U&Z Uhlmann & Zacher

CX8942

Clex Online module LAN
868 MHz

Operating and
assembly instructions

Valid from: HW 1.5.3_A | ESP-MOD 5.0.1

Legal Notice

Operating and installation instructions (translated version)
CX8942 Clex online module LAN

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1   About this document

These operating and installation instructions describe the CX8942 Clex online module. They are part of the product and contain important information required for correct operation and maintenance.

These operating and installation instructions apply for all versions of the CX8942 and are intended both for specialist personnel responsible for assembly and disassembly and for end customers.

▶   To ensure trouble-free and safe operation, read these operating and installation instructions carefully and observe the information contained there before putting the online module into operation.

▶   Keep the operating and installation instructions.

▶   After installation, give the instructions to the end customer and familiarize them with operation.

Uhlmann & Zacher GmbH accepts no liability for malfunctions, such as impossible access to injured persons, operational malfunctions, damage to property or other damage resulting from non-observance of these operating and installation instructions or from incorrectly configured online modules.

▶   If you still have any questions after reading these operating and installation instructions, please contact your specialist dealer or Uhlmann & Zacher GmbH directly.

1.1   Warnings

Warning notices warn of hazards that may occur when using the online module. There are two hazard levels, recognizable by the signal word:

Signal word	Meaning
CAUTION	Indicates a low-risk hazard that may result in minor or moderate injury if not avoided
ATTENTION	Indicates a hazard that results in damage to property

1.2   Symbols

The following symbols may appear in this manual:

▶   This symbol marks an instruction that has to be carried out by the user.

•   This symbol marks an entry in a list.

This symbol indicates useful and important information.

2 Safety

2.1 Proper use

The CX8942 online module LAN is used as an interface between 868 MHz-capable Uhlmann & Zacher products and a third-party system via LAN.

2.2 Improper use

Products from Uhlmann & Zacher GmbH must not be used to lock up persons or animals, as well as aids that are vital in an emergency (for example, defibrillators, emergency medication, fire extinguishers, etc.).

It must not be used in potentially explosive atmospheres.

If the housing or the electronics is damaged, the product must not be operated any longer. Modifications or additions to the product are not permitted. The use of the online module outside the stated specifications is not permitted.

2.3 General safety information

Observe the following basic safety instructions when handling the product:

▶ Electrical equipment may only be installed and mounted by qualified electricians. Installation may only be carried out by trained specialists in accordance with these instructions.

▶ These instructions should be passed on to the user by the person carrying out the installation.

▶ There is an increased risk of injury (electric shock!) if the connecting cables are touched when the power supply is switched on. Only perform installation and maintenance work when the power supply is switched off. Observe VDE guidelines!

▶ Do not use products in potentially explosive atmospheres.

▶ No modifications of any kind are permitted to the products of Uhlmann & Zacher GmbH, with the exception of those described in a corresponding manual.

▶ The online module must not be brought into contact with paints or acids.

▶ Only operate the products within the defined temperature range. Do not heat the product above the specified storage temperature.

▶ To avoid malfunctions and damage, only use original parts and accessories from Uhlmann & Zacher GmbH.

▶ No liability is accepted for incorrectly programmed units. Uhlmann & Zacher GmbH accepts no liability for malfunctions, such as impossible access to injured persons, damage to property or other damage.

▶ Uhlmann & Zacher accepts no liability for damage resulting from incorrect installation.

3   Product description

The Clex online module LAN in the Clex public system is used as an interface between Uhlmann & Zacher locking units with 868 MHz radio and a third-party system via an Ethernet LAN connection.
The product is used for the realization of radio opening, design of authorization changes and transfer of event protocols for Clex public or Clex private locking units.

Housing versions:

- Housing in grey
- Oval housing in white
- Rectangular housing in white

3.1   Technical data

3.1.1   General technical data

Designation	Value
Number of pairable locking units	16
Frequency range	868.3 MHz
Transmission power	1 mW
Power supply	8-12 V DC 0.5 A max. 8-12 V AC 50-60 Hz Optional: PoE, class 0 via RJ45 socket
Relay	Optional
Standards	2014/53/EU

3.1.2   Ambient conditions

Designation	Value
Operating temperature	+10 °C to +55 °C
Storage temperature	-40 °C to +65 °C
Installation location	Indoors

3.2   Overview
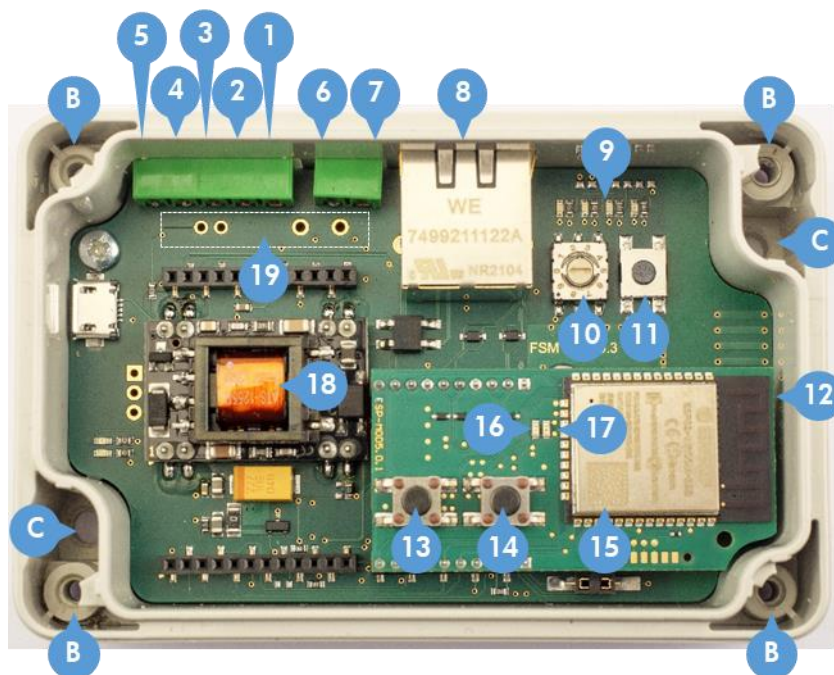
A. Without figure: Housing cover and screw(s)
    1 screw for Article number 8942 0000 0000
    4 screws for Article numbers 8942 0000 0004 and 8942 0000 0005
B. Screw connection for housing cover
C. Mounting holes (screws not included in the scope of delivery)

1. RS485-B (optional)
2. RS485-A (optional)
3. Power supply
4. Power supply
5. Digital input
6. Relay CO
7. Relay NO
8. RJ45 socket (Ethernet with PoE for power supply)
    with green LED - flashes during network traffic
    LAN module
9. LEDs (blue, green, red, yellow)
10. Rotary switch
11. Pairing button
12. LAN module
13. Delete button
14. Reset button
15. Data Matrix with MAC address (last 12 characters of the coded text)
16. Green LAN LED
17. Red LAN LED
18. PoE (optional)
19. Relay (optional)

3.3   Structure and scope of delivery

Variant gray rectangular housing
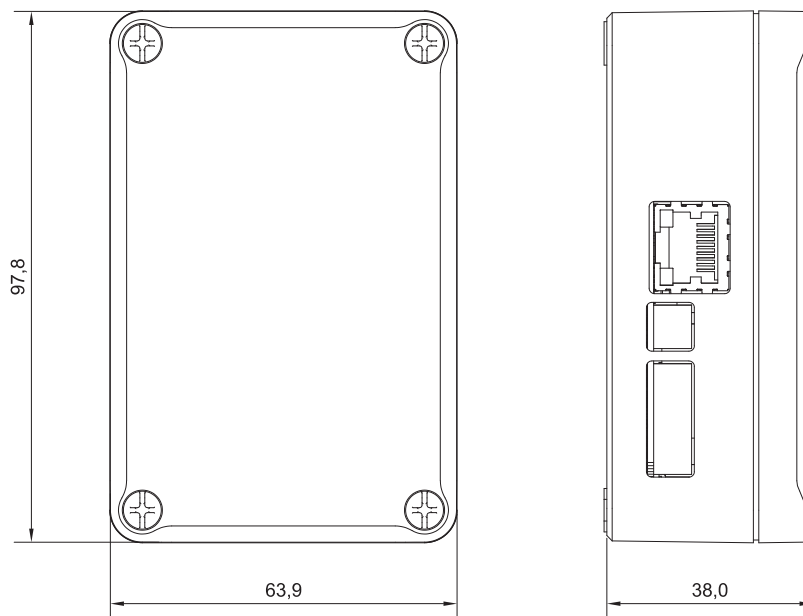
White oval housing

White rectangular housing

109

170,7

33

127,5
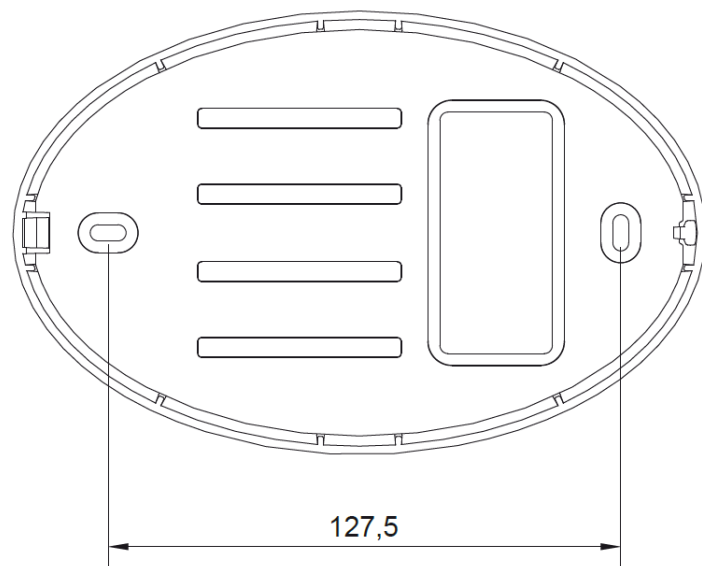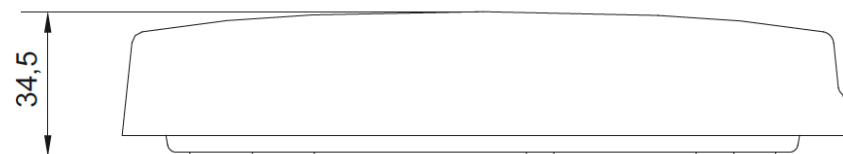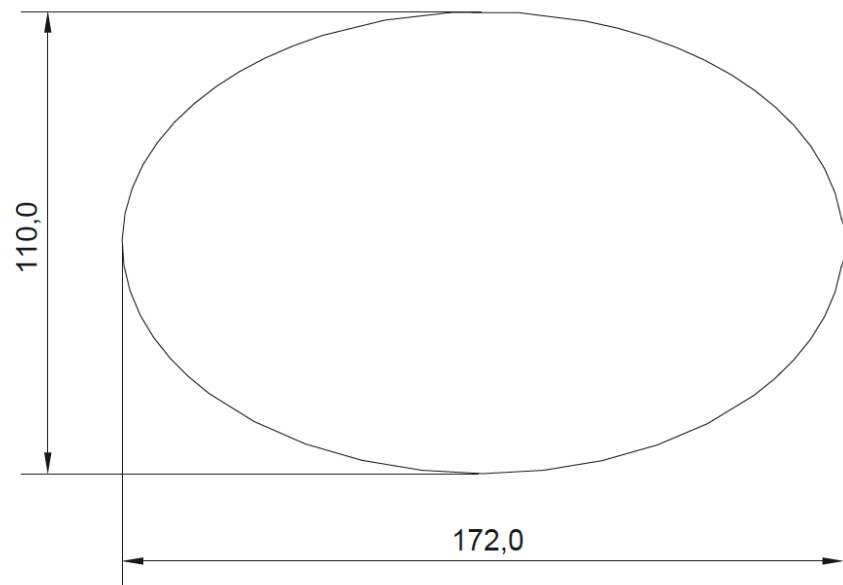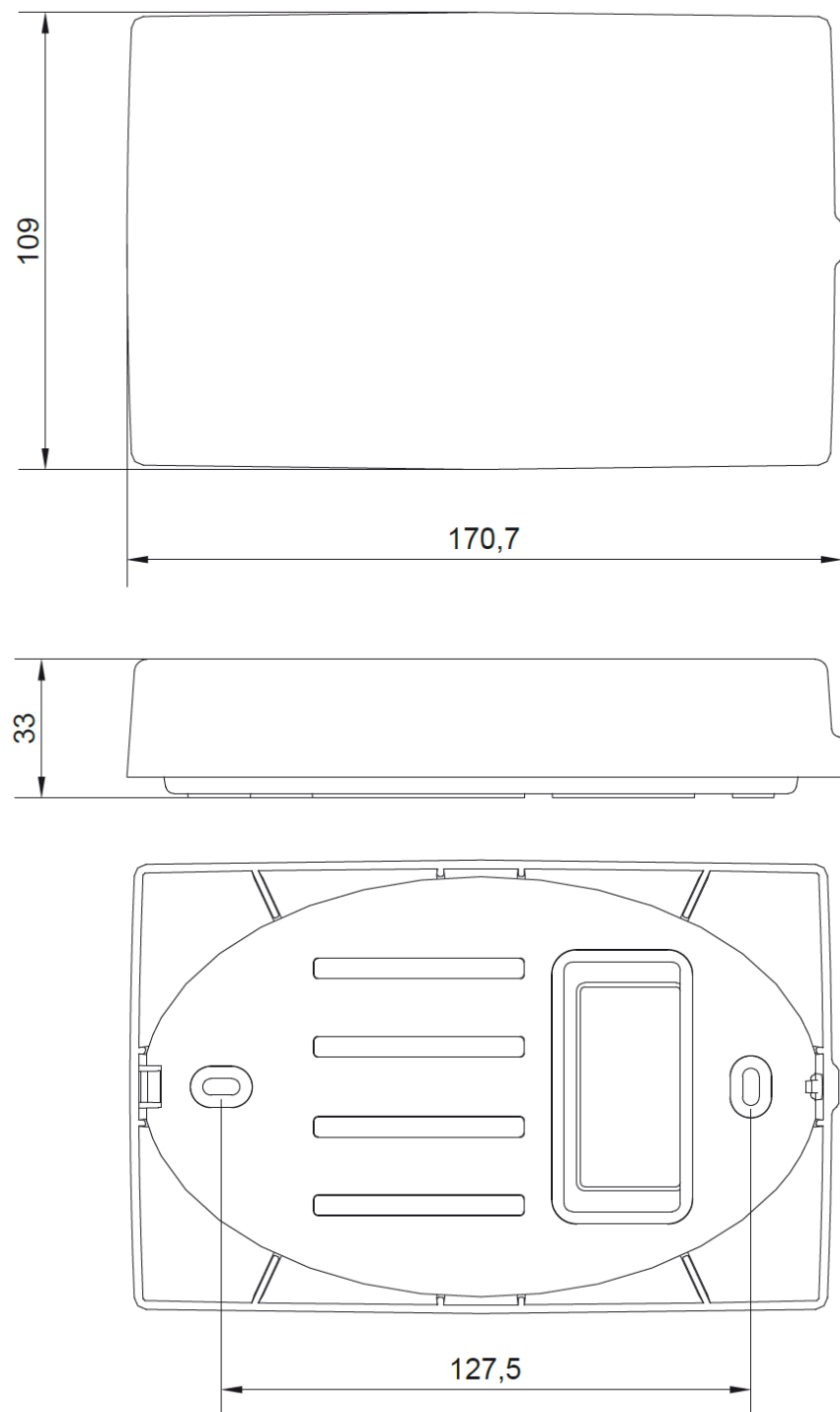
4   Connection and installation

4.1   General installation information

- The valid national regulations for electronic installations
  (e.g. VDE regulations) must be observed.
- The connecting cables must be available and laid.
- In the case of installation on metal surfaces or in direct proximity to metals,
  the range as well as the communication between product and connected
  locking units may be influenced negatively.
- Avoid direct exposure to strong electromagnetic fields
- Do not paint over, paste over or cover the online module.

4.2   Power supply

The CX8942 can be supplied with voltage either via the connections **3** and

4   or optionally via the Ethernet cable.

- 8-12 V DC 0.5 A max.
- 8-12 V AC 50-60 Hz
- PoE, class 0 via RJ45

4.3   Requirements for Ethernet cabling

When using the white oval housing and the white rectangular housing, a highly
flexible flat cable or a patch cable with RJ45 angle plug should be used angled
against the latching lug.

Recommended in white
housing:
RJ45 angle plug
Latching lug on outside
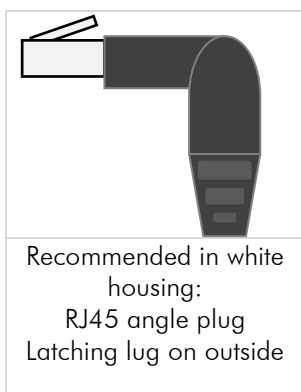
4.4   Installation

▶ Specify the installation position. Ensure that the surface is smooth, dry and firm enough. Do not place the units close to each other to avoid radio interferences.

▶ Unscrew and remove the housing cover.
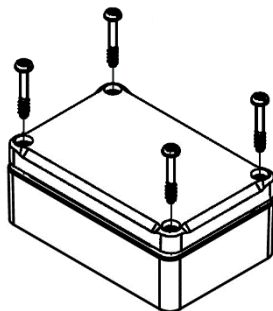
▶ Mark the fastening points through the bottom of the housing.

▶ If required, drill mounting holes into the mounting surface.

Hand-tighten the lower part of the device at the planned location using suitable flat-head screws. Installation material is not included in the scope of delivery. In case of cable feeding from the side, use additional fitting rubber or plastic spacers, if necessary. Ensure that the cable is not pinched.

▶ Perform commissioning (see the "Commissioning" chapter).

▶ Put on the housing cover and screw it tight.

5   Commissioning

5.1   Connecting locking units

To connect a locking unit with the online module, you have to perform the following steps:

Manual pairing

To this purpose users must have access to the circuit board of the module to operate the rotary switch and be able to press the button.

▶   Turn the rotary switch **10** to position 8.

▶   Set the locking unit, which you want to connect into the service mode by holding the service key in front of the locking unit.

▶   Within the duration of the service mode of the locking unit (15 seconds),

briefly tap the **11** button. If the locking unit has been successfully coupled, it automatically leaves the service mode prematurely.

▶   If required, repeat the process by coupling further locking units in service mode by pressing the button.

Function rotary switch

Position	Function
0	Basic position
4	Start service mode by pressing **11** briefly
8	Manual pairing: Connect the locking unit in service mode by pressing **11** briefly

Command-driven coupling

In this case coupling is performed via a command to the online module. This provides the possibility to assign an address explicitly to the knob. Furthermore this possibility is practical if the online module has been mounted in places that are difficult to access (e.g. false ceiling). The locking unit to be connected must be brought to programming mode by using the service key card. Now the bus master must send the coupling command to the online module which initiates a coupling.

5.2   Network identification and authentication

5.2.1   Port

The device uses port 1470. On most systems, this port can be used by normal users without special rights.

5.2.2   MAC address

The online module always has four different directly consecutive MAC addresses, one for each of the basic functions of the installed LAN module.

Example:

1	E8:31:CD:CD:79:5C = MAC address Station (Wi-Fi)
2	E8:31:CD:CD:79:5D = MAC address Access Point (hotspot for configuration)
3	E8:31:CD:CD:79:5E = MAC address Bluetooth
4	E8:31:CD:CD:79:5F = MAC address LAN

The MAC address of the online module can be determined in different ways:

Data matrix

▶   You can find the MAC address of the device coded in the data matrix

     installed on the LAN module. **15**

▶   Scan the data matrix with a suitable mobile device (e.g. QR code reader of a smartphone). The last 12 digits of the determined text show the lowest of the MAC addresses ("MAC address Station (Wi-Fi)").

Web interface

Two of the four MAC addresses (no. 1+2) can be viewed in the web interface:

▶   Start the web interface as described in the chapter "Configuration of the network interface"

▶   Tap on the button "Info"

▶   Scroll to the "Wi-Fi" section. This contains the MAC addresses:

▶   Station MAC: MAC address Station (Wi-Fi) next to

▶   Access point MAC: MAC address Access Point

Sign in to FsmLanConfig
192.168.4.1   ⋮

WiFi

Connected
No
Station SSID

Station IP
0.0.0.0
Station Gateway
0.0.0.0
Station Subnet
0.0.0.0
DNS Server
0.0.0.0
Hostname
esp32-CA47C8
Station MAC
E8:31:CD:CA:47:C8
Access Point IP
192.168.4.1
Access Point MAC
E8:31:CD:CA:47:C9

5.2.3   Configuration of the network interface

To carry out own settings of the IP addresses, the CX8942 has a web interface. This can be addressed either via the LAN interface or the Wi-Fi interface of the CX8942.

Starting via Wi-Fi   For the configuration, the CX8942 acts as a Wi-Fi Access Point (hotspot). You require a mobile device with activated Wi-Fi for the configuration.
To start the Access Point, button 7 must be held down while the unit performs a reset. **After that all LAN-specific settings are reset to the factory state.** The pairing of the locking units remains

▶   Open the Wi-Fi device menu of your mobile device

▶   Keep the **13** button pressed

▶   Tap the reset button **14** or optionally reconnect the LAN cable.

▶   Continue to hold down the **13** button until a Wi-Fi network with the SSID: "FSMLanConfig" is displayed in the Wi-Fi menu of your mobile device. This can take several seconds.

▶   Release the **13** button

▶   Tap on the list entry "FSMLanConfig"

▶   Enter the password *StartConfig*

The web interface now starts automatically in a browser window.
Alternatively, it can also be opened via the IP address 192.168.4.1 in a web browser.

ⓘ   **For security reasons, be sure to assign a new secure password in the web interface.**

Changing the ▶ Tap the button "Configure network".
password
▶ Select the "HTTP Basic Auth" under the item "Configure portal protection".

▶ Select a secure password for the user "admin".
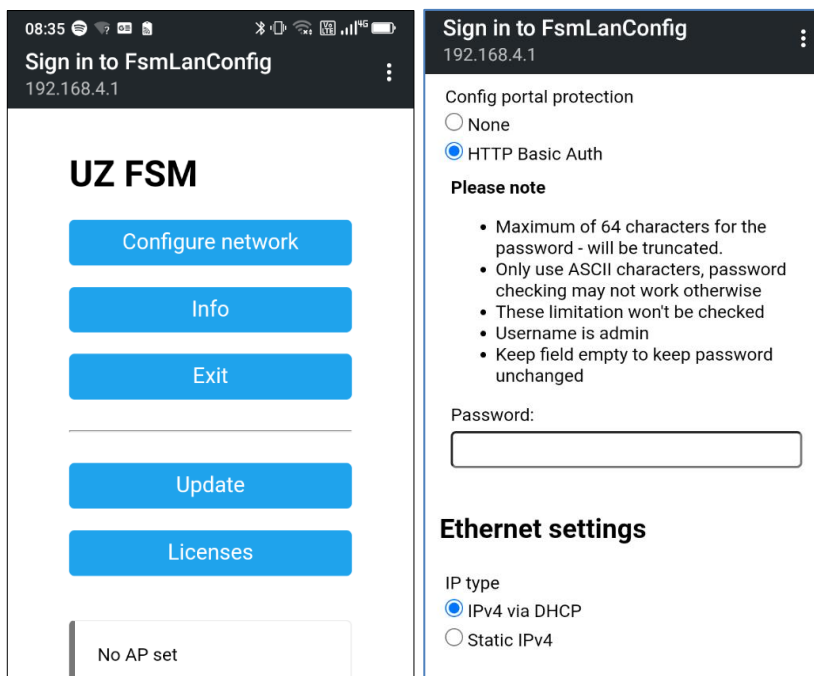
Access to If the module is started by pressing the button in the Wi-Fi configuration mode as
configuration tool via described above, the LAN interface is not active. If the module is started without
LAN connection pressing the button as described above, the website can be reached via the
address received via DHCP.

5.2.4 IP address in network

Assignment via DHCP By default, the online module can automatically obtain an IP address via DHCP
when it is connected to a network. The automatically assigned address can then,
for example, be displayed with the test application of the UZReader protocol
"ClexSerUZ_ReaderTest". In addition, the module should also appear in the web
interface of the router. The address can be viewed there as well.

Manual input of a Select the option "Static IPv4" in the web interface under "Configure network" in
static IP address the "Ethernet settings".

5.3 Configuring the online module

The configuration of the online mode normally takes place through the connected third-party system and the corresponding function of the respective protocols. Individual parameters of the online module can also be set directly via a 868 MHz-connection or bus commands in the service mode.

▶ Carry out the settings (e.g. LAN/WLAN communication) by means of the associated software tool (details are available in the respective protocol description).

6   Operation

If an authorized transponder is held in front of the connected locking unit, a radio connection is established with the online module and, depending on the version, the authorization is requested via the corresponding protocol of the third-party system.

If no radio connection can be established, for example in case of a power failure or a wireless attack, the electronics of the locking unit drops back into offline mode. In this mode the door can be opened with any transponder with offline authorization.

In this case the electronics of the locking unit warns the user, however, before opening with a distinctive visual and acoustic signaling.
When the locking unit is woken up, for example by a knob cylinder being turned or a door handle or knob module being actuated, a wireless connection is also established.

6.1   Reset

▶   Tap the reset button **13** or disconnect the device from the power supply (here LAN connection).

6.2   Resetting the configuration (factory reset)

Restarting configuration tools via Wi-Fi, as described in more detail in chapter 5.2.3 "Configuration of the network interface", resets the settings made. To this purpose, the delete button **14** must be held down while the unit performs a reset.

6.3   Firmware updates

The update tool "Clex FW Prog" is available to update the firmware of the module. Contact your respective Integration partner.

The LAN interface has its own firmware, which can be updated via the web interface (see section 5.2.3**Fehler! Verweisquelle konnte nicht gefunden werden.**).

6.4   Signaling

	LED	Meaning
16	Green rapid flashing	Network connection is established and IP address is being called
	Green slow flashing	The module can be reached as a Wi-Fi access point to carry out the initial configuration (see section 5.2.3**Fehler! Verweisquelle konnte nicht gefunden werden.** Configuration of the network interface)
	Green constant lighting up	Network connection has been established (Only for initial connecting. No function for disconnection during operation)
17	Red LED	Is currently not used

6.5   Malfunctions during operation/error signaling

	LED	Meaning
9	Red and yellow flashing after a reset; after that service mode	Mode wrong for the available firmware: Perform a suitable firmware update.
	Yellow lights up constantly after a reset	Micro-controller of the device is in boot loader mode. Perform a suitable firmware update.

6.6   Maintenance

Since the device is not protected specially against dust, the product should be checked regularly for dust deposits. The frequency depends on the dust level at the operation site.

6.7   Cleaning

Clean the housing with a soft, lint-free and only slightly moistened cloth. When cleaning do not use corrosive liquids or liquids that decompose plastic such as benzine, turpentine, etc.

Sharp detergents may damage or discolor the surface. Do not use any detergents, which act on a mechanical basis (e.g. scouring milk, scouring sponge).

Free the electronics from dust with a suitable brush or by careful use of compressed air at a sufficient distance.

7   Disassembly and disposal

7.1   Disassembly

7.2   Disposal

▶ Do not dispose of the device with household waste, but at a municipal collection point for special electrical waste in accordance with European Directive 2002/96/EC.

▶ Dispose of packaging as environmentally friendly recycling.

8   Glossary

Term	Meaning
VDE	German "Verband der Elektrotechnik" [Registered Association of the Electrical, Electronic and Information Technology]
PoE	Power supply via Ethernet (abbreviation of: Power over Ethernet)
phg_crypt	Standard protocol of the company phg Peter Hengstler GmbH + Co. KG, Deißlingen in Germany