheet metal front cover version (250 mm) • 16 mm width
Part No. 11202105 	• **Mini electronic doorstrike series 5 – fail-safe** • electric opener designed for door frame installation • intended for such narrow profiles as aluminum, wood or PVC in particular • under voltage: opener secured, blocked • at voltage interruption: opener unblocked, door can be opened • short sheet metal front cover version (130 mm) • 16 mm width

Part No. 11202105-L 	• **Mini electronic doorstrike series 5 – fail-safe, long** • electric opener designed for door frame installation • intended for such narrow profiles as aluminum, wood or PVC in particular • under voltage: opener secured, blocked • at voltage interruption: opener unblocked, door can be opened • long sheet metal front cover version (250 mm) • 16 mm width
Part No. 11202106 	• **Mini electronic doorstrike series 5 – fail-safe and door signaling** • electric opener designed for door frame installation • intended for such narrow profiles as aluminum, wood or PVC in particular • under voltage: opener secured, blocked • at voltage interruption: opener unblocked, door can be opened • short sheet metal front cover version (130 mm) • 16 mm width
Part No. 11202106-L 	• **Mini electronic doorstrike series 5 – fail-safe and door signaling, long** • electric opener designed for door frame installation • intended for such narrow profiles as aluminum, wood or PVC in particular • under voltage: opener secured, blocked • at voltage interruption: opener unblocked, door can be opened • long sheet metal front cover version (250 mm) • 16 mm width

Part No. 11202201 	• **Electromechanical lock SAM 7255** • 72/55 self-locking lock with panic function • A key is necessary for door opening from the outside (or an electric pulse from a connected 2N IP intercom / reader). • convenient solution for emergency exits
Part No. 11202201-M 	• **Electromechanical lock SAM 7255 with monitoring** • 72/55 self-locking lock with panic function • A key is necessary for door opening from the outside (or an electric pulse from a connected 2N IP intercom / reader). • convenient solution for emergency exits
Part No. 11202202 	• **Electromechanical lock SAM 9235** • 92/35 self-locking lock with panic function • A key is necessary for door opening from the outside (or an electric pulse from a connected 2N IP intercom / reader). • convenient solution for emergency exits

Part No. 11202202-M 	• **Electromechanical lock SAM 9235 with monitoring** • 92/35 self-locking lock with panic function • A key is necessary for door opening from the outside (or an electric pulse from a connected 2N IP intercom / reader). • convenient solution for emergency exits
Part No. 11202301 	• **Cable protector FX290** • Provides secure passage and protection of the supply cable between the door frame and the door leaf. • 290 mm length
Part No. 11202302 	• **Cable protector FX510** • Provides secure passage and protection of the supply cable between the door frame and the door leaf. • 510 mm length

Part No. 11202303 	• **Cable protector FX300G** • Provides secure passage and protection of the supply cable between the door frame and the door leaf. • 440 mm length
Part No. 11202304 	• **Cable protector FX500G** • Provides secure passage and protection of the supply cable between the door frame and the door leaf. • 640 mm length
Part No. 11202203	• **Supply cable with 14-core connector** • 6000 mm length • Conductor cross section: 14 × 0.22 mm • Terminated with a connector on one side • Designed for **11202201-M** and **11202202-M** locks
Part No. 11202107 	• **Maglock MEX100** • used as a door holding supplement, not replacing the lock • consists of two parts: supplied part and counterpart • under voltage: door cannot be opened • at voltage interruption: magnets get disconnected, door opens

Part No. 11202501 	• **Magnetic handle P300RP** • fully replaces a mortise lock and handle • under voltage: door cannot be opened • at voltage interruption: magnets get disconnected, door opens • suitable for wooden, metal and glass doors
Part No. 11202401 	• **ED100** • low energy simple door operator • contactless operation • can be interconnected with a motion sensor and electronic access control system • applicable for right / left doors • in / out opening versions

Tip

- FAQ: Electric locks – Difference between locks in 2N IP intercoms accesories

Power Supply

Part Numbers: **2N Part No. 91378100E** **2N Part No. 91378100US** **Axis Part No. 01403-001** 	• PoE injetor – with EU cable • PoE injector – with US cable • For power supply of intercom via ethernet cable when PoE switch is not available.
Part No. 91341481E 	• Stabilised 12 V / 2 A power supply needs to be used when no PoE is available.

Part No. 932928 	• 12 V transformer • For 230 V mains voltage. • For external power supply of the lock with 12 V AC voltage.

Additional Modules

2N Part No. 9159010 **Axis Part No. 01386-001** 	• **2N Security Relay** • A handy add-on that significantly enhances door entry security as it prevents tampering with the intercom and forced opening of the lock. To be installed between intercom and lock, powered by the intercom.
Part No. 9159013 	• Exit button • (suitable for Security relay) • A button for connection to a logic input for opening a door inside a building.

Part No. 9159014EU/UK **Part No. 9159014US** **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 existing wiring (2 wires) from your original door bell or door intercom to connect any IP device. You don't have to configure anything, and you only need one **2N 2Wire** unit at each end of the cable and a power source connected to at least one of these units. The **2N 2Wire** unit then provides PoE power not only to the second converter, but also to all other connected IP end devices.

2N Part No. 9159050 **Axis Part No. 01391-001** 	• **2N Induction Loop** • An induction loop transmits sound wirelessly from the **2N IP intercom** to the earphones of people with hearing disabilities and enables them to hear and perceive sounds better.
2N Part No. 9159052 **Axis Part No. 01393-001** 	• Stabilised 12 V / 2 A power supply needs to be used when no PoE is available.

Tip

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

1.2 Terms and Symbols

The following symbols and pictograms are used in the manual:

Safety

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

Warning

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

Caution

- **Important information** for system functionality.

Tip

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

Note

- Routines or advice for efficient use of the device.

2. Description and Installation

Here is what you can find in this section:

2.1 Before You Start

Product Completeness Check

Before you start please check the contents of your **2N® IP Uni** delivery:

- 1x **2N® IP Uni**
- 1x Torx 10 / Torx 20 double-ended wrench
- 1x brief manual
- 1x mounting template
- 1x A5 transparent name plate foil
- 1x spare name plate
- 1x brick flush mounting box
- 4x (4 x 12) mm stainless steel, torx screws for plastics
- 2x cable ties
- 4x frame seals
- 1x Certificate of ownership

2.2 Mechanical Installation

Content

Common Mounting Principles

Tip

- Select flush mounting where possible to make your product elegant looking, more vandal resistant and more secure.

Caution

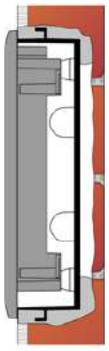
- Stainless steel screws are used for the **2N® IP Uni** assembly. Other screws than stainless steel ones corrode soon and may aesthetically deteriorate the surrounding environment!
- Having removed the front panel, make sure that no dirt gets inside the product (especially onto the sealing surface).

Caution

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

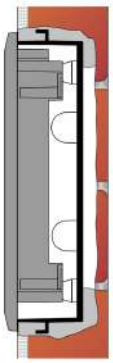
Flush Mounting – Classic Bricks

- (including hollow bricks, thermally insulated walls, etc.)

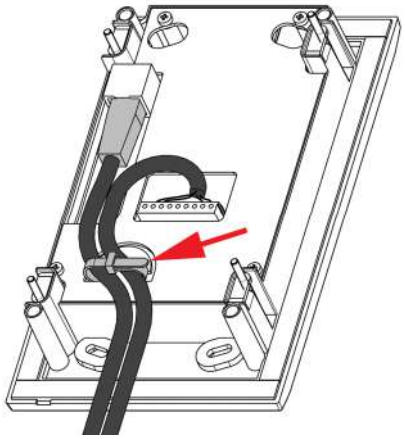


What you need:

- A properly cut hole
- Plaster, mounting glue, mounting foam or mortar as necessary



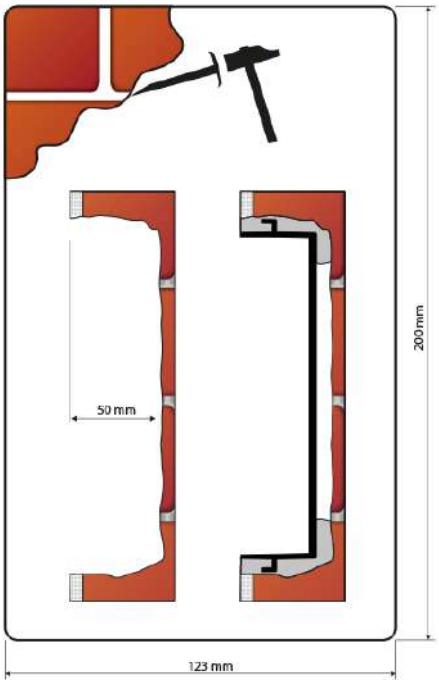
1. Cut a wall hole using the template enclosed. Make sure that all the required cables are available in the hole.
2. Unpack the plastic mounting box. Break out the cable holes as necessary and make sure that the wall hole is big enough for the box.
3. Wall up the mounting box making sure that the box is aligned with the wall surface. Wait until the plaster (mortar, mounting foam, etc.) sets.
4. Unscrew the front panel from the door intercom.
5. Connect the cables to the terminals or RJ connector as described in the **Electric Connection** subsection.
6. You can use the cable tie for connection as shown:



Mounting completion – after electric installation!

7. Insert the intercom in the mounting box in the wall.
8. Tighten the intercom with the stainless steel screws included in the delivery. As the screw holes are oval, you can perfect the vertical position before tightening.
9. We do not recommend you to insert the button tags now.
10. Replace the stainless steel front panel fixing it with the stainless steel screws you unscrewed in step 4 above.
11. Seal the top and lateral sides carefully with some cement or non-aggressive silicone to avoid water infiltration.

Make sure that the installation hole has the required dimensions for flush mounting. Dimensions are shown at the following picture.



Hole dimensions for flush mounting

Flush Mounting – Plasterboard

What you need:

- Just a properly cut hole

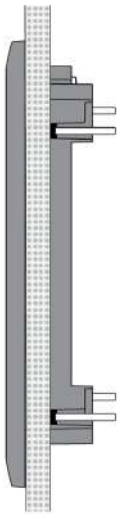
Tip

- If this is your first plasterboard installation, check the function of the intercom side clamps. Loosen and then re-tighten the clamp screw to see how it turns automatically and starts moving forwards in its slot. Remember to return the clamp into the original position after the check!

Caution

- Check the plasterboard wall and room interior pressure values (caused, e.g., by overpressure ventilation). If the difference between the values is too great, separate the intercom using, for example, the mounting box enclosed and seal the cable passage to avoid loudspeaker damage.

1. Cut a hole 100 (W) × 180 (H) mm.
2. Unscrew the front panel from the door intercom.
3. Connect the cables in the hole to the terminals or RJ connector as described in the **Electric Connection subsection Mounting completion – after electric installation!**
4. Insert the intercom in the hole keeping it in the vertical position.
5. Loosen the four clamp screws one after another and then retighten them slowly. They will turn aside automatically and start moving forwards in their slots. You need about **10 turns** to tighten the clamps completely. You can perfect the vertical position before final tightening of the screws.
6. We do not recommend you to insert the button tags now.
7. Replace the stainless steel front panel fixing it with the stainless steel screws you unscrewed in step 2.

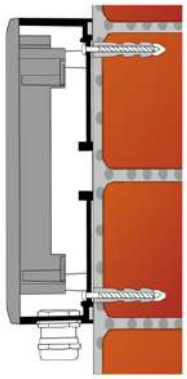


Wall Mounting

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

What you need:

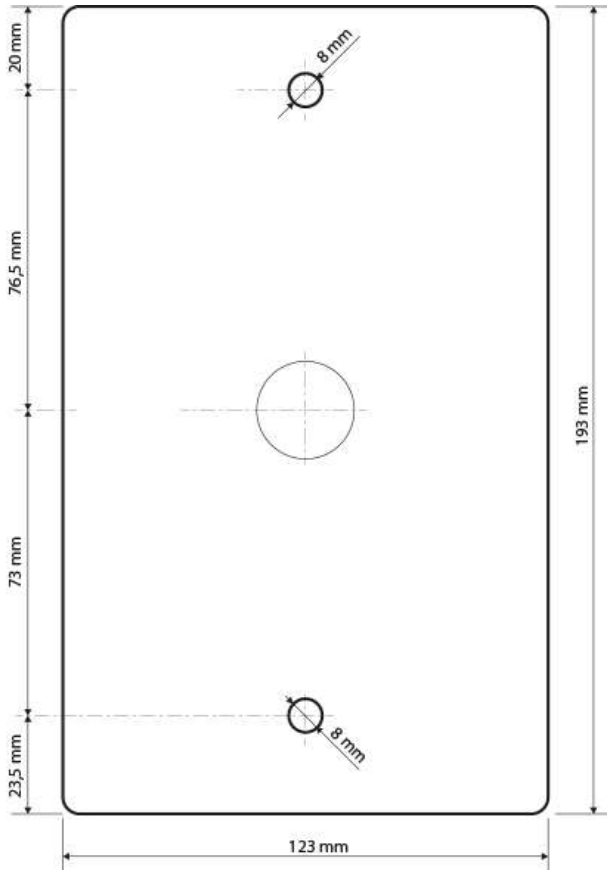
- Wall mounting box Part No. **9153003**



The **2N® IP Uni Al box**, (Part No. **9153003**) is designed for wall mounting especially where flush mounting is impossible such as on carrier elements of industrial objects.

Mounting instructions:

1. a) If the cable wall outlets are located directly under the intercom to be installed, move the cap from the middle hole to the bottom one to make way for the cables. Make sure that no water can get into the intercom through the middle hole! The best solution is to seal the hole perfectly with silicone, for example.
   b) If the cables lead along the wall below the intercom level, put the template to the wall in its normal position – the bushing will be on the bottom side.
   c) If the cables lead along the wall above the intercom level, put the template to the wall reversely – the bushing will be on the upper side.
2. Use an 8 mm drill to drill two holes of the minimum depth of 50 mm with the aid of the template.
3. Push the dowels into the holes and attach the box and screws. Perfect the box position using the oval holes before tightening the screws completely.
4. Connect the cables to the intercom as instructed.
5. Mount the intercom without the front panel to the box using the M4 screws included in the delivery.
6. Screw the front panel onto the intercom.
7. Tighten the cable bushing properly to fix the cables especially where the bushing is on the upper box side to avoid water leakage!



Dimension for wall (surface) mounting

2.3 Electric Installation

This subsection describes how to connect **2N® IP Uni** into your Local Area Network (LAN) and how to connect supply voltage and the electric lock.

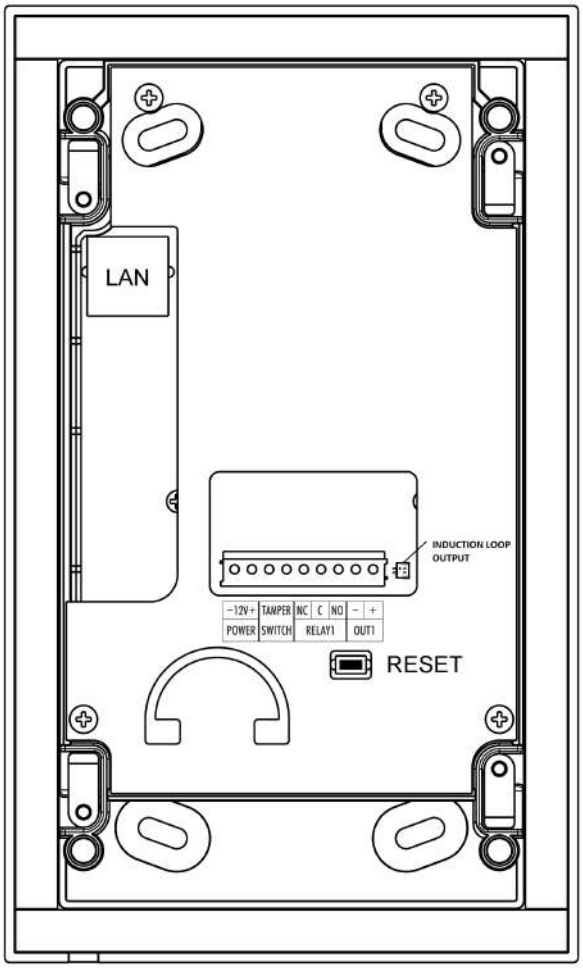
Caution

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

PCB Connectors

Description of Connectors

- **LAN** – LAN connector
- **OUT1** – Active switched output
- **RELAY1** – Relay NO/NC contacts. Used for connection of non-critical devices only (lights, e.g.).
- **TAMPER** – Tamper switch
- **POWER** – Power input
- **RESET** – RESET button
- **INDUCTION LOOP OUTPUT** – Output for 2N® Induction Loop. Connector type JST SHR-02V-S.



LAN Connection

2N® IP Uni is connected to the LAN via a RJ-45 terminated (connector LAN) UTP/STP cable (of category Cat 5e or higher). The system is equipped with the Auto-MDIX function and so both the straight and crossed cable versions can be used

Caution

- We recommend the use of a LAN surge protection.
- We recommend the use of a shielded SSTP Ethernet cable.

External Power Supply Connection

2N® IP Uni can be fed either from an external 12 V / 2 A DC power supply or from the LAN equipped with the PoE 802.3af supporting network elements.

External Power Supply

An external 12 V power supply is connected to terminal block POWER. Use a 12 V ±15 % DC power source dimensioned to current intake of 2 A at least (Part No. 91341481E) to ensure a reliable function of your device.

PoE Supply

2N® IP Uni is compatible with the PoE 802.3af (Class 0 – 12,95 W) technology and can be supplied directly from the LAN via compatible network elements. If your LAN in incompatible, insert the PoE injector, Part No. **91378100E/US**, between

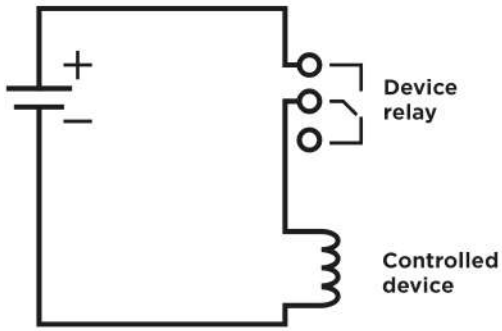
2N® IP Uni and the nearest network element.

Electric Lock Connection

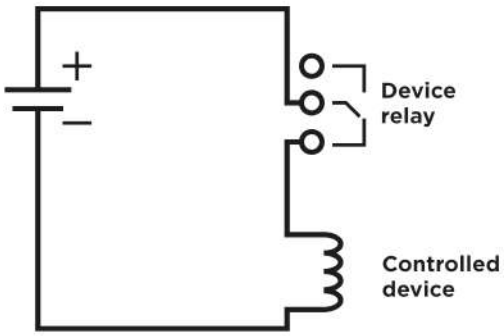
2N® IP Uni is equipped with active switched output 8 up to 12 V DC depending on power supply (PoE: 9 V; adaptor: power supply voltage minus 2 V), max 600 mA, switched output (terminal block OUT1), to which a standard electric lock or another compatible electrical appliance can be connected.

Tip

- Output wiring diagram for Relay terminals



Wiring diagram for the controlled device’s electric circuit closing



Wiring diagram for the controlled device’s electric circuit opening

Warning

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

Note

- Both outputs OUT1 and RELAY1 are switched always simultaneously.

Tamper Switch Connection

2N® IP Uni is equipped with a tamper switch for detection of unauthorized penetration into the device. After correct and complete installation of the device the tamper switch is closed. Tamper switch opens immediately when the front panel is removed. Tamper switch contacts are available on terminal block TAMPER SWITCH.

Device Resetting

2N® IP Uni is equipped with a RESET button. Push the button for 30 s to reset the factory default values, deleting all the data stored in the device.

Caution

- In case of resetting the factory default settings on a device with a version of firmware 2.18 or higher it is necessary to reprogram the **2N® Security Relay** using the instructions from section 2.5 Extending Module Connection.

Device Restarting

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

Note

- The time interval between the short press of RESET and reconnection after restart is 30 s for **2N® IP UNI**.

2.3.1 Overvoltage Protection

Recommendations for Additional Overvoltage Protection Installation

If running:

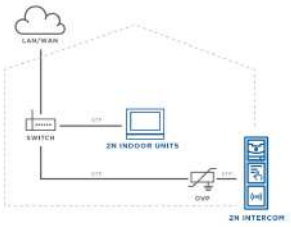
a) outside a building,

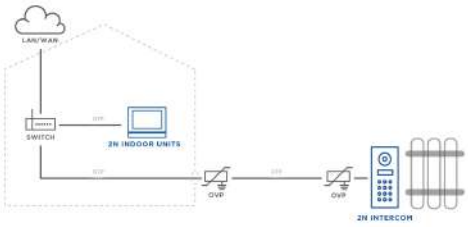
b) on/in an outer wall or roof,

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

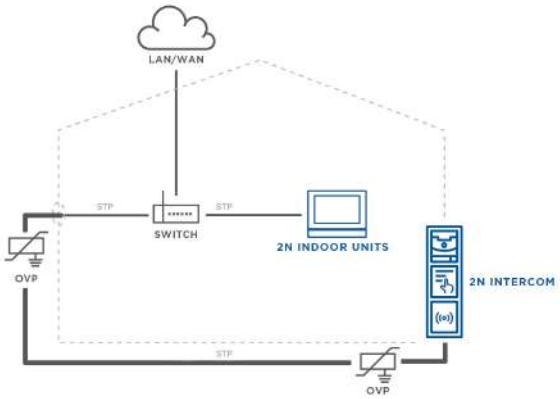
a) as close as possible to the device installed outside the building or on its outer wall/roof,

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





OVP = overvoltage protection



2.4 Button Tags

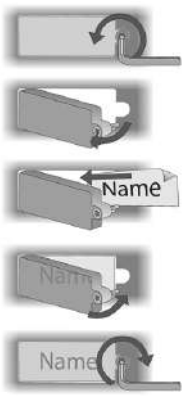
This subsection describes work with Button Tags in **2N® IP Uni**.

Tag Printing

1. Every **2N® IP Uni** delivery includes a sheet of translucent foil, which can be laser-printed. Cut the printed foil and insert the tags in the name plates (template for printing is available in section Downloads).
2. Every name plate includes a piece of foil, which can be written over manually, using a waterproof permanent marker, if necessary.

> **Note**
>
> - Always use waterproof foil (enclosed or other) for the tags. Never use paper or ink jet printing to avoid damage due to water leakage!

Tag Inserting/Replacing Instructions



2N® IP Uni provides an intuitive, easy access to the name plates. The tags are easy to insert and replace even without a manual. You need not remove the front panel and thus are not exposed to the risk of loss of components while replacing the tags.

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 buttons: 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 either end.

2.5 Extending Module Connection

2N IP Uni allows to connect following extending modules:

- Security Relay
- Induction Loop

> **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, it is necessary to update the device firmware after the modules are connected. Use the device web interface in the System > Maintenance > System configuration section for firmware upgrade (see Configuration manual for 2N IP intercoms).

Security Relay

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

Function:

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

Specifications:

Passive switch: NO and NC contacts, up to 30 V / 1 A AC/DC

Switched output:

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

Dimensions: 66.5 x 32.5 x 20.5 mm

Weight: 24 g

Installation:

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

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!

Connection:

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

- To the intercom active output (OUT1)

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

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

The device also supports a Departure button connected between the ‘PB’ and ‘- HeliosIP/IP Intercom’ terminals. Press the Departure button to activate the output for 5 seconds.

Status signalling:

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

Configuration:

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

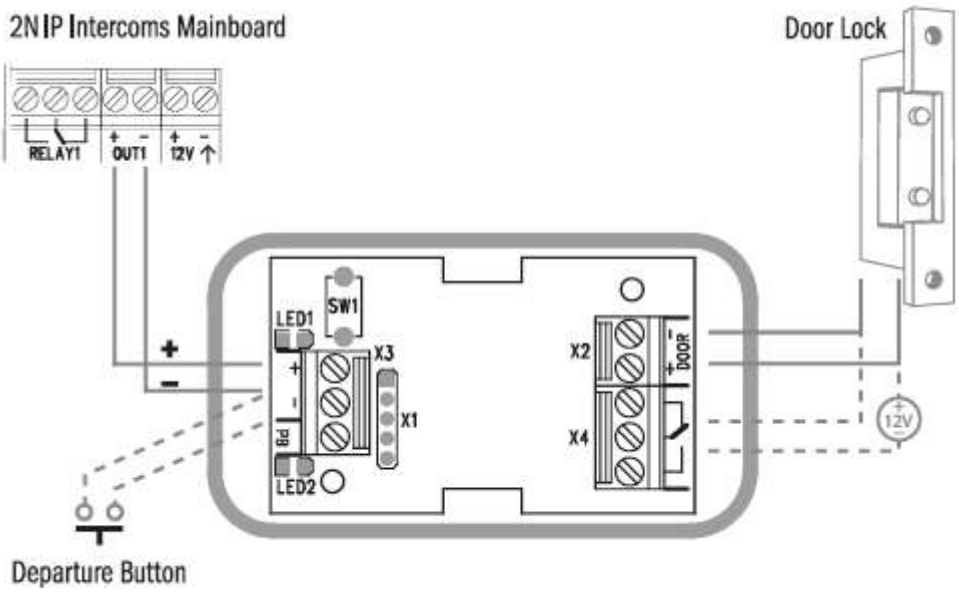
Caution

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

Tip

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

Connection:



Tip

Video Tutorial: Security Relay Installation and Configuration

Sorry, the widget is not supported in this export.
But you can reach it using the following URL:
https://www.youtube.com/watch?v=ardukvQzw5A

Induction Loop

2N Induction Loop (Part No. 9159050 – Induction loop amplifier for **2N IP intercom**, Part No. 9159054 – Induction loop amplifier without **2N IP intercom** accessory, Part No. 9159052 – 12 V DC power adapter) is part of sound system installations for hearing impaired persons that are equipped with a special hearing aid capable of receiving reproduced sound via a magnetic field receiver. The system is defined by the IEC 60118-4 standard.

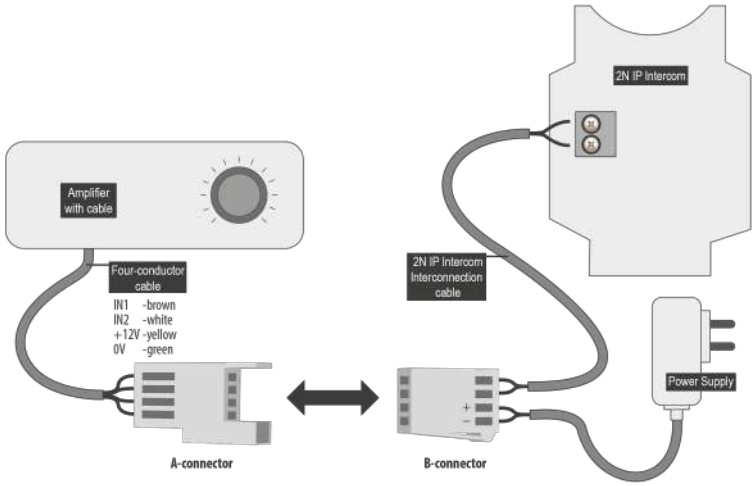
Installation:

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 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 colour marking.

Before wall mounting run the cable through the hole that you have prepared. Then mark two mounting holes on the wall, through the amplifier front. Remove the amplifier and drill the mounting holes. Use the plugs and screws included in the delivery. Use a drill of the diameter of 6 mm. After fastening, cover the screws with the blanks supplied.

Use the supplied connectors to connect the amplifier to the intercom and power supply. The A connector is connected to the amplifier four-wire cable. 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. You can place the mated A and B connectors into the 2N IP intercom 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.

Finally, test the amplifier function using a suitable receiver for hearing impaired persons or magnetic field communication tester. No other settings are required.



Specifications:

- 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; 400 mA, pink noise signal

    - no signal; 100 mA
    - standby; up to 10 mA
- Transition to standby w/o signal: 10 s
- Input level – basic: 100 mV – 6 V_{rms}
- Input level – increased: 1 V – 35 V_{rms}
- Input impedance: 2 kΩ parallel with 0.3 H
- Output current, 1 Ω load: 2.2 A_{rms} (sine wave)
- Full power output: 1.6 A_{rms} (pink noise)
- Output current, 8 Ω load: 730 mA_{rms} sine wave signal
- Half power output: 520 mA_{rms} pink noise signal
- Output short-circuit resistance: unlimited time
- Frequency characteristics: 100 Hz – 5KHz ±3 dB
- Temperature range: -20 – +50 °C
- Covering: IP65 (with round cable of 5–10 mm diameter)
- Dimensions: 144 x 100 x 31 mm
- Weight: 0.3 kg

3. Function and Use

In this section we describe the basic and extending functions of the **2N® IP Uni** product.

Here is what you can find in this section:

3.1 Configuration

2N® IP Uni Use a PC equipped with any web browser to configure:

- Launch your web browser (Internet Explorer, Firefox, etc.).
- Enter the IP address of your intercom (http://192.168.1.100/, e.g.).
- Log in using the **Admin** user name and **2n** password.

You have to know the IP address of your device to log in to the integrated web server. By default, **2N® IP Uni** is switched into the dynamic IP address mode, i.e. it obtains the IP address automatically if a properly set DHCP server is available in your LAN. If no such DHCP server is available, you can operate **2N® IP Uni** in the static IP address mode.

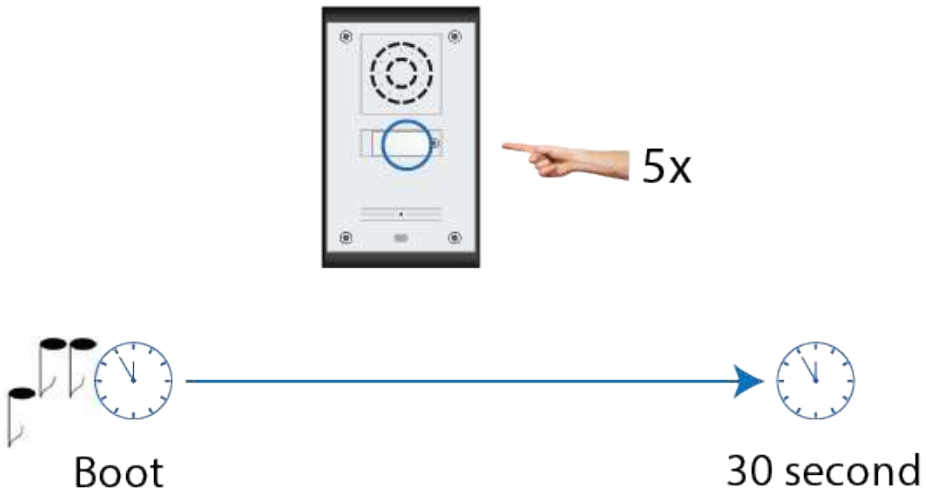
Refer to the Configuration manual for 2N IP intercoms for **2N® IP Uni** configuration details.

If your device remains inaccessible (you have forgotten the IP address, or the LAN configuration has changed, for example), change the LAN settings using the buttons on the device.

IP Address Retrieval

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

- Connect (or, if connected, disconnect and reconnect) **2N® IP Uni** to the power supply.
- Wait for the second sound signal .
- Press the quick dial button 5 times.
- **2N® IP Uni** will read its IP address.
- If the address is 0.0.0.0, it means that the intercom has not obtained the IP address from the DHCP server.



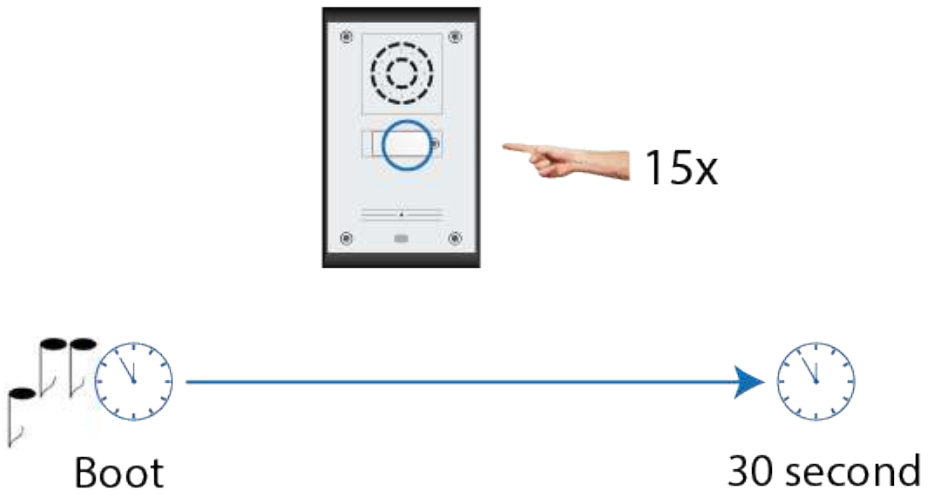
Note

- 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.

Static/Dynamic Address Setting Mode Switching

In case your **2N® IP Uni** device is equipped with 1 or 2 buttons, you can switch the modes using one button only.

- Connect **2N® IP Uni** to the power supply (or, disconnect and reconnect it if already connected).
- Wait for the first sound signal .
- Press the quick dial button on the main unit 15 times.
- Network parameter reset and DHCP switch are signaled by the sound.
- For devices with FW versions 2.33 and lower, wait until the device is automatically restarted.
  - After restart, the static IP address mode is switched into the dynamic IP address and vice versa.
- Simultaneously, all the **System / Network** parameters are reset to default values. This is useful where it is impossible to connect to the device due to wrong VPN configuration, for example.



Caution

- The 15 times 1 sequence must be entered within 30 seconds after the first sound signal for security reasons. The inter-digit delay may be 2 s at most.

The static IP address mode will be switched into the dynamic IP address mode and vice versa upon restart.

Firmware Upload

We also recommend you to update your intercom firmware upon the first login to the intercom. Use the device web interface in the System > Maintenance > System configuration section for firmware upgrade (see Configuration manual for 2N IP intercoms). Refer to 2N.com for the latest firmware version. The device restarts automatically after the upgrade is completed successfully. The whole process takes almost one minute.

3.2 Control

This subsection describes how to control **2N® IP Uni** when viewed by an external user.

Speed Dial Buttons

Press the speed dial buttons on the basic unit to make quick dialling for the first 1 or 2 (depending on the model type) in the telephone directory. Call setup is signalled by a long intermittent tone or otherwise as configured in the PBX connected.

Repeated pressing of one and the same speed dial button during call setup may initiate call termination, or call termination plus dialling the next telephone number of the called subscriber, or may be assigned no function.

3.3 Maintenance

Cleaning

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

- Never use aggressive detergents (such as abrasives or strong disinfectants)
- Alcohol-based cleaners may be applied.
- Clean the device in dry weather in order to make waste water evaporate quickly.
- We recommend using cleaning wipes designed for IT / electronic items.

Warning

- Avoid peroxide-based cleaners.

Future Tag Replacement, Programming Changes

For necessary steps refer to the preceding subsections. Keep the following for future changes:

- This manual
- Unused transparent foil strips for button tags

Caution

- Always use the product for the purpose it was designed and manufactured for, in compliance herewith.
- The manufacturer reserves the right to modify the product in order to improve its qualities.
- **2N® IP Uni** contains no environmentally harmful components. When the product's service life is exhausted and you would like to dispose of it please do so in accordance with applicable legal regulations.

3.4 Downloads

Templates

Nametags

Software

2N® Network Scanner

4. Technical Parameters

Signalling protocol

- **SIP (UDP, TCP)**

Buttons

- **Button design:** Transparent, white backlit buttons with easily replaceable name tags
- **Button count:** 1 or 2

Audio

- **Microphone:** 1 integrated microphone
- **Amplifier:** 1 W (class D)
- **Loudspeaker:** 1 W
- **Sound pressure level (SPL max):** 77.5 dB (for 1 kHz, distance 1 m)
- **Volume control:** Adjustable with automatic adaptive mode
- **Full duplex:** Yes (AEC)

Audio stream

- **Protocols:** RTP
- **Codecs:** G.711 (PCMU and PCMA)

Bandwidth

- **Audio codecs**
    - PCMA, PCMU – 64 kbps (with 85.6 kbps headers)

Interfaces

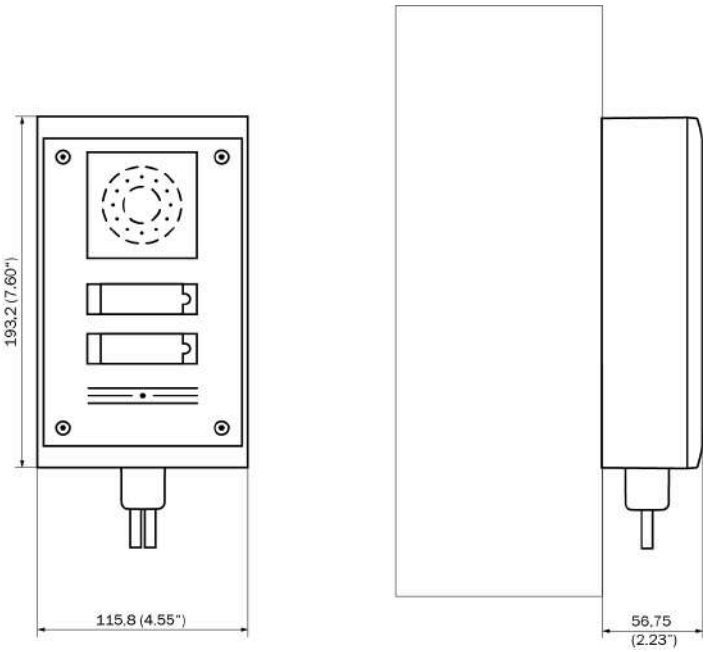
- **Power supply:** 12 V ± 15 % / 2 A DC or PoE
- **PoE:** PoE 802.3af (Class 0 – 12.95 W)
- **LAN:** 10/100BASE-TX s Auto-MDIX, RJ-45
- **Recommended cabling:** Cat-5e or higher
- **Passive switch:** NO and NC contacts, up to 30 V / 1 A AC/DC
- **Active switch output:** 10 up to 12 V DC, max 3500 mA

Mechanical properties

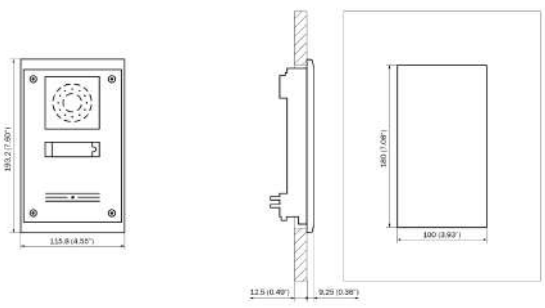
- **Cover:** ABS plastic, high-quality stainless steel
- **Working temperature:** −40 °C to 55 °C
- **Working relative humidity:** 10 % to 95 % (non-condensing)
- **Storing temperature:** − 40 °C to 70 °C
- **Dimensions**
  - (193 x 115 x 39) mm
  - (197 x 119 x 47) mm with flush mounting box
  - (193 x 115 x 57) mm for wall mounting
- **Weight**
  - Product net weight: 500 g
  - Mounting box: 135 g
  - Total weight incl. package: 800 g
- **Covering level:** IP54
- **Resistance level:** IK10

4.1 General drawings

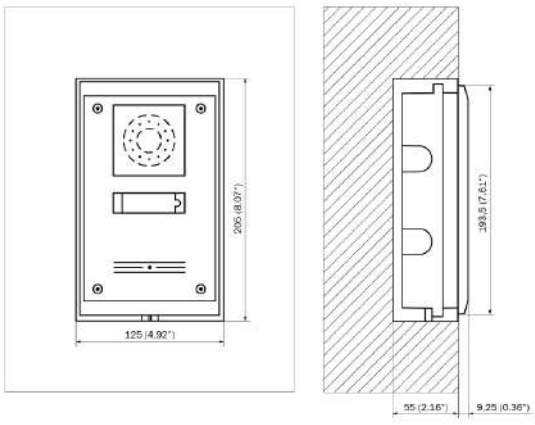
Surface mounting



Flush mounting



Plasterboard mounting



Flush mounting with box

5. Supplementary Information

Here is what you can find in this section:

5.1 Troubleshooting

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

5.2 Directives, Laws and Regulations

2N® IP Uni conforms to the following directives and regulations:

- 2014/35/EU for electrical equipment designed for use within certain voltage limits
- 2014/30/EU for electromagnetic compatibility
- 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment
- 2012/19/EU on waste electrical and electronic equipment

Industry Canada

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

FCC

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules.

NOTE: These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected

- Consult the dealer or an experienced radio/TV technician for help

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

Caution

Warning
In order to ensure the full functionality and guaranteed performance, we strongly recommend that the topicality of the product / device version in use be verified as early as in the installation process. The customer hereby acknowledges that the product / device can achieve the guaranteed performance and full functionality pursuant to the manufacturer's instructions only if the latest product / device version is used after having been tested for full interoperability and not having been determined by the manufacturer as incompatible with certain versions of other products, and only in conformity with the manufacturer's instructions, guidelines or recommendations and in conjunction with suitable products and devices of other suppliers. The latest versions are available at https://www.2n.com/cs_CZ/ or can be updated via the configuration interface if the devices are adequately technically equipped. Should the customer use a product / device version other than the latest one or a version determined by the manufacturer as incompatible with certain versions of other products, or should the customer use the product / device in contradiction to the manufacturer's instructions, guidelines or recommendations or in conjunction with unsuitable products / devices of other suppliers, the customer is aware of and agrees with all functionality limitations of such a product / device if any as well as with all consequences incurred as a result thereof. Using a product / device version other than the latest one or a version determined by the manufacturer as incompatible with certain versions of other products, or using the product / device in contradiction to the manufacturer's instructions, guidelines or recommendations or in conjunction with unsuitable products / devices of other suppliers, the customer agrees that the 2N TELEKOMUNIKACE a.s. company shall not be held liable for any functionality limitation of such a product or any damage, loss or injury related to this potential functionality limitation.

5.3 General Instructions and Cautions

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Electric Waste and Used Battery Pack Handling

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

Deliver your expired electric appliances and battery packs removed from them to dedicated dumpsites or containers or give them back to the dealer or manufacturer for environmental-

friendly disposal. The dealer or manufacturer shall take the product back free of charge and without requiring another purchase. Make sure that the devices to be disposed of are complete.

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