iLOQ 5 Series

iLOQ N500 Net Bridge
iLOQ N502 Online Door Module
iLOQ N507 Online I/O Module

Installation and deployment



04/2025
Rev. 1.1

Document ID
310092

iLOQ Oy
support.iloq.com

Contents

1. Safety information 4
1.1 Safety signs 4
1.2 General warnings 5
2. Important 6
2.1 This document 6
2.2 Before installation 6
2.3 Licenses 7
3. Installation of the devices 8
3.1 Device dimensions 8
3.2 Overview of the iLOQ N500 Net Bridge 9
3.2.1 Installing the iLOQ N500 Net Bridge 9
3.3 Overview of the iLOQ N502 Online Door Module 10
3.3.1 Installing the iLOQ N502 Online Door Module 11
3.4 Overview of the iLOQ N507 Online I/O Module 12
3.4.1 Installing the iLOQ N507 Online I/O Module 13
4. Wiring the system 14
4.1 Connection points and additional information 14
4.2 Example of wiring for the iLOQ N500-N502 16
4.3 Example of wiring for the iLOQ N500-N507 17
5. The setup process 18
5.1 Setup 18
5.2 How to perform the setup 18
5.3 Troubleshooting the setup process 21
5.3.1 The setup process does not find all the devices: 21
5.3.2 NFC Readers blinking blue after the setup 21
6. iLOQ Manager 22
6.1 Adding a network module to the iLOQ Manager 22
6.2 Adding the iLOQ N502 or iLOQ N507 as a lock 23
6.3 Editing the settings of a network module (Net Bridge) 23
6.4 Editing the settings of an N501/2 Lock (Door Module) 23
6.5 Editing the settings of an iLOQ N507 Online I/O Module lock 24
6.6 Typical things to look at in the iLOQ Manager 27
6.7 Updates 28
7. Programming 29
7.1 Programming the devices for the first time 29
7.2 Programming additional N502/N507 modules 31
7.3 Typical cases in the field 31

8. N502 Operation modes 33
8.1 Setting operation modes 33
8.1.1 Default operation mode 34
8.1.2 Door contact bypassing mode 35
8.1.3 Alarm status mode 36
8.1.4 Scandinavian special mode 37
10. Replacement and disposal 39
10.1 Disposal of decommissioned products 39
11. Compliance 40

1. Safety information

1.1 Safety signs

Sign	Description
	Electrical hazard. Indicates the presence of a hazard which could result in personal injury. Before working on any equipment, be aware of the hazards involved with electrical circuitry, and get familiar with standard practices for preventing accidents.
	General warning sign. Indicates the presence of a hazard which could result in personal injury, equipment damage, or loss of data.
	General notice sign. Indicates particularly important information about the installation and deployment.
	Read these instructions carefully before installation. This information is to ensure your safety and the long lifetime of the products installed.
	Use protective gloves.

1.2 General warnings

	Make sure that the power supply to the installation site is disconnected during installation. Do not switch on the power supply until the installation is complete.
	iLOQ devices must be installed and used effortlessly without the use of excessive force.
	Products should not be modified in any way except in accordance with the modifications described in these instructions.
	Installation should only be performed by a qualified technician.
	Use protective gloves during installation to avoid personal injury.

2. Important

2.1 This document

This document contains installation and deployment instructions for the iLOQ N500 Net Bridge, iLOQ N502 Online Door Module and the iLOQ N507 Online I/O Module. The iLOQ N500 Net Bridge acts as a link between the iLOQ server and the door modules and other bus devices. Install the net bridge in a secure interior space not accessible to the public, such as a technical room, that is equipped with an Ethernet connection and an AC outlet. The net bridge acts as the host for the door module; it does not work independently. The door module is a bus device installed in the vicinity of a door. The door module controls the devices installed in the door, such as lock cylinders, readers, electronic locks, electric strike plates, magnetic locks, etc.



WARNING! The door module is intended to be installed in dry indoor conditions.

For more information about the iLOQ 5 Series Online System, please visit support.iloq.com.

2.2 Before installation

iLOQ does not sell or provide products that require installation by an official electrician. Installation should still be performed by a qualified installer to avoid personal injury and product damage. Before proceeding with installation, read and understand the **Safety Information** thoroughly.



NOTE! If the IP address and other network settings shared by the DHCP server are used both at the office and at the installation site, you can test the server connection without the bus devices in the office before installation on-site.



NOTE! Read these instructions carefully before installation. This information is to ensure your safety and the long lifetime of the installed products. After use, make sure that these instructions are passed on from the installer to the user.

2.3 Licenses

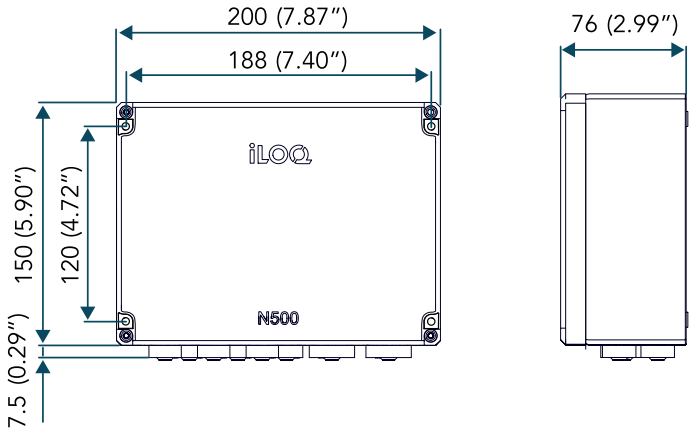
The iLOQ N500 Net Bridge requires that the online license is activated in the locking system but does not reserve network module device licenses. A license is required for each device connected to the main bus. In other words, each key programming hot spot, door module and I/O card requires a license. If the key programming hot spot is connected to the door module as a door controlling reader, it does not require a separate license.

All door modules that are programmed as locks require an offline lock license in addition to the online license. More detailed information on the available licenses can be found in the iLOQ Partner Portal and in the iLOQ 5 Series product price list.

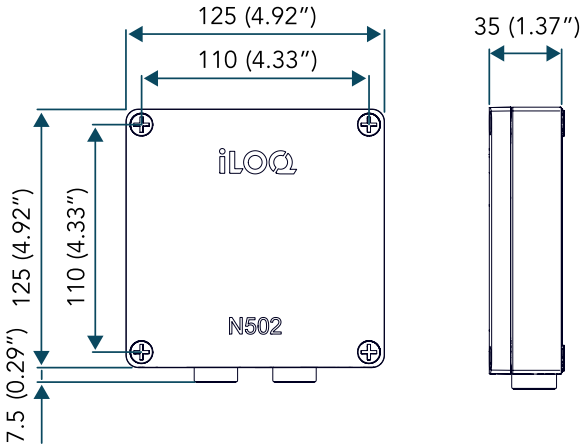
3. Installation of the devices

3.1 Device dimensions

iLOQ N500 Net Bridge &
iLOQ N507 Online I/O Module



iLOQ N502 Online Door Module



3.2 Overview of the iLOQ N500 Net Bridge

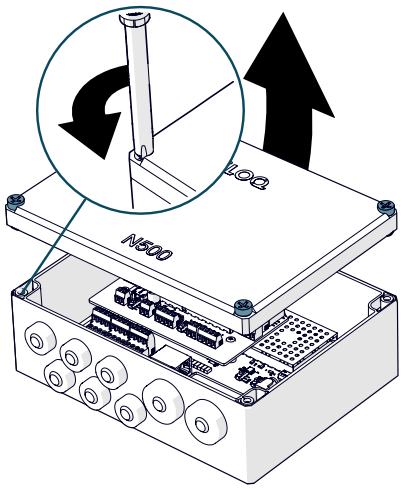
The iLOQ N500 Net Bridge acts as the central unit of an iLOQ Online system. The iLOQ N500 Net Bridge acts as a link between the iLOQ Cloud, the door modules and other bus devices. The iLOQ N500 Net Bridge allows the administrator to remotely control locks and keys with the iLOQ Manager without the need to visit the installation site.

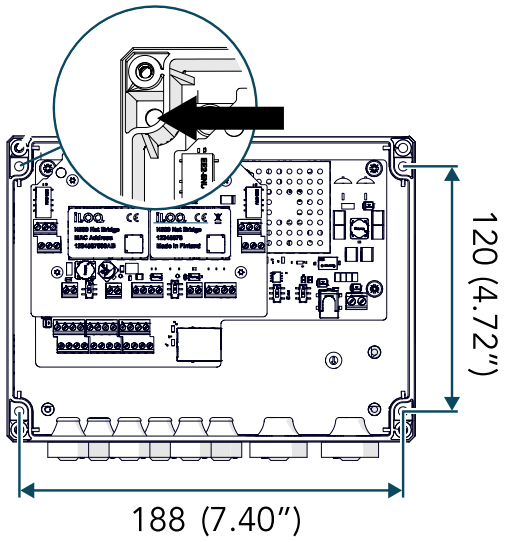
The iLOQ N500 Net Bridge is installed in a secure interior space not accessible to the public, such as a technical room, that is equipped with an Ethernet connection and an AC outlet. The iLOQ N500 Net Bridge is connected to the iLOQ Cloud via a LAN network and it has an RS-485 bus for connecting iLOQ N502 Online Door Modules, iLOQ NFC Readers, and iLOQ N507 Online I/O Modules. The iLOQ N500 Net Bridge can be powered by a DC power supply or alternatively PoE/PoE+. PCB and thru-hole insulation are pre-installed in the enclosure.

NOTE! The wall material of the installation site may affect the choice of the needed mounting screws.

3.2.1 Installing the iLOQ N500 Net Bridge

1. Open the plastic fixing screws to open the enclosure cover.
2. Use the fixing points at the bottom of the screw channel to attach the enclosure to the wall.
3. Close the enclosure cover with the plastic fixing screws, after finalizing the setup and programming.





3.3 Overview of the iLOQ N502 Online Door Module

The iLOQ N502 Online Door Module is a bus device located near a door, and it controls the devices installed on the door environment, such as iLOQ C5 Lock Cylinders, iLOQ NFC Readers, electric locks, door automation, and so on. The iLOQ N502 Online Door Module is hosted by an iLOQ N500 Net Bridge; it does not operate independently.

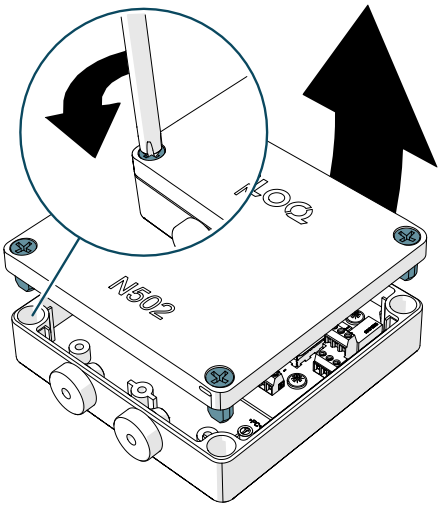
The iLOQ N502 is installed in a secure interior space not accessible to the public. The iLOQ N502 is connected to an N500 Net Bridge via RS-485 bus wiring. The iLOQ N502 has a separate RS-485 reader bus for connecting iLOQ NFC Readers. The iLOQ N502 has two potential free relays, which, based on the selected operation mode, can be controlled by placing a valid iLOQ key to a connected iLOQ NFC Reader or C5 Cylinder, with group access codes or with direct calendar controls from the iLOQ Cloud. iLOQ HOME can also be used to remotely control the relays. Other information such as door status information can be collected via the iLOQ N502 inputs to the iLOQ Cloud. From a system point of view, the iLOQ N502 is a lock that needs to be programmed to operate as a lock. Programming is done via a connected iLOQ NFC Reader's NFC using the iLOQ Manager software and the P55S Programming key or via the iLOQ Cloud connection that is provided by the iLOQ N500 Net Bridge. Access rights, time limitations and other settings of the iLOQ N502, and the connected C5 Cylinders, can be remotely updated at any time. PCB and thru-hole insulations are pre-installed in the enclosure.

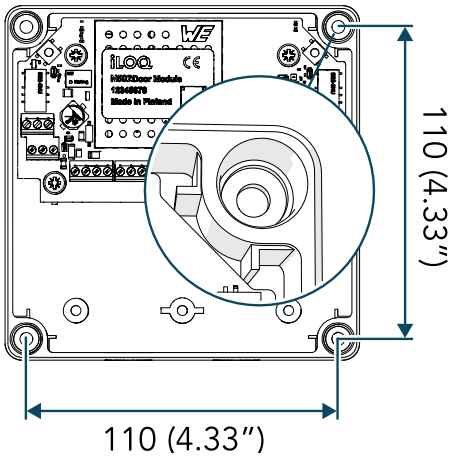


NOTE! The wall material of the installation site may affect the choice of the needed mounting screws.

3.3.1 Installing the iLOQ N502 Online Door Module

1. Open the plastic fixing screws to open the enclosure cover.
2. Use the fixing points at the bottom of the screw channel to attach the enclosure to the wall.
3. Close the enclosure cover with the plastic fixing screws, after finalizing the setup and programming.





3.4 Overview of the iLOQ N507 Online I/O Module

The iLOQ N507 Online I/O Module is installed in a secure interior space not accessible to the public, such as a technical room, and it controls iLOQ NFC Readers, slave N507 Online I/O Modules and the devices connected to its relay outputs. The iLOQ N507 is hosted by an iLOQ N500 Net Bridge; it does not operate independently.

The iLOQ N507 has an RS-485 bus for connecting an iLOQ NFC Reader and stacked N507 Online I/O Module to work as a slave cards. The iLOQ N507 has 10 potential free relays, which, based on the selected Access right – Relay matrix, can be controlled by placing a valid key to a connected iLOQ NFC Reader. A valid key access can activate one or several relays at once and the possibility to stack a maximum of five N507 allows a user to activate all, or a combination, of a maximum of 50 relays at once. Similarly, there are 10 Inputs per iLOQ N507 that can also be defined to activate one or several relays at once when activated. From a system point of view, the iLOQ N507, that is connected to the iLOQ N500 Net Bridge, is a lock that needs to be programmed to operate as a lock. Programming of the iLOQ N507 is done via a connected iLOQ NFC Reader's NFC using the iLOQ Manager software and the P55S Programming key or via the iLOQ Cloud connection that is provided by the iLOQ N500 Net Bridge. Access rights, time limitations and other settings of the iLOQ N507 can be remotely updated at any time. PCB and thru-hole insulations are pre-installed in the enclosure.



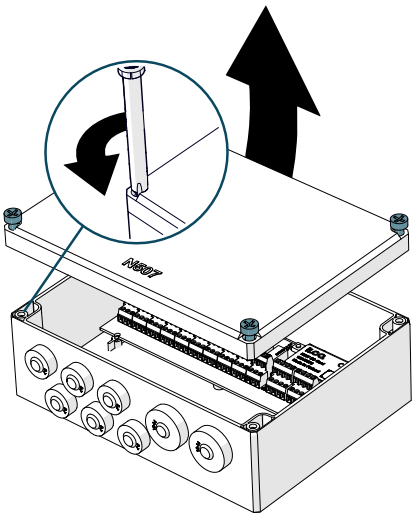
WARNING! The iLOQ N507 Online I/O Module is intended to be installed in dry indoor air conditions.

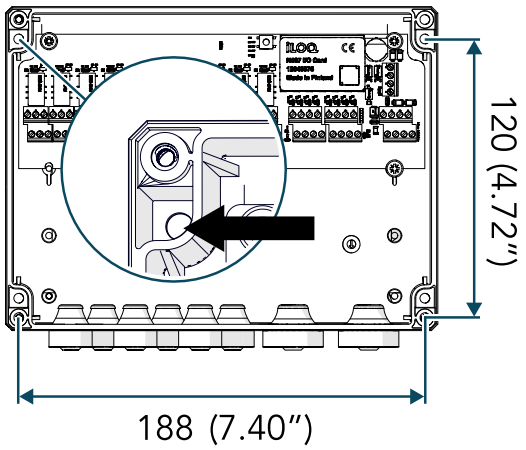


NOTE! The wall material of the installation site may affect the choice of the needed mounting screws.

3.4.1 Installing the iLOQ N507 Online I/O Module

1. Open the plastic fixing screws to open the enclosure cover.
2. Use the fixing points at the bottom of the screw channel to attach the enclosure to the wall.
3. Close the enclosure cover with the plastic fixing screws, after finalizing the setup and programming.





4. Wiring the system



WARNING! Risk of a short circuit. Make sure that the wiring is performed properly with the power switched off and according to the instructions.



NOTE! Only use twisted pair and shielded cables. The recommended cable types and lengths can be found in the iLOQ 5 Series Online System Planning Guide.

4.1 Connection points and additional information



NOTE! The operation of the inputs can vary depending of the selected operation mode (see chapter: Operation modes).



NOTE! Remember to terminate the last device of each branch.

iLOQ N500 Net Bridge:

- On / Standby: Power On/Off
- Setup / Operating: Setup state is used to trigger the setup process
- PoE / PoE+: Selection of which is used
- 24V DC: Main power supply connection if PoE is not used
- RS-485: Main bus out. Connectors for 6 branches which are all connected to each other.
- ETH 10/100: Internet connection

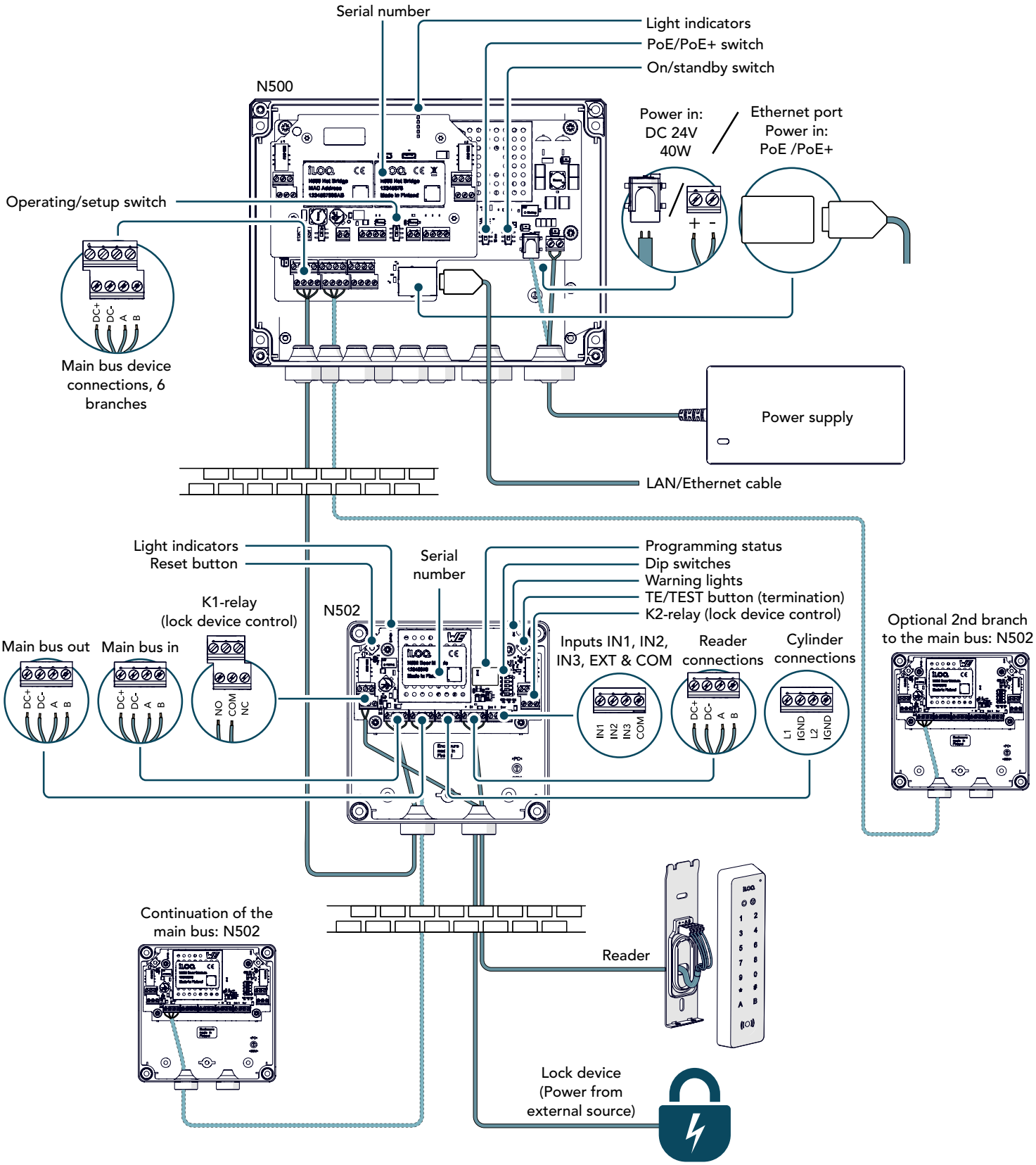
iLOQ N507 Online I/O Module:

- TE/TEST: Press 3 seconds for termination - ON/OFF
- IN1 - 10 + GND: Inputs for controlling the relays
- K1 - K10 relays: Key/Reader, Calendar and Code access

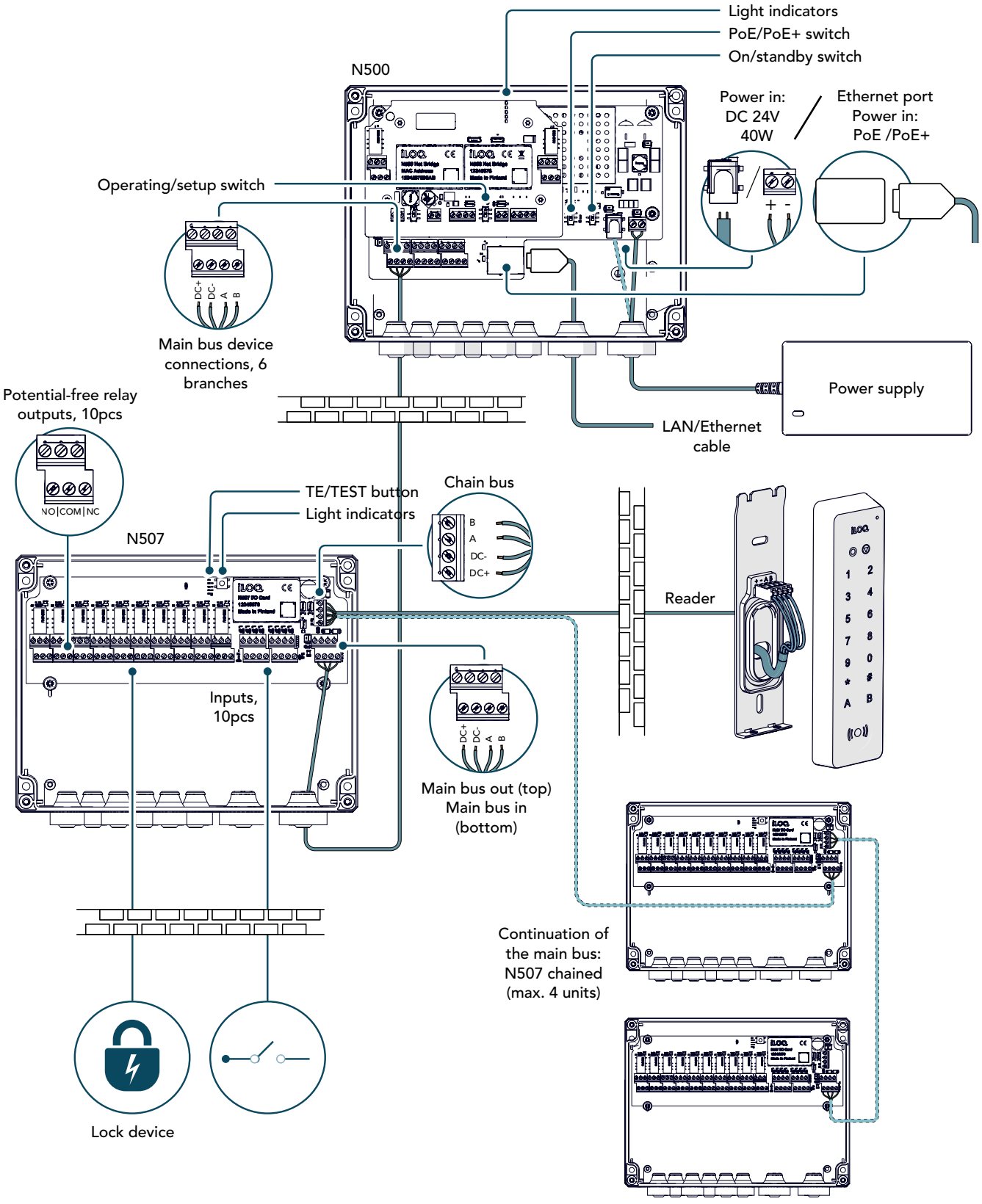
iLOQ N502 Online Door Module:

- TE / TEST: Press 3 seconds for termination - ON/OFF
- DIP S1 - S5: Operation mode selection (see chapter: Operation modes)
- IN1 + COM: Opening button
- IN2 + COM: Door status information 1
- IN3 + COM: Door status information 2
- EXT + COM: Input for conditional access right
- K1 - relay: Key/Reader, HOME, Calendar and Code access
- K2 - relay: Calendar and Code access
- Reader RS-485: For connecting an iLOQ NFC Reader
- L1 / L2: Cylinder connections

4.2 Example of wiring for the iLOQ N500-N502



4.3 Example of wiring for the iLOQ N500-N507



5. The setup process

This chapter describes the setup process and how it is done.

5.1 Setup

The setup process is for finding the devices in the RS-485 bus. It has nothing to do with the programming of the iLOQ Online devices (see chapter Programming). The setup has to be done whenever sub-devices are added to/deleted from the bus.

Initializing the setup procedure will always "reset" the bus and the bus address of the connected devices. After that, it will search for new devices by pinging the bus. Whenever a new device is found, it is given unique address. When new devices are no longer found, the setup process is finished.

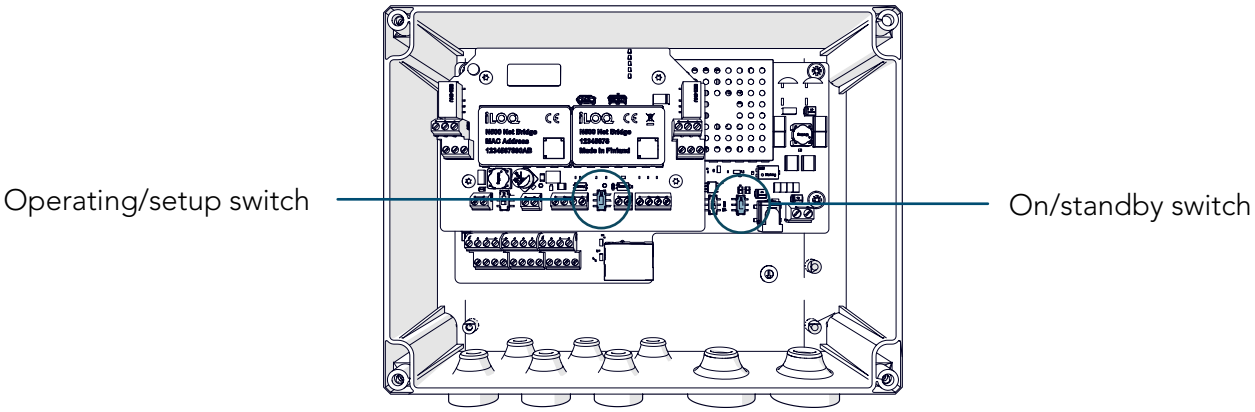
NOTE! After a successful setup, the connected devices might start to update themselves. Please see chapter: 5.4 Troubleshooting the setup process.

5.2 How to perform the setup

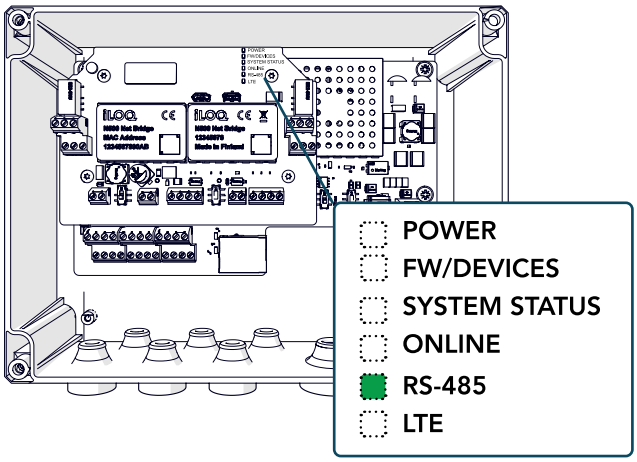
NOTE! Before performing the setup process make sure that all the connections are done correctly, and the power is OFF.

1. Initiate the setup process with the DIP-switches of the iLOQ N500 Net Bridge:

- Switch mode to SETUP
- Switch power to ON
- Wait 5 seconds
- Switch mode to OPERATING



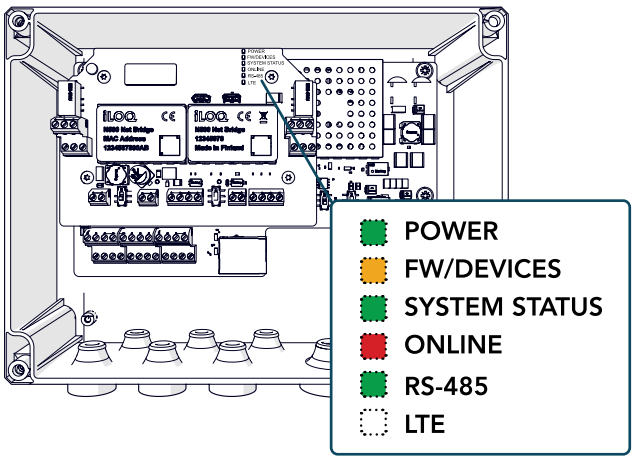
2. Observe the iLOQ N500 Net Bridge's FW/DEVICES light indicator for approximately one minute while the net bridge saves the bus configuration.



- The green RS-485 light should flash as many times as there are devices (N502, N507 and readers) on the RS-485 bus.

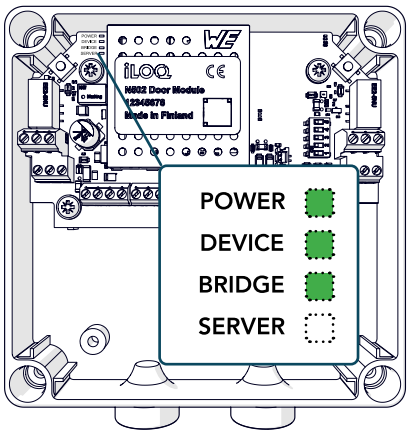
NOTE! After a successful setup, the connected devices might start to update themselves. Please see chapter: 5.4 Troubleshooting the setup process.

3. Run the setup process if it has not been performed already.
4. The system will reboot automatically after the setup process.
5. Observe the light indicators. When the bus configuration has been saved successfully, the iLOQ N500 Net Bridge light indicators will be shown as depicted in the upcoming picture.

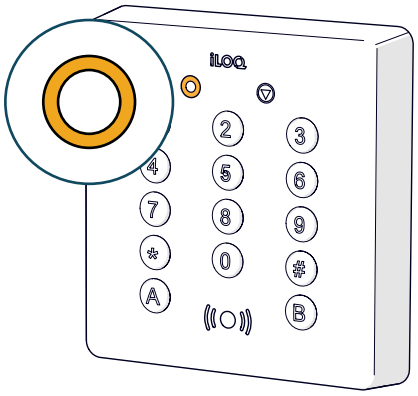


NOTE! If the light indicators are not as pictured, do not start the programming. Repeat the setup and wait until the light indicators are correct.

6. Check that the POWER, DEVICE and BRIDGE light indicators are illuminated in all connected iLOQ N502 Online Door Modules and/or iLOQ N507 Extension Modules.



7. Check that the status light is amber on all connected iLOQ NFC Readers.



• Amber light	Indicates that the reader has connection to the door module.
• Red light	Indicates that there is no connection to the door module or the setup has not been done.
• Green light	Indicates that the Net Bridge connection to the server is OK.
• Blue light	Indicates that the reader firmware is being updated. Don't turn off the power!

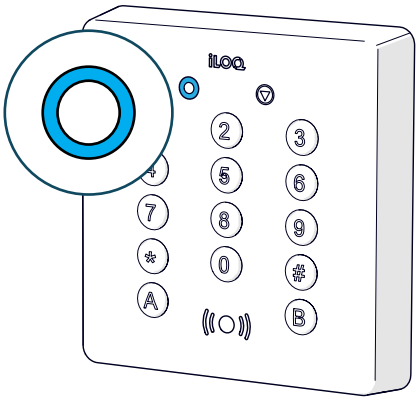
5.3 Troubleshooting the setup process

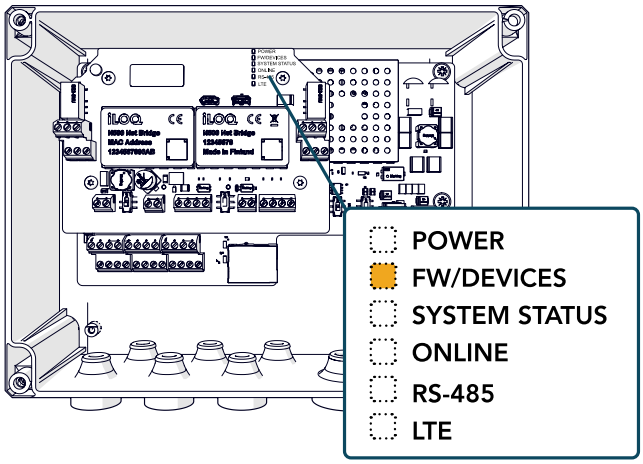
5.3.1 The setup process does not find all the devices:

- Bad luck (rare)
  → Run the setup again
- Termination of the iLOQ N502/7 not done correctly
- DIP switch settings of the iLOQ N502 not done correctly
- Too many devices in the bus or cable length too long
  → Decrease the number of devices
- Bad connection of the wires
  → Fix and perform the setup again
  → Notice! Can cause problems to the entire bus and other devices of the bus
- Bad cable / Cable that is not twisted
  → Fix and perform the setup again
  → Notice! Can cause problems to the entire bus and other devices of the bus
- Broken iLOQ N502/N504/N505/N507
  → Find the broken device by process of elimination. Change the broken device and perform the setup again
  → Notice! Can cause problems to the entire bus and other devices of the bus
- Too short cable
  → Bus cable should not be under 1m
- Broken iLOQ N500 - Change the iLOQ N500

5.3.2 NFC Readers blinking blue after the setup

Depending on the software version of the devices, it maybe, that after the setup process, the iLOQ N500 Net Bridge will start to Upgrade or downgrade the software in the connected bus devices. The firmware update is visually indicated with blue lights on the NFC Reader and a blinking orange light on the Net Bridge. During the firmware update, do not disconnect the network connection or the power supply to the devices. During the update, systems will reboot automatically.





6. iLOQ Manager

This chapter describes the most important features and settings that must be performed for iLOQ Online devices, both during the deployment and when maintaining the system. This manual does not cover calendar control related settings, such as:

- Calendar controllable doors
- Monitored doors
- Calendar
- Direct control calendar
- Code-access groups
- PIN-code calendar

More detailed instructions can be found at support.iloq.com.

6.1 Adding a network module to the iLOQ Manager

Before the iLOQ N500/1 Net Bridge programming can be performed, it has to be added to the system as a network module using the iLOQ Manager. All actions are done in one go using the "Add network module" Wizard.



NOTE! Use a descriptive name for the network module. For example, use a name that indicates the physical location of the module.

1. Select "Add network module" > the Wizard will open.
2. Follow the Wizard to add the network module details.
3. After adding the network module, the Wizard will automatically jump to "Adding a Lock (N502/7)".



NOTE! For help defining the access rights for the iLOQ N507, see chapter “Editing the settings of a N507 Lock”

4. Transfer the programming task to the iLOQ P55S Programming Key.
5. Disconnect the iLOQ P55S Programming Key from the USB cable/Programming Adapter.

The LOQ P55S Programming Key is now ready to be used to program the devices (see chapter “Programming”).

6.2 Adding the iLOQ N502 or iLOQ N507 as a lock

From the system point of view, the iLOQ N502 Online Door Module and the iLOQ N507 Online I/O Module are locks that need to be added to the system as locks and programmed.

1. Select "Add Lock" > the Wizard will open.
2. Follow the wizard to add the Lock details.



NOTE! For help defining the Access rights for N507, see chapter "Editing the settings of a N507 Lock"

3. Program the Lock in either of these two ways:
   → Order: If the devices are connected to iLOQ Cloud they will be programmed via the network connection
   → Transfer to Programming Key: Disconnect the iLOQ P55S Programming Key and program the lock (see chapter "Programming"

6.3 Editing the settings of a network module (Net Bridge)

Basic Network settings:

1. Browse Network Modules.
2. Right click a Network Module and choose "Modify settings of device".
   → DHCP / Fixed IP selection
   → Network module User selection and password change

Relay/Input:

1. Browse Network Modules.
2. Right click a Network Module and choose "Edit relay settings".
3. Select which Relays are calendar controllable and edit the names of them.
4. Select which Inputs are used for monitoring function.

6.4 Editing the settings of an N501/2 Lock (Door Module)

Relay mode and Relay impulse time:

1. Browse Locks.
2. Right click a Lock and choose "Edit key switch relay settings".
3. Edit the length of time that how long the Relay remains active after a valid key is used.

Access rights:

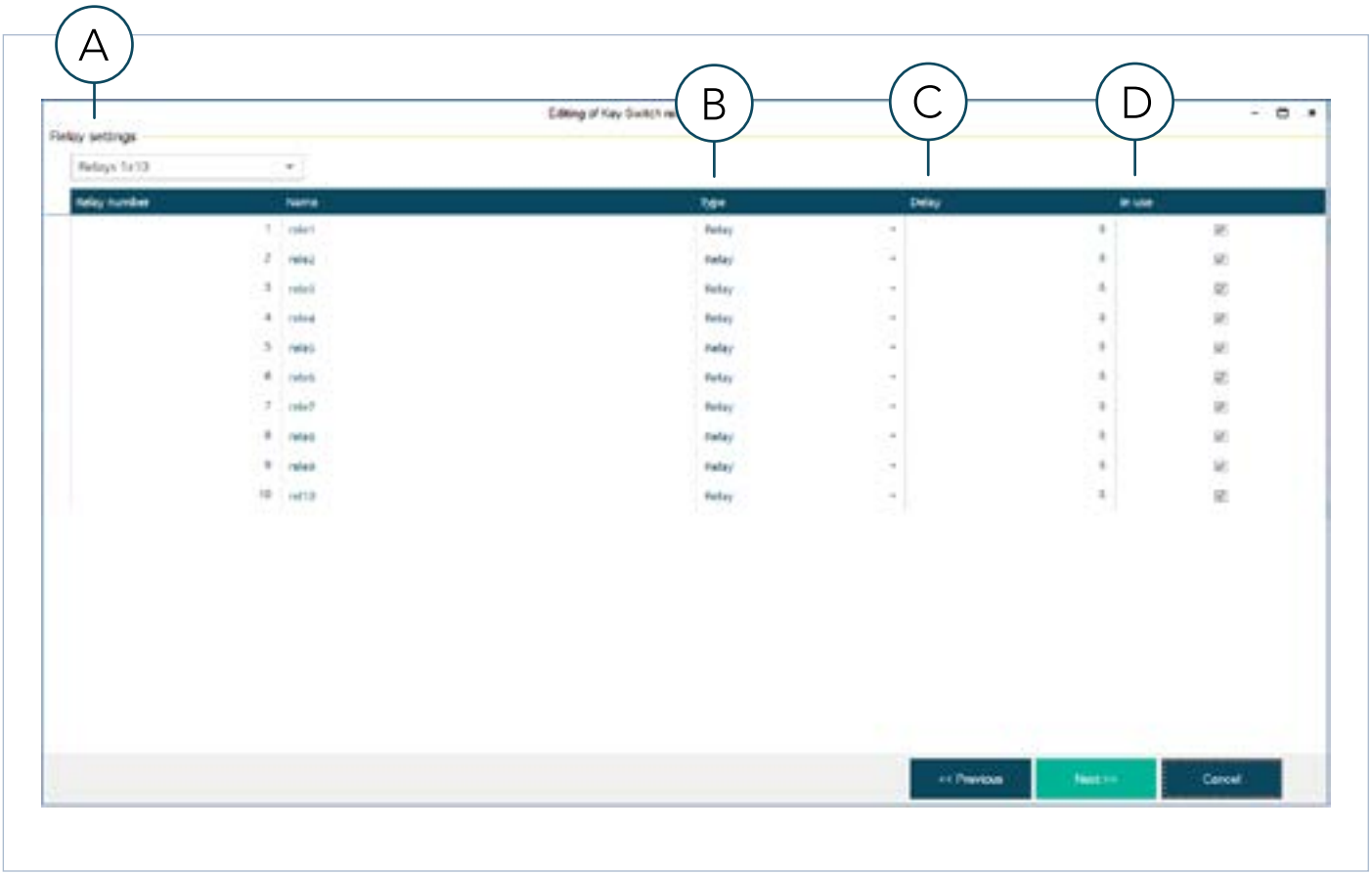
1. Browse Locks.
2. Right click a Lock and choose "Edit access rights".
3. Choose which access rights are needed to open the lock.

6.5 Editing the settings of an iLOQ N507 Online I/O Module lock

Editing the key switch relay settings:

1. Browse Locks.
2. Right click a Lock and choose “Edit key switch relay settings”.
3. Follow the Wizard and define the following settings:

- The number of stacked iLOQ N507 Online I/O Modules in your configuration **(A)**
- The relay mode **(B)**
  → Impulse (Relay): Delay adjustable
  → Switch: A valid key switches the relay status ON or OFF
  → Key Hold: Relay remains active as long as a valid key is present in the reader.
- The Impulse delay for each relay **(C)**
  → Adjusts the relay operating time after a valid key is used in the reader.
  → Only for relay mode Impulse
- The relays that you are planning to use **(D)**
  → If a relay is not selected: It will not be visible in the Access right selection

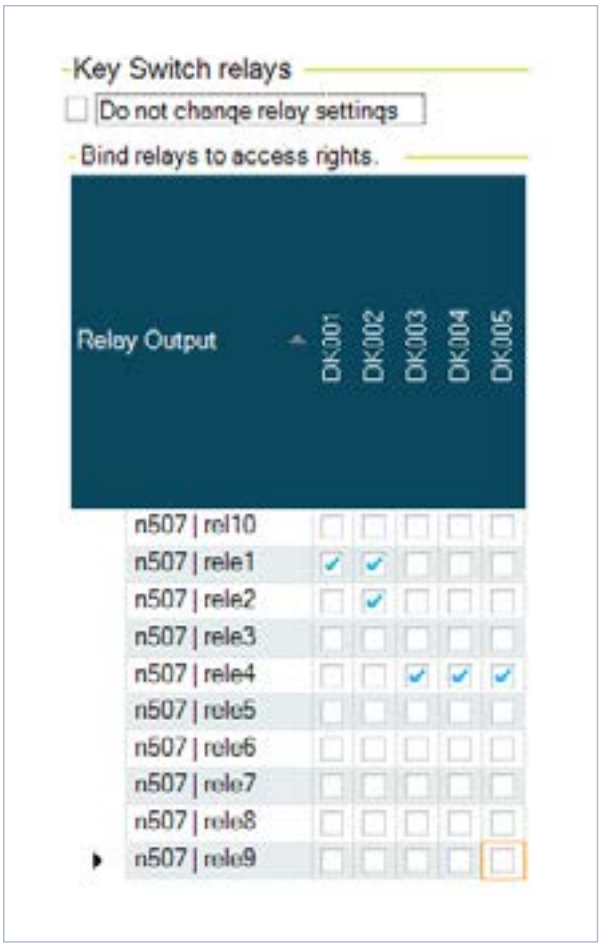


Editing the access rights:

1. Browse Locks.
2. Right click a Lock and choose “Edit access rights”.

NOTE! Before editing the access rights, the relays must be activated (see chapter “Edit key switch relay settings”).

3. Follow the Wizard.
4. Choose all the access rights that you will plan to attach to iLOQ N507 relays.
   → For example, if you have 10 relays that corresponds to 10 floors, make sure that you have access rights“Floor 1 to Floor 10” created beforehand and select those.
   → In the Key Switch relays window you will see the chosen access rights horizontally at the top of the matrix and the relays selected for use in the key switch relay settings
5. Attach the access right(s) to the relay(s) you prefer by selecting tick boxes in the Relay matrix.



NOTE! If a relay is gray and cannot be selected, it means that it is used by an input.

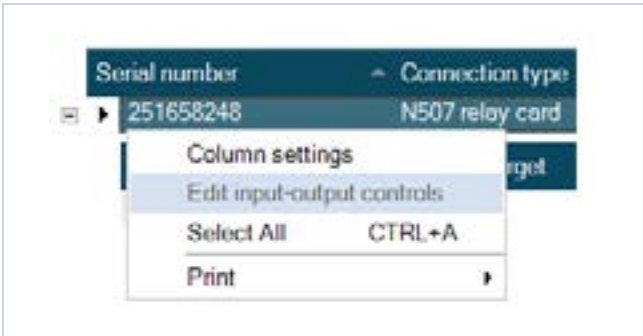
NOTE! Input selection cannot overlap wit Access rights selection per relay.

NOTE! Input control selection is done after the initial programming of the iLOQ N507 in the Network module settings.

Editing the Input-Output controls:

NOTE! Input control selection is done after the initial programming of the iLOQ N507 in the Network module settings.

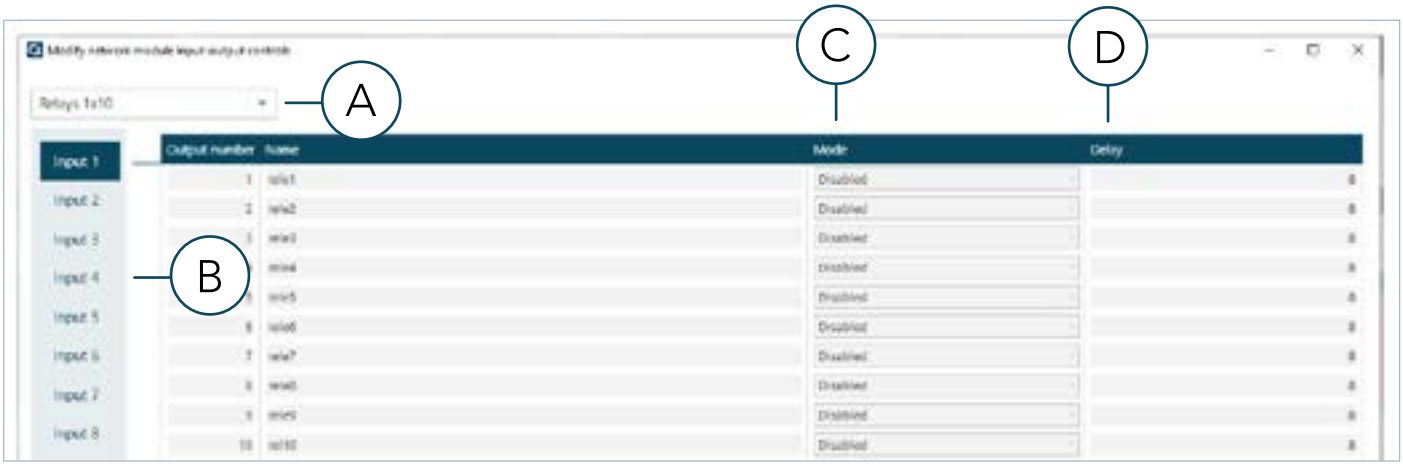
1. Browse Network Modules.
2. Right click a Network Module and choose "Properties".
3. Choose the tab "Devices".
4. Right click on the serial number of the iLOQ N507.
5. Choose "Edit input-output controls".



NOTE! If the relay mode is not editable, the relay is in use by the Access rights.

- The amount of stacked iLOQ N507 Online I/O Modules in your configuration **(A)**

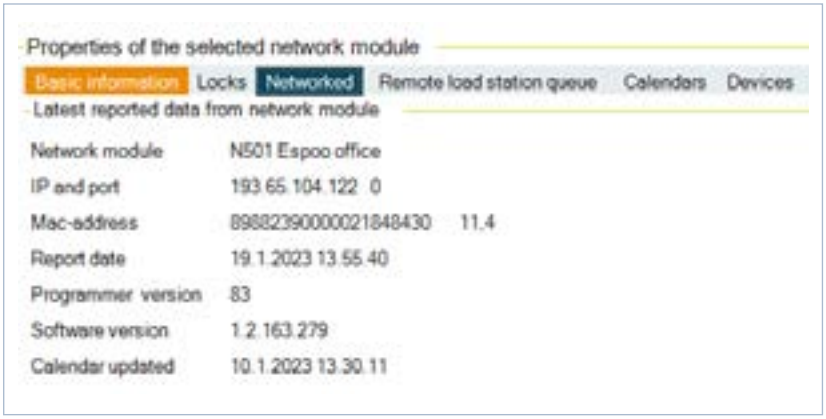
6. Select the Input of which settings you want to edit **(B)** and continue with next steps.
   → Repeat the process for all the Inputs you wish to use. (All the Input to Relay selection are working independently)
7. Choose the relay mode **(C).**
   → Disabled / Impulse (Relay) – Delay adjustable / Switch – Activating the Input switches the relay status ON or OFF
8. Choose the Impulse delay for each relay **(D).**
   → Adjusts the relay operating time after an Input has been activated. Time is calculated from the start of the impulse and the relay does not remain active even if the input is. Only for the Impulse relay mode



6.6 Typical things to look at in the iLOQ Manager

Report date:

1. Browse Network Modules.
2. Right click a Network Module and choose “Properties”.
3. Choose the tab “Networked”.
   → This can be used to check if the device has been online or not
   → Indicates the last date/time when the iLOQ N500/1 Net Bridge has made a connection with the iLOQ Cloud, typically this is done every 15 minutes



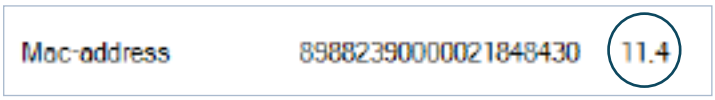
Software version:

1. Browse Network Modules.
2. Right click a Network Module and choose “Properties”.
3. Choose the tab “Networked”.

- From the row “Software version” you can check whether the devices have successfully installed the latest software

Signal strength:

- For the iLOQ N501 Standalone Door Module, the signal strength of the data connection can be checked from the two last digits after the Mac-address.
- The first digit: the higher the better, the second digit: the lower the better



Pink rows:

- A row highlighted with a pink color in both the Browse-Network-Modules and Browse-Locks view indicates that a device is missing its iLOQ Cloud connection

Send to:

1. Browse Network Modules.
2. Right click a Network Module and choose “Send to”.
   → In this window, multiple tasks can be performed manually by commanding the iLOQ N500/1 Net Bridge

Door audit trail:

1. Browse Locks.
2. Right click a Lock and choose “Properties”.
3. Choose the tab “Door audit trail”.
   → In this window, the calendar controls, code and key accesses can be seen

Event log:

- The system event log gives information about network modules that have been rebooted

6.7 Updates

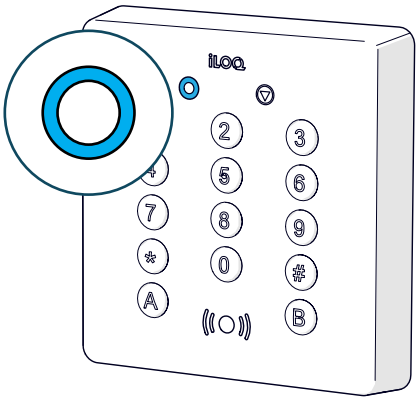
iLOQ releases Online device software updates 2-4 times per year. Updates can include new features, bug fixes and security updates. The iLOQ N500/N501 Net Bridges start to download the update immediately after it is made available to the iLOQ Cloud.

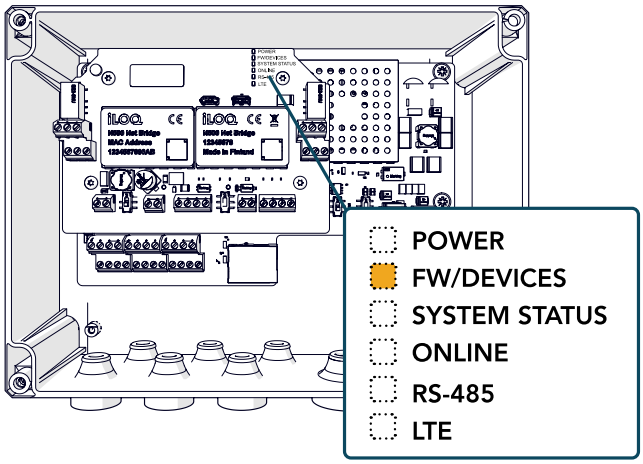
The installation time of the update is defined by the admin of the system in the locking system setting of the iLOQ Manager. The default update time is 02:00 am based on the locking system time zone. Admins can also choose to manually update the Online devices from the network module view as soon as the update is available.

In the iLOQ Manager:

1. Browse network modules.
2. Right click a network module.
3. Choose “Send to network module”.
4. Click “Request to update firmware”.

Depending on the software version of the devices, it maybe, that after the setup process, the iLOQ N500 Net Bridge will start to Upgrade or downgrade the software in the connected bus devices. The firmware update is visually indicated with blue lights on the NFC Reader and a blinking orange light on the Net Bridge. During the firmware update, do not disconnect the network connection or the power supply to the devices. During the update, systems will reboot automatically.





7. Programming

This chapter describes how the iLOQ Online devices are programmed. Programming can mean transferring the network connection settings to the iLOQ N500 Net Bridge or transferring the lock programming packets to the iLOQ N502 Online Door Module or N507 Online I/O Module.

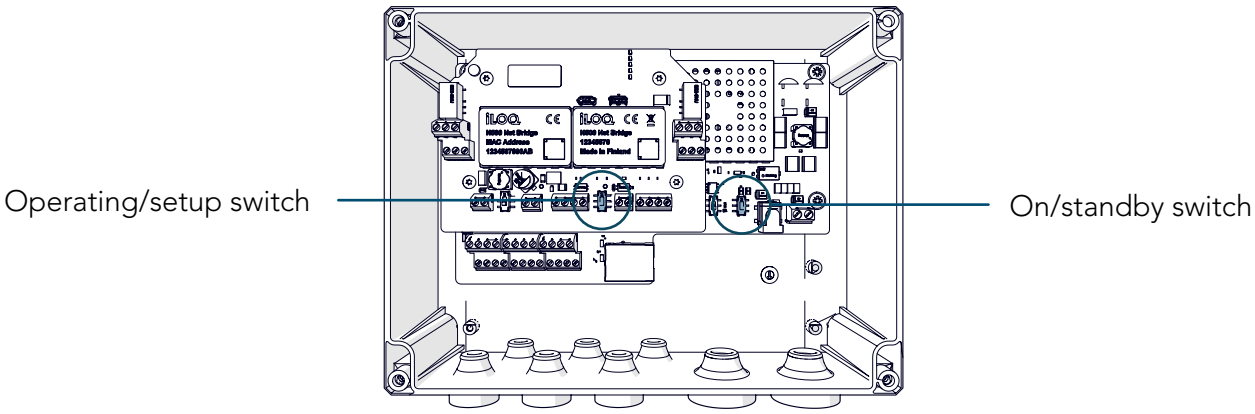
7.1 Programming the devices for the first time

This chapter describes how to complete the device configuration of the iLOQ N500 Net Bridge. The iLOQ N500 power has to be turned ON to continue programming. Make sure that the bus devices are connected, the setup has been completed, the iLOQ P55S Programming Key is disconnected from the PC and has the programming packet as described in the chapter “Adding a network module in the iLOQ Manager”.

NOTE! The programming has to be done on a specific iLOQ NFC Reader that was defined during the ''Adding a Network Module'' process in the iLOQ Manager.

1. Proceed with the iLOQ N500 as follows:

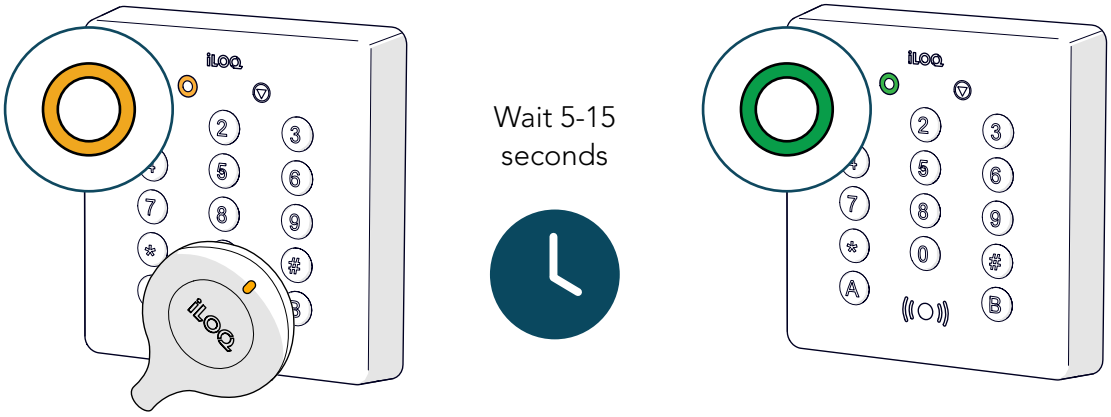
- Switch power to ON
- Switch mode to OPERATING



2. To start the deployment programming, disconnect the iLOQ P55S Programming Key from the PC and place it on the iLOQ NFC Reader.

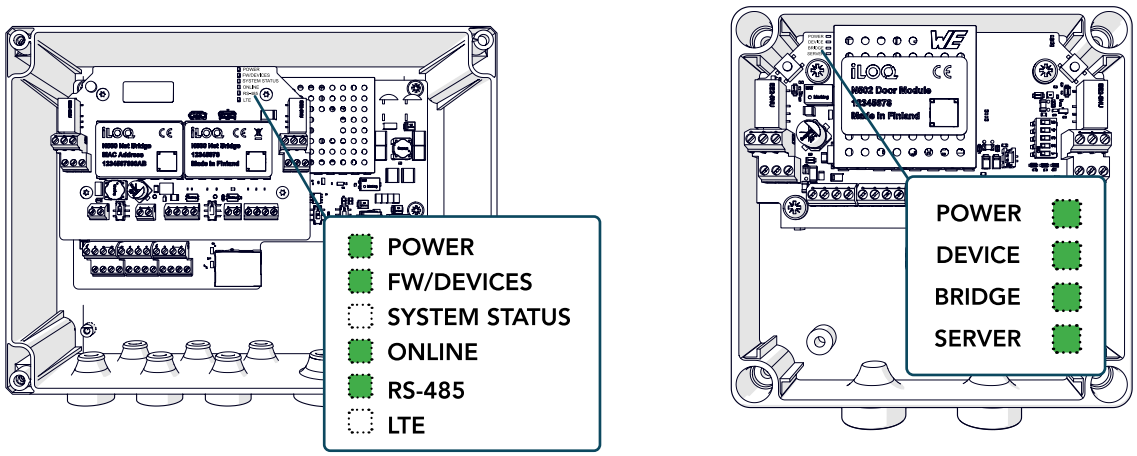
- At the start of the deployment programming, the indicator lights on both the reader and the Programming Key are amber.

- It takes approximately 5-15 seconds to upload the programming package from the Programming Token to the iLOQ N500 via the iLOQ NFC Reader. When the programming is ready, the NFC Reader will beep and a green light will appear. If a red light is shown together with an error beep, try again.

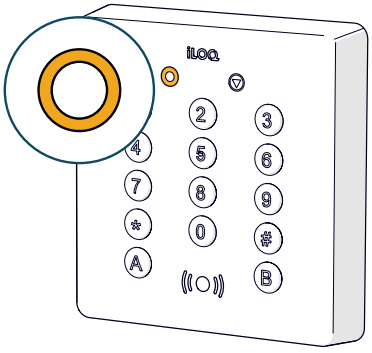


3. At the end of the deployment programming, the iLOQ N500 light indicators POWER, FW/DEVICES, ONLINE and RS-485 lights are green. Depending on the HW version the LTE light does not indicate any essential information.

4. Check that the light indicators are green on all connected door modules.



5. Check that the status light is amber on all connected NFC Readers. If the light indicators on all the devices are as pictured, the deployment has been completed and the devices are ready for use. The status light turns green when the system is online.



7.2 Programming additional N502/N507 modules

This chapter describes how to add additional locks in the iLOQ Manager.

Proceed as follows:

1. Open the iLOQ Manager.
2. Select Add lock.

There are two ways to add new devices:

1. Option: the iLOQ N500 has connection to server:

- Add lock – Lock type N502 – Choose correct N500 – Add serial number – ORDER If several devices – repeat the process.

2. Option: the iLOQ N500 does not have connection to server:

- Add lock – Lock type N502 – Choose correct N500 – Add serial number – Transfer to Token – If several devices – repeat the process.

7.3 Typical cases in the field



NOTE! If the device is online when the task is ordered in the iLOQ Manager, the task will be done via the iLOQ Cloud connection right after ordering the task

Replacing a broken iLOQ N500 Net Bridge (products needed: N500, N502 and N504/5i):

1. Connect the iLOQ N500, the iLOQ N502 Online Door Module and the iLOQ NFC Reader as per the wiring instructions.
2. Perform the setup process (see chapter “The setup process”).
3. Add a new network module in the iLOQ Manager – follow the Wizard.
4. After successfully deploying the new iLOQ N500, shut down all devices.
5. Replace the broken iLOQ N500 with a new one.
6. Perform the setup process (see chapter “The setup process”).
   After a successful setup, all devices should now be under the new iLOQ N500 in the iLOQ Manager.
7. Delete the new “temporary” iLOQ N502 and iLOQ N504/5i from the system.

- Optional: You can try to connect the new iLOQ N502 and iLOQ N504/5i to the old iLOQ N500, perform the setup, and try to delete the network module. This way you don’t leave the “ghost” of the broken iLOQ N500 in the system.

Replacing a broken iLOQ N502/7:

1. Add a new Lock in the iLOQ Manager.
2. Select correct the Lock cylinder type (N502 or N507).
3. Select the correct iLOQ N500 network module to which you are connecting the new device in to and add new device serial – follow the Wizard.
4. Perform the setup process (see chapter "The setup process").

Replacing a broken iLOQ NFC Reader N504/5/6 with a new one:

1. Replace the broken NFC Reader with a new one.
2. Perform the setup process (see chapter "The setup process").

Adding an iLOQ N502 to a programmed iLOQ N500 configuration:

1. Connect the devices according to wiring instructions.
2. Perform the setup process (see chapter "The setup process").
3. Add the new lock in the iLOQ Manager (see chapter "Adding the iLOQ N502 or iLOQ N507 as a lock").

Adding a Master N507 to an already programmed N500 configuration:

1. Connect the new N507 as per general wiring instructions
2. Perform the setup process (see chapter "The setup process")
3. Add a new Lock in the iLOQ Manager – (see chapter "Adding the iLOQ N502 or iLOQ N507 as a lock").

Adding a Slave iLOQ N507 to an already programmed iLOQ N500-N507 configuration:

1. Connect the new iLOQ N507 as per general wiring instructions.
   → Remember to terminate the last device in the bus
2. Perform the setup process (see chapter "The setup process").
3. New device is found in the iLOQ Manager device list.
   → Edit the Relay-, Access right- and other settings as per needs

Adding an iLOQ N501 as a lock after programming an iLOQ N501 as a network module has failed:

- If, for example, adding a network module has failed, you might be in a situation when you have an iLOQ N501 network module in the system, but the iLOQ N501 lock is missing

1. Add Lock.
2. Choose Lock cylinder type N501.
3. Select N501 Network Module from the list.
4. Transfer the programming packet to the iLOQ P55S Programming Key.
5. Place the P55S Programming Key on the iLOQ NFC Reader.

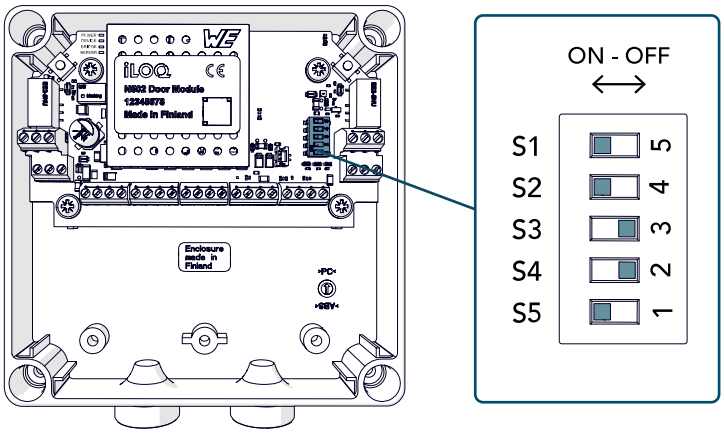
8. N502 Operation modes

This chapter describes the behavior of the iLOQ N502 Online Door Module in its specific operation modes. You can set the operation mode with the door module's OPTIONS DIP switches S1-S5.

8.1 Setting operation modes

This chapter describes how to set an operation mode. Make sure that all the necessary devices are connected according to the installation instructions before proceeding.

1. Make sure the power has been turned OFF.
2. Activate the desired operation mode by setting the door module DIP switches to the correct positions according to the instructions (see the following chapters, operation modes 1-9).
3. Perform the setup process (see chapter "The setup process").
4. Program the devices (see chapter "Programming"), unless they are already programmed to the system as locks.



8.1.1 Default operation mode

This operation mode is intended for connecting an iLOQ NFC Reader, for controlling an electric lock. One or two networked lock cylinders can also be connected.

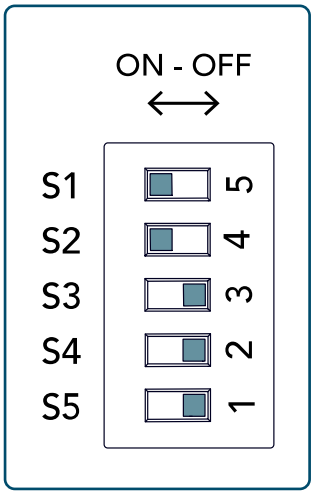
An example use case is a door where an electric lock is controlled by an NFC Reader. A valid key activates the impulse for relay output K1 that is connected to the electric lock. A push button connected to IN1 activates the relay output K1. The K1 relay can also be calendar-controlled. The K2 relay can be used for calendar-controlling an electric lock on another door.

In this case:

- The door module is programmed

Any potential-free contact information can be connected to IN2, such as a magnetic door contact. The door status information can be requested through the iLOQ Manager and door status can be viewed in the event log. For example, if the lock strike plate and door status is needed, the lock and door contacts can be connected in series. In this case, the status indicates if the door is closed and locked or not.

	K1	K2	Door status
Reader	X		
L1			
L2			
IN1	X		
IN 2			X
IN3			X
Calendar	X	X	



8.1.2 Door contact bypassing mode

This operation mode is intended for connecting an iLOQ NFC Reader, for controlling an electric lock, which controls both relay outputs. One or two networked lock cylinders can be connected, but they cannot control relays.

An example use case is an alarmed door where an electric lock is controlled by an NFC Reader, which also bypasses the door magnet contact.

A valid key or a push button:

- Activates the impulse for relay output K1, which is connected to the electric lock
- Activates the relay output K2, which bypasses the magnet contact on the alarmed door for 30 seconds, by default. This period can be changed through the iLOQ Manager

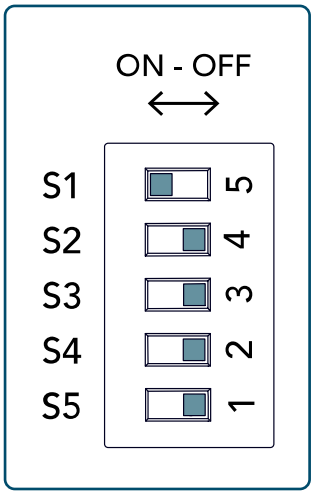
The K1 relay can also be calendar-controlled. In this case, relay output K2 cannot be calendar-controlled. The idea is to prevent bypassing an alarmed door from the iLOQ Manager.

In this case:

- The door module is programmed

Any potential-free contact information can be connected to IN2 or IN3, such as a magnetic door contact. The door status information can be requested through the iLOQ Manager and door status can be viewed in the event log. For example, if the lock strike plate and door status is needed, the lock and door contacts can be connected in series. In this case, the status indicates if the door is closed and locked or not.

	K1	K2	Door status
Reader	X	X	
L1			
L2			
IN1	X	X	
IN2			X
IN3			X
Calendar	X		



The calendar controls can be turned off by switching S1 to the OFF-position.

8.1.3 Alarm status mode

This operation mode is intended for using the iLOQ NFC Reader lights to illustrate the status of some customer system/device, while at the same time controlling a device with the relay K1.

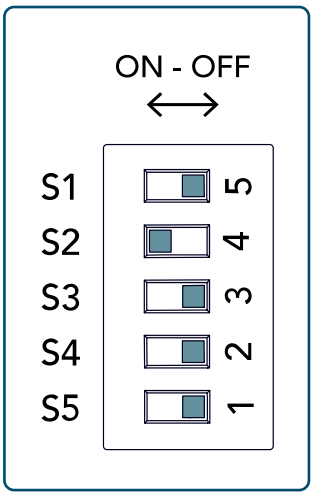
An example use case is a building where an alarm system is controlled by the NFC Reader. A valid key activates the impulse for relay output K1 that is connected to the alarm system. Connect the alarm system status information to the door module IN1 and/or IN2 to control LED A. If both IN1 and IN2 are active, LED A has an amber light. The status information you bring from the alarm system must be potential-free. If you have connected IN2, you can request for the alarm status information through the iLOQ and view the event log on the alarm status.

In this case:

- The door module is programmed

The table below describes the inputs controlling outputs K1 and K2 and whether the outputs are calendar-controllable, and if alarm status can be transferred to the iLOQ Manager. You can deploy this installation according to the instructions in chapter "Setting operation modes". However, set the iLOQ N502 Online Door Module OPTIONS DIP switches as shown in the picture.

	K1	K2	LED A
Reader	X		
L1			
L2			
IN1			GREEN
IN2			RED
IN1 & IN2			AMBER
IN3			
Calendar		X	



8.1.4 Scandinavian special mode

This operation mode is intended for connecting one or two networked lock cylinders, which control relay outputs.

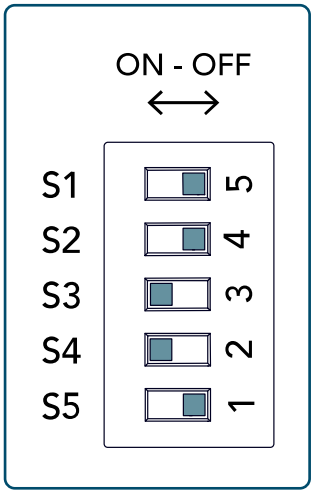
An example use case is a door with an alarm, or a door where a magnet lock is bypassed by a valid key insertion to the lock cylinder. Opening the cylinder with a valid key, or activating the push button, activates the relay output that bypasses the door magnet contact, or opens the magnet lock, for a fixed time of 30 seconds.

In this case:

- The door module is not programmed
- Relay outputs K1 and K2 cannot be calendar-controlled. This is to prevent bypassing the door alarm from the iLOQ Manager.
- Door status cannot be connected

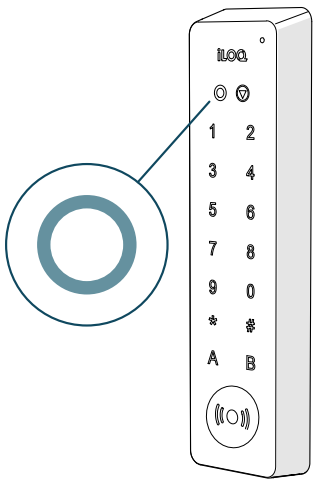
The table below describes the inputs controlling outputs K1 and K2, and whether the outputs are calendar-controllable. This installation can be deployed according to the instructions in chapter "Setting operation modes". However, set the iLOQ N502 Online Door Module OPTIONS DIP switches as shown in the picture.

	K1	K2	Door status
L1	X		
L2		X	
IN1	X		
IN2		X	
IN3			
Calendar			

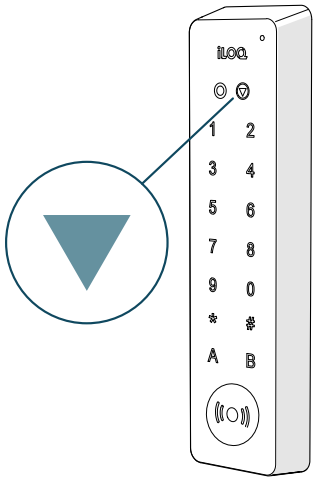


9. LED functions of the iLOQ NFC Reader

Connection status

	• Amber light	N503: Door module does not have the correct time (RTC). N501, N502, N507: Indicates that the reader has connection to the door module (setup successful).
	• Red light	Indicates that the setup was not successful. Wrong devices in the bus. Reader does not have connection.
	• Green light	N503: Door module has the correct time (RTC). N501, N502, N507: Reader connected correctly and connection to iLOQ server OK.
	• Blue light	Indicates that the reader firmware is being updated. Update will take approx. 2 min. Don't turn off the power! Reader cannot be used at this time.

Key communication status

	• Amber light	Key communication has started.
	• Purple light	Phone key communication has started.
	• Red light	The key did not have a valid access right or the key communication has failed. Sound indication confirms the denied access.
	• Green light	Access granted - Lock will be opened. A valid key with correct access rights was used A vaild access code was used Sound indication confirms the access granted event.

10. Replacement and disposal

If a product is defective, replace it with a new one using the installation instructions. If you are not sure how to replace or discard a certain product, contact the device manufacturer. Contact information can be found at support.iloq.com.

10.1 Disposal of decommissioned products

	Never discard an electrical appliance in household waste. Follow local laws and regulations for safe and environmentally friendly product disposal.
	Before discarding products, bear in mind that most iLOQ products are reusable. All programmable products can be reset to factory settings, after which they can be reused in another system.

Recycling instructions of decommissioned products are depicted below.

Decommissioned product	Sorting
Decommissioned iLOQ fittings, mounting accessories and thumb turn knobs can be recycled as scrap metal.	
Decommissioned iLOQ products containing electronics and circuit boards, such as iLOQ Cylinders, iLOQ Keys, net bridges, door modules, key and NFC Readers, and relay cards, must be recycled at an electrical and electronic equipment collection point.	
iLOQ products containing batteries and accumulators, such as key fobs, programming keys and clock circuits, should be recycled at a regional collection point for batteries and small accumulators.	
Most iLOQ packaging materials are suitable for cardboard and plastic recycling.	

11. Compliance

CE

Simplified EU Declaration of Conformity:
This product is compliant with Directives 2014/30/ EU, 2011/65/EU and 2015/863/EU. The full text of the declaration of conformity is available at https://www.iloq.com/en/declaration-of-compliance/.

ISED (Innovation, Science and Economic Development Canada)

The conformity was assessed in accordance with the following standard:
CAN ICES-003(B) / NMB-003(B)

FCC

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

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

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

Changes or modifications made to this equipment not expressly approved by iLOQ Oy may void the FCC authorization to operate this equipment.

Australia and New Zealand



iLOQ 5 Series

iLOQ N500 Net Bridge
iLOQ N502 Online Door Module
iLOQ N507 Online I/O Module

Installation and deployment

iLOQ
support.iloq.com
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Finland