Autonomous Access Controller

U-PROX CLC G80

Installation and Operation Manual

Rights and Their Protection

Trademarks

About This Document

This manual describes the procedures for installing, connecting, and operating the autonomous U-PROX CLC G80 controller (hereinafter – the controller). Before installing the controller, please read this manual carefully.

The specifications and parameters of the controller are described in the **Specifications** section. The **Terms** section explains the terminology used in this document.

The appearance of the controller, description of the contacts, and operating modes are provided in the **Description and Operation** section. The sequence for installation, connection of external devices, and configuration of the controller is described in the **Device Operation Procedure** section.

Attention!

Before installing and connecting the controller, be sure to read this manual carefully. Installation and connection are permitted only by persons or organizations authorized by the manufacturer.

Training and Technical Support

Training courses on the installation and use of the U-PROX CLC G80 controller are conducted by “Limited Liability Company Integrated Technical Vision”. For more information, please contact the company representatives at the phone numbers listed below.

Technical Support:
+38 (091) 481 01 69
support@u-prox.systems
https://t.me/u_prox_support_bot

This support is intended for trained specialists. End users should first contact their dealers or installers.

Additional technical information can be found on the website: www.u-prox.systems

Certification

“Limited Liability Company Integrated Technical Vision” declares that the U-PROX CLC G80 meets the requirements set forth in this manual, as well as the Electromagnetic Compatibility Directive and Directive 2011/65/EU (RoHS). The original Declaration of Conformity is available on the website www.u-prox.systems in the “Certificates” section.

Contents

Controller Description

The U-PROX CLC G80 controller is an autonomous device designed to control access in residential and industrial premises. The controller manages one actuating device. U-PROX CLC is used to restrict access in premises with one door and one reader. The controller processes information received from the reader via an RS232 interface and, using an integrated relay, switches the actuating device (for example, an electric lock). A U-PROX reader must be connected to the controller. It allows for setting access rules, editing the list of identifiers, and complete configuration of the controller via Bluetooth Low Energy (BLE).

Device Purpose

The U-PROX CLC G80 controller is designed for autonomous operation and to organize access control at entry points.

Specifications

Autonomous Mode

- Supply Voltage: +10.8 ... +15 V

- Current Consumption from a 12V Source: not more than 70 mA
- Supply Ripple Amplitude: not more than 500 mV
- Connection of U-PROX contactless identifier reader
- Built-in touch exit request button
- Door contact input (DC)
- Input for connecting the built-in exit request button (RTE)
- Tamper contact for enclosure opening
- One relay (NO, NC, COM): 3 A @ 12 V
- Alarm transistor output (open collector): 12 V, 160 mA
- Configuration via smartphone using Bluetooth (BLE)
- Real-time clock and non-volatile memory:
    - Identifiers – 508
    - Events – 1000
- "Day" and "Night" modes via schedule and manual selection
- Overall dimensions: 84.3 × 84.3 × 14.5 mm
- Enclosure material and color: ABS+PC, Gorilla Glass, black
- Weight: 0.13 kg
- Climatic version: IP42 (from 0 to +55°C); operational at relative humidity up to 80% without condensation

Terms

Identifiers: Each user in access control systems has a unique code. Identifiers can be in the form of plastic cards, key fobs, mobile devices, etc.

Reader: Devices for reading codes that connect to the controller. Only U-PROX series readers can be connected to the U-PROX CLC G80.

PIN Code: A keypad code entered using a reader with an integrated keypad.

Doors: The access control point (e.g., door, turnstile, access booth). The access point is the logical unit of the access control system.

Exit Request Button: Used for exiting the premises; other methods of opening may trigger a “DOOR TAMPER” event.

Door Contact: Input for connecting sensors (magnetic, rotary, limit switch) to monitor the door status.

"Door Time" Interval: The period during which, after a user is granted access, the door is not monitored even if the contact is interrupted.

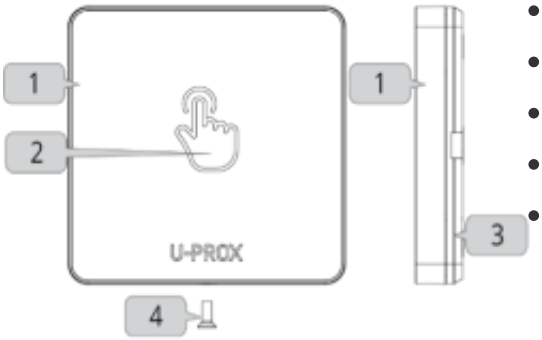
Identifier Guessing Attempt: If an unregistered identifier is presented several times in succession, the controller enters a blocking mode.

Loading: After programming, the settings are loaded into the controller.

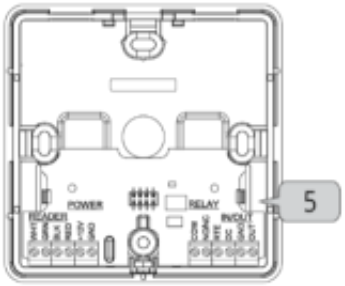
Description and Operation

Controller Structure

The controller consists of the following components:



- Device enclosure
- Built-in touch button and LED
- Lower part of the enclosure
- Mounting screw
- Device board with terminal blocks



Purpose of Controller Contacts

Contact	Name	Purpose
GND	–	Connection of external power supply
+12V	–	–
NO/NC	Relay Contact	Relay contacts
COM	Common	–
RED	Power, +12V	Reader connection
BLK	GND	–
GRN	Data 0	–
WHT	Data 1	–
GND	–	Connection for harnesses

DC	Door Contact	–
RTE	Exit Request Button	–
OUT	Alarm Output	–

Audio-Visual Indication of the Controller

Access modes are indicated by the reader connected to the controller. The default settings are as follows:

- **Standby Mode:** no sound, red LED blinks once per second
- **Night Mode or Lockout:** no sound, red-yellow blinking once per second
- **Alarm:** no sound, continuously red
- **Card Registration:** no sound, green LED blinks once per second
- **Initialization:** no sound, no light indication
- **Data Reading/Loading, Firmware Update:** no sound, continuously red
- **Access Granted:** a short beep with continuous green; 5 seconds before the door time expires – a short beep once per second
- **Access Denied:** continuous beep, continuously red

The LED indication on the touch button only reflects its pressing!

Controller Operation

Controllers are shipped in an unconfigured (factory) state. In this state, the controller's red LED blinks once per second.

To operate the controller, it must be configured using the configuration software on a mobile device. After the settings are loaded and if the connection is correct, the controller enters the "Standby" mode.

Code Entry or Proximity Card Presentation

Code entry is performed by sequentially pressing the keys on the reader's keypad. The code length must be between 4 and 10 digits, and the entry is terminated by pressing [#]. Each key press is accompanied by a short buzzer sound. Correct entry is confirmed by a short beep, an error by a long beep.

After several incorrect or unregistered code entries, the reader will lock for 40 seconds. To cancel the entry, press [*]. If no key is pressed within 40 seconds, the entered data is erased and

the device returns to its main mode.

Presenting a proximity card (at a distance of a few centimeters) is equivalent to code entry. The type of identifier is determined by the reader.

Using the U-PROX Mobile ID app for identification from mobile devices (via Bluetooth Low Energy) is equivalent to code entry or card presentation.

Time Parameters

Default Time: For convenient configuration, default time intervals are provided in the controller. For example, a relay time value of 255 means the factory setting of 3 seconds. If several codes are set to a relay time of 255, it indicates the "default relay time". Changing this value affects the parameters of all codes with this setting.

Entry/Exit Time: After the relay is activated, a delay for entry/exit begins. If the door remains open 5 seconds before the delay ends, a warning beep is activated. The value can range from 0 to 253 seconds.

"Open Door" Mode: If the entry/exit time for a certain code is set to 254 seconds, after presenting this code, door status monitoring stops until the door is closed again.

Code Guessing Block: If an unregistered identifier is presented three times in a row, the controller enters a blocking mode for a specified time.

Controller Operating Modes

The controller can operate in the following modes:

- Main Day Mode
- Main Night Mode
- Programming Mode
- Code Selection Block Mode

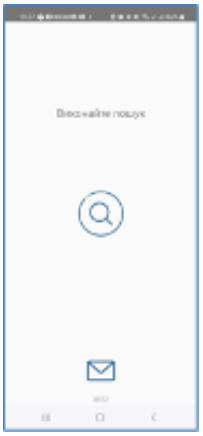
In the main day mode, the reader’s LED blinks red. When a registered identifier is presented, the programmed action is executed (usually – relay activation). In night mode, only identifiers with 24/7 access are active. Mode switching is done by presenting a special identifier or automatically according to a schedule. When a duress code is entered, the controller immediately triggers the alarm output.

Controller Programming

1. Download and install the U-PROX Config software (hereinafter – the configurator).

Supported devices: Android 5.0 and above, and Apple devices with iOS 8.0 and above, that have Bluetooth 4.0 and above with BLE support.

2. Launch U-PROX Config



3. Tap the "Search" button to begin searching for devices.

If Bluetooth is not enabled, the app will prompt you to enable it; tap "OK".

Attention! For BLE to work on Android 6.0 and above, location services must be enabled.

4. Select the controller from the device list and tap the "Connect" button – an engineer code prompt will be displayed.

5. After entering the correct code, the controller configuration will be displayed.

If an attempt is made to connect without authorization, a message will appear in the app window indicating that access is not permitted.

6. After reading the configuration, the main menu becomes available. Advanced functions will be displayed after selecting the "NEXT" option.

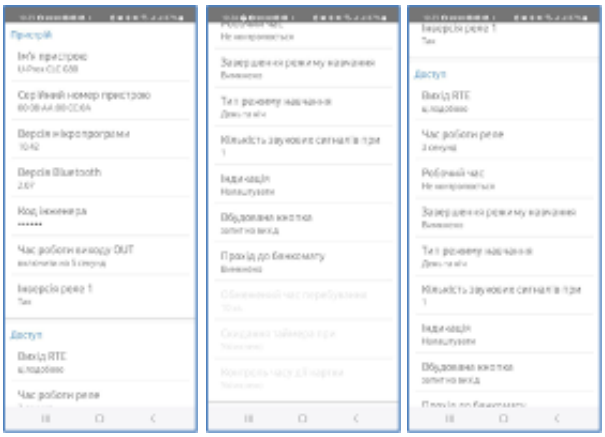
If changes have been made to the configuration, the "Write to Device" menu option becomes available. After tapping it, the configuration will be written to the controller’s memory.

To disconnect from the controller, tap the "Disconnect" (X) button.

Attention! If you disconnect without writing the configuration, all changes will be lost.

Settings Menu

This menu contains the main settings of the controller.

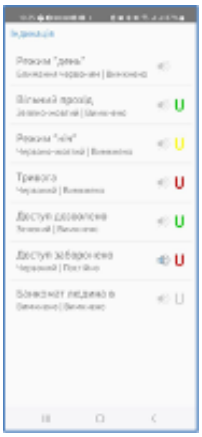


Device Settings Group

- "Device Name" – change the controller's name
- "Firmware Version" and "Bluetooth Version" – view versions and update the firmware
- "Engineer Code" – change the engineer code (a new code is accepted if it does not match existing user codes or duress codes)
- "OUT Output Duration" – the time for activating the alarm output OUT (from 0 to 240 seconds)
- "Relay Inversion" – switch between relay operating modes (NO and NC)

Access Settings Group

- "RTE Output" – configuration of the operating modes for the RTE input (external exit request button):
    - "24/7" – the button operates continuously in access granting mode
    - "24/7 + toggles day-night" – the button works continuously for switching the “day/night” schedule
- "Relay Operation Time" – set the default relay activation time (from 2 to 254 seconds)
- "Working Hours" – configure automatic mode change: within the specified time interval the device operates in day mode, outside the interval in night mode; if disabled, switching is possible only manually via the corresponding identifier
- One minute before switching to night mode, the controller emits a short beep once per second, and 20 seconds before – two short beeps per second
- "Number of Sound Signals on Access" – set the sound indication for granted access (1 or 5 signals)
- "Indication" – configure custom indication in various controller modes



- "Built-in Button" – enable/disable the built-in touch button

Learning Mode

This mode is used for automatically memorizing identifiers when they are presented to the

reader (for example, when replacing the controller or if user cards have not yet been added). When learning mode is enabled, the controller automatically grants access, unlocks the relay, and stores the identifier in memory. The learning mode operates under limitations regarding time and the number of supported identifiers.

"Learning Mode Type" – indicates the access level under which identifiers will be stored during learning (for example, "Day and Night" or "Day").

ATM Mode

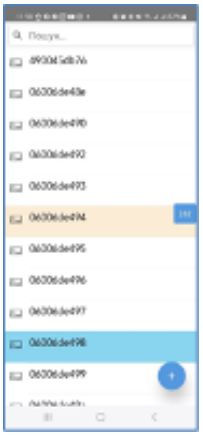
This mode is used for organizing access to premises for users with certain types of identifiers. In this mode, identifiers are not stored in the controller's memory – decisions are made based on the reader's input. Additionally, a function for monitoring the duration of stay in the premises is available. For this purpose, a motion sensor is connected to the RTE input with an installed resistor.

The mode settings include:

- "ATM Mode" – enable or disable the mode
- "Limited Stay Time" – set the maximum allowed time in the premises; if exceeded, the controller's OUT output is activated
- "Reset Timer on Motion" – if enabled, the timer resets when the motion sensor is triggered
- "Bank Card Validity Control" – enable or disable control over the expiration of the identifier (requires additional reader configuration)

Access Menu

The main "Access" menu contains a list of codes loaded into the controller. Each list item includes:

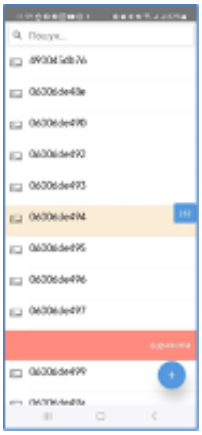


- An identifier with an indication of the access type (Day – white background; 24/7 – orange; No access – gray; Free passage mode – light blue)

- The code name or numeric value if no name is provided

Identifier Deletion

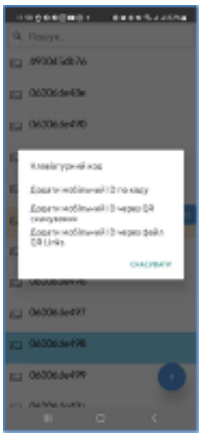
To delete an identifier, swipe the item from right to left. The item will be marked as deleted. To cancel deletion, tap "Cancel".



Identifier Addition

To register a new card, present it to the reader connected to the controller – the card will be added to the list with default settings.

To register a keyboard code, enter it via the reader, ending with [#] – the code will be added to the default list.



To register a mobile identifier, present the mobile device with the U-PROX Mobile ID app (with U-PROX BLE ID) to the reader (at a distance of 5–10 cm) and tap the "Open" button in the app – data exchange will occur.

To manually enter a keyboard code in the app, tap the "Add" (+) button, select "keyboard code" and enter it.

To manually add a mobile identifier by code, tap the "Add" (+) button, select "Add mobile ID by code" and enter the code printed below the QR code.

To add mobile identifiers using QR scanning, tap the "Add" (+) button, select "Add mobile ID via QR" and scan the QR codes using a smartphone with the U-PROX Config app.

To add mobile identifiers from a QR Links file, tap the "Add" (+) button, select "Add mobile ID via QR Links file", choose the desired file and tap "Upload".

Identifier Parameter Settings

To change the access parameters for an identifier, select it from the list (tap the item). A parameter window will open where you can configure:

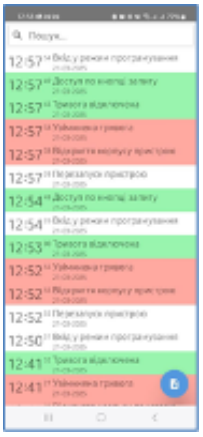
- Name
- Access category ("Day" or "24/7")
- Type of reaction to identifier presentation

To save the changes, tap the "Apply" button. To edit parameters for multiple identifiers, select the first item, hold to highlight it, then tap other items briefly, and finally tap the button to open the editing window. Change the parameters and save by tapping "Apply".

To exit the "Access" section, tap the "Back" button.

Journal Menu

This menu allows you to view the event history, filter events, and export the journal for further analysis.



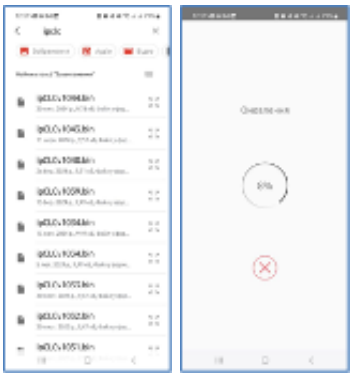
To export the journal, tap the corresponding button – the journal will be saved in the device's temporary memory. The U-PROX Config app will offer options to save or send the journal using built-in methods.

To exit the "Journal" section, tap the "Back" button.

Update Menu

This menu allows you to update the controller's firmware via BLE. After selecting this option, the app will prompt you to choose an update from cloud storage or local storage – a list of *.bin files will be displayed, and the update will start upon file selection.

After selecting the "From local storage" option, a list of available *.bin files will be displayed. Select one – the firmware update process will begin.

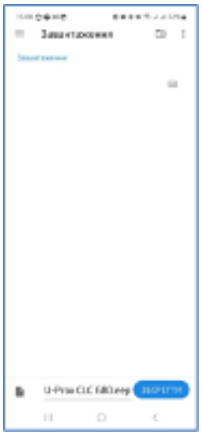


Attention! All firmware files must be located in the "Download" folder of the mobile device's internal memory.

Device Configuration Backup and Restore

Select the "Templates" menu option. A menu with actions will appear: "Save" and "Restore".

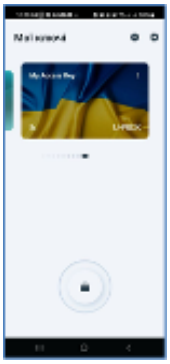
When selecting "Save", all settings are recorded to a file named after the controller with the *.eep extension in the "Download" folder of the mobile device.



When selecting "Restore", a list of available configuration files will be displayed, from which you can choose the desired file to load the settings into the controller.

Mobile Identifier

Download and install the U-PROX Mobile ID app. Devices running Android 5.0 and above with Bluetooth 4.0 (BLE) are supported. Launch the app and add an identifier via QR code or U-PROX Desktop.



Present the mobile device to the reader (10–20 cm away) and tap the "Open" button – data exchange will occur. If the identifier is registered and has the correct rights, access will be granted and the door will open.

Attention! For BLE to work on Android 6.0 and above, location services must be enabled.

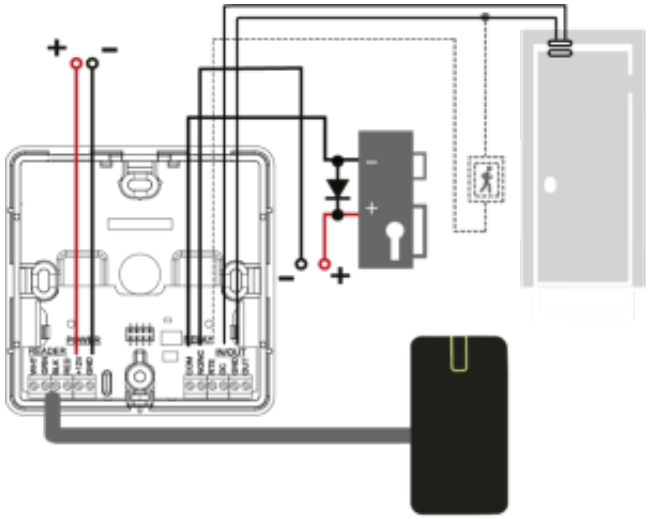
Device Operation Procedure

The controller is housed in a compact plastic enclosure. Its connection and installation are performed according to the following instructions.

Controller Connection and Installation Procedure

At the installation site, perform the following steps:

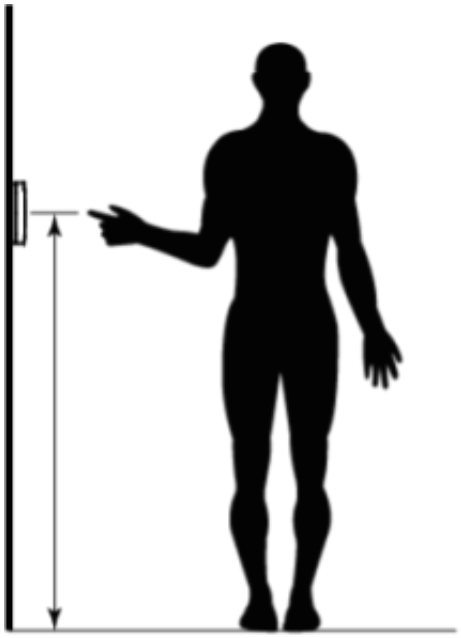
- Mark the location and drill the required holes.
- Screw in the mounting screw located at the bottom of the controller.
- Remove the top cover.
- Using the back plate as a template, drill two holes with a diameter of 5 mm and a depth of 30 mm.
- Run cables from the power supply unit, actuating device (e.g., electric lock), reader, and controller inputs to the harnesses.
- Connect the wires according to the following sections (it is recommended to use a junction box).
- Conceal the installation cables in the wall.
- Reattach and secure the back plate, connect the connector for the harness, put on the top cover, and secure it with the screw.
- Complete the full configuration of the controller using the mobile app.
- The device is ready for operation.



Using the mobile app, complete the full configuration of the controller. After this, the device is ready for operation.

Installation Recommendations

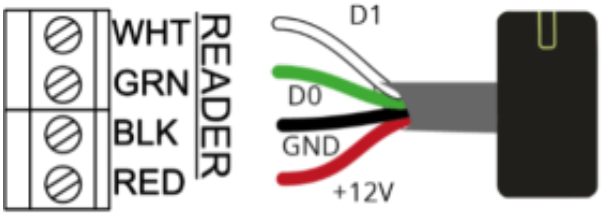
It is recommended to install the controller on the wall next to the door so that the user can easily press the exit request button.



Power and other cables should not run closer than 0.1 m from the device enclosure.

Reader Connection

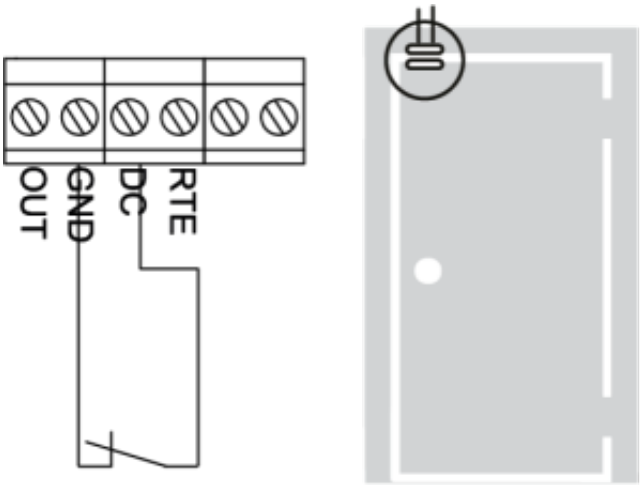
A reader must be connected to the controller. Only U-PROX readers are compatible with the controller.



The current consumption of each external reader connected to the +12V terminal must not exceed 100 mA. If long-range readers draw more than 100 mA, their supply voltage must be provided from a separate source.

Door Sensor

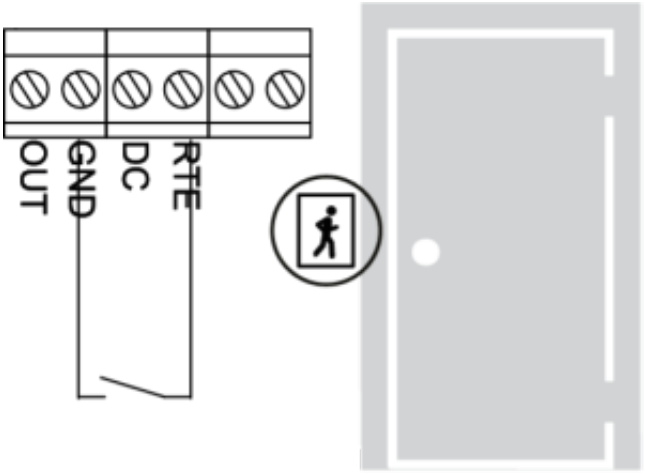
The controller determines the door status (open/closed) using the door contact. Without the contact, the controller cannot detect unauthorized access or a situation where the door remains open for too long.



It is recommended to equip doors controlled by the access system with a door closer.

Exit Request Button

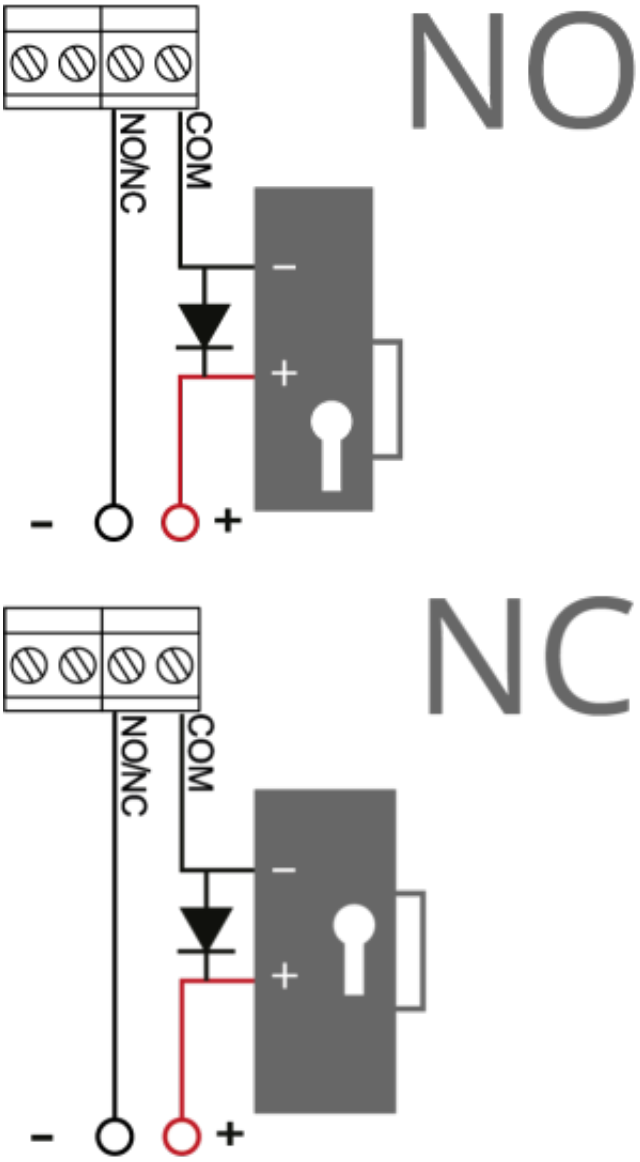
The door is opened by pressing and releasing the exit request button. Additionally, this button can be used for remote door opening (e.g., by a receptionist or security guard). Using the button on an electric strike triggers a "DOOR TAMPER" event.



Actuating Devices (Relay)

To control actuating devices, the controller is equipped with one solid-state relay. It can be used to control an electric lock or strike. The relay has normally closed (NC) and normally open (NO) contacts, which allow control of actuating mechanisms with a current consumption of up to 1 A at 30 V.

If all actuating devices are switched on/off simultaneously, voltage drops may occur; these should not cause the controller to malfunction. If necessary, connect a separate power supply for the actuating devices.



When using the relay contacts to control an inductive load (e.g., an electromagnetic lock), a flyback diode should be installed in reverse across the coil power supply to avoid contact damage.

Low-cost electromagnetic strikes do not support prolonged voltage application. For them, program the relay time accordingly to prevent coil overheating.

Alarm Output

The controller's alarm output is transistor-based (open collector). When the OUT contact is activated, it is connected to the GND contact. The alarm output can be used to connect to an external alarm system or an actuating device, provided its current consumption does not exceed 60 mA.

If a door contact (normally closed) is connected to the device harness, the alarm output is activated upon contact opening, except during the entry/exit time interval. The alarm output remains active for a programmed time interval – from 0 to 254 seconds. A value of 0 seconds

means the alarm output is not activated, while 255 seconds means it remains active until the alarm is cancelled with the appropriate code or card.

Controller Programming Procedure

Software	Actions
U-PROX Config (BLE)	Device configuration, setting door open time, configuring output pulse durations, and registering identifiers with creation of users with the corresponding access categories

After forming and loading the configuration, the device is ready for operation.

Maintenance

Factory Reset

- Disconnect power from the controller
- Remove the top cover
- Short-circuit the OUT and DC contacts
- Reattach the top cover
- Apply power and wait 40 seconds
- Disconnect power, remove the top cover, and disconnect the OUT and DC contacts

Engineer Password Reset

- Disconnect power from the controller
- Remove the top cover
- Short-circuit the OUT and RTE contacts
- Reattach the top cover
- Apply power and wait 40 seconds
- Disconnect power, remove the top cover, and disconnect the OUT and RTE contacts

Factory Settings

- Engineer Code: 1234
- Door Time: 20 seconds; code blocking on multiple incorrect attempts: 40 seconds
- Inputs (loops): RTE – 24/7 mode
- Outputs: Relay – 3 seconds, OUT (alarm) – 10 seconds

Maintenance and Repair

Warranty and post-warranty service for U-PROX CLC G80 controllers is carried out by authorized persons or organizations with manufacturer authorization.

Warranty Obligations:

- Warranty storage period – 6 months from the date of manufacture
- Warranty operation period – 12 months (or 18 months, depending on the edition) from the moment of commissioning
- If a defect caused by a manufacturing error is detected, repairs will be completed within 10 days from receiving the notification
- If commissioning work is performed by an organization not authorized by the manufacturer, the consumer forfeits warranty service
- Warranty repair will not be performed in cases of:
    - incorrect connection,
    - non-compliance with the manual requirements,
    - mechanical damage,
    - force majeure.
- The manufacturer reserves the right to make design changes that do not affect the main technical characteristics and reliability of the product.