

U-PROX Multiplexer User Manual

Wired Alarm Integration Module for the U-PROX Security System

Table of Contents

- Description
 - Safety Warnings
 - Applications for Customization
 - Description and Principle of Operation
 - Functional Elements of the Device
 - Technical Specifications
 - Installation Instructions
 - 7.1 Preparing the Installation Site
 - 7.2 Mounting the Multiplexer
 - 7.3 Wiring and Connection
 - Operation and Settings
 - 8.1 Device Registration and Pairing
 - 8.2 Testing and Configuration
 - Maintenance and Service
 - Compliance and Warranty
 - Scope of Delivery
-

1. Introduction

The U-PROX Multiplexer is a wireless module designed to integrate wired equipment—such as detectors, infrared barriers, gas detectors, and wired sirens—into the U-PROX security system. Featuring dual Li-Ion backup batteries and multiple power outputs, the Multiplexer ensures reliable operation even during power outages. This module is intended for indoor installation and is managed through the U-PROX Installer mobile application.

For technical support, please contact:

Phone: +38(091)481-01-69

Email: support@u-prox.systems

2. Safety Warnings

Battery Safety:

This device contains two pre-installed 18650 lithium batteries. Replacing these batteries with a non-approved type may result in fire or explosion. Always dispose of used batteries according to local regulations.

Installation Precautions:

Ensure that the Multiplexer is installed with the power disconnected. Follow all applicable electrical and fire safety standards during installation and maintenance.

Handling:

Do not disassemble or modify the device. Follow the instructions provided to avoid damaging sensitive components or compromising system safety.

3. Applications for Customization

The U-PROX Multiplexer is fully integrated with the U-PROX security system. Customize its operation and monitor its status using:

- **U-PROX Installer Mobile Application:** Configure, test, and monitor the Multiplexer along with other system components directly from your mobile device.
- **Installer Web Portal:** For advanced configuration and remote monitoring, access the U-PROX Installer web portal.

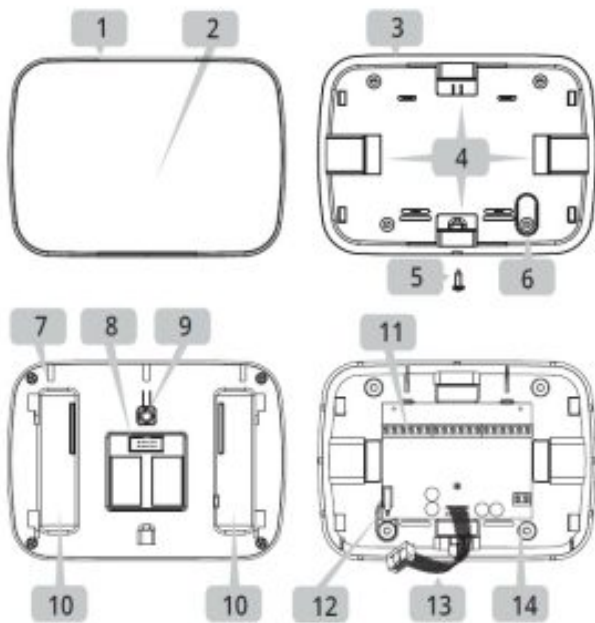
4. Description and Principle of Operation

The U-PROX Multiplexer bridges wired devices into the wireless U-PROX control panel. It converts signals from wired detectors and sensors to wireless data transmitted via a secure ISM-band interface. The device also provides power outputs to connected wired equipment and includes backup power from built-in Li-Ion batteries to ensure uninterrupted operation during power failures.

The Multiplexer automatically detects which devices require relaying. Intelligent algorithms coordinate the most optimal data transmission route between the extenders and the security center. The device also supports relaying images from motion detectors with built-in U-PROX PIR Cam.

It has a built-in 2500 mAh battery and can operate for up to 36 hours in the absence of main power. It is installed indoors and works exclusively with the U-PROX security system.

5. Functional Elements of the Device



1. **Device Case:** The main enclosure housing all components.
2. **Light Indicator:** Displays operating status and communication signals.
3. **Case Back Cover:** Provides access to internal components.
4. **Wire Conduit:** Channels cables neatly from the device.
5. **Locking Screw:** Secures the case back cover.
6. **Tamper Switch:** Monitors unauthorized access attempts.
7. **Upper Part (Rear View):** Displays internal wiring connections.
8. **Connector:** For interfacing with the system's wired network.
9. **On/Off Button:** Powers the device on or off.
10. **Battery Compartment:** Houses the two 18650 batteries.
11. **Bottom Plate:** Forms the lower part of the device housing.
12. **Tamper Switch (Secondary):** Provides additional security against case opening.
13. **Bottom Plate Connector:** Connects the bottom plate to the main board.
14. **Power Supply Connector:** For connection to an external power source.

6. Technical Specifications

Power Supply & Backup:

- Operates on a DC supply of 10.8 to 13.8 V.
- Backup power provided by two 2500 mAh batteries, supporting up to 10 hours of operation (with 8 wired detectors drawing 15 mA each).

Wireless Communication:

- Interface: ISM-band with several channels.
- **Frequency (ITU Region 1):** 868.0 to 868.6 MHz; (Region 3): 916.5 to 917 MHz.
- Bandwidth: 100 kHz; Max Power: 20 mW; Range: Up to 4800 m (line-of-sight).
- Security: Encrypted two-way communication with a 256-bit key and sabotage detection.

Operating Temperature: -10°C to $+45^{\circ}\text{C}$

Dimensions & Weight:

- 167 x 120 x 38 mm; Weight: 0.64 kg

Power Outputs & Inputs:

- Outputs: Two outputs (AUX and SWA) with a resettable fuse (200 mA at 12V) and one relay output (Normally Open, Common).
- Inputs: 8 wired inputs (Z1 to Z8).
- Additional: +3 V LED for status indication.

Environmental & Safety Ratings:

- Environmental Class: II (EN 50131-1)
- Permissible Humidity: Up to 75%
- Security Grade: 2
- Case Color: White

7. Installation Instructions

7.1 Preparing the Installation Site

Location: Install the Multiplexer indoors in an area with stable environmental conditions.

Considerations: Choose a location free from excessive moisture, dust, or temperature extremes. Ensure that wired detectors and sensors can be easily connected.

7.2 Mounting the Multiplexer

Surface Preparation: Ensure the installation surface is clean, flat, and secure.

Mounting: Attach the device case to the wall or rack using appropriate mounting hardware (refer to the mounting kit and quick start guide). Secure the device with the

locking screw.

Wiring: Route the sensor and detector cables through the wire conduit. Connect them to the designated inputs (Z1 to Z8).

7.3 Wiring and Connection

Power Supply Connection: Connect the external power supply to the power supply connector. Verify that the input voltage is within the range of 10.8 to 13.8 VDC.

Communication: Ensure that the device's wireless interface has an unobstructed path for signal transmission.

Backup Battery Check: Confirm that the two 18650 batteries are properly installed and provide backup power.

8. Operation and Settings

8.1 Device Registration and Pairing

Launch the U-PROX Installer mobile app or web portal and log in with your installer credentials.

- **Register the Multiplexer:** Follow the on-screen instructions to add the Multiplexer to your U-PROX security system. Ensure that the device is within range of the control panel during registration.
- **Confirmation:** The LED indicator on the Multiplexer will confirm successful registration.

8.2 Testing and Configuration

Communication Test: Use the Installer app to run a communication test. The light indicator will display signal quality.

- **Output Control:** Test the AUX and SWA outputs as well as the relay output to ensure connected wired equipment is functioning correctly.

Configuration: Configure settings such as power outputs, input assignments, and alarm thresholds using the U-PROX Installer application.

9. Maintenance and Service

Cleaning:

Regularly clean the device's case and connectors with a soft, dry cloth to prevent dust accumulation.

Battery Replacement:

Replace the 18650 batteries only with the approved models. Follow proper safety guidelines and local disposal regulations.

Troubleshooting:

If the device fails to communicate or function as expected, verify all wiring connections, check the power supply, and consult the U-PROX Installer app for diagnostic information.

10. Compliance and Warranty

Standards Compliance:

The U-PROX Multiplexer complies with the Radio Equipment Directive 2014/53/EU and Directive 2011/65/EU (RoHS). The original Declaration of Conformity is available on the U-PROX website in the Certificates section.

Warranty:

Warranty for U-PROX devices (excluding batteries) is valid for two years from the date of purchase. For any issues, please contact support@u-prox.systems; remote troubleshooting may be available.

11. Scope of Delivery

The complete package includes:

- U-PROX Multiplexer
- Two 18650 Batteries (Pre-installed)
- Quick Start Guide

