BOXLOCK



Safety Guidebook

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BoxLock, Inc.
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Introduction

Purpose of the Handbook

Section 1: Understanding BoxLock Control

Overview of BoxLock Control Systems

BoxLock Control represents a cutting-edge solution in supply chain access control and asset management. This system is designed to enhance the security, efficiency, and tracking of physical assets across various industries.

- **Primary Function**: BoxLock Control devices secure assets through smart locking mechanisms that integrate advanced technology for tracking, monitoring, and controlling access.
- **Usage Contexts**: Ideal for logistics, industrial distribution, manufacturing construction, and other sectors requiring secure and monitored access to assets.

Detailed Overview of BoxLock Devices

BoxLock devices are smart, connected locks that provide robust security and tracking features. Understanding these components is key to effectively utilizing and troubleshooting the system.

1. **Physical Components**
    - **Locks:** The core of the BoxLock system, these smart locks secure containers, job boxes, tool cribs and assets. They are IP-66 rated and designed to withstand various environmental conditions and unauthorized access attempts.
    - **Sensors:** Equipped with sensors for detecting and alerting on conditions like tampering, theft, unauthorized access or environmental changes.
    - **Connectivity Modules:** Include Wi-Fi and dual network cellular capabilities to ensure reliability and connectivity for monitoring and control.
2. **Operational Features**

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- **Barcode Scanning:** Enables secure and controlled access through barcode or QR code authentication, ensuring only authorized individuals can unlock the device.

- **Connectivity:** Supports both Wi-Fi or cellular networks, ensuring consistent remote access and control, crucial for operations in diverse locations. The devices cannot be configured to use Wi-Fi or cellular simultaneously.

- **GPS Tracking:** Some models include GPS functionality, providing real-time location tracking of the locked assets, essential for asset management and recovery.

3. **Power Source and Battery Life**

    - BoxLock devices are powered by rechargeable 18650v batteries, designed for long-term operation. Understanding battery life and charging protocols is crucial for uninterrupted usage.

4. **Security Features**

    - **Encryption and Data Protection**: Ensures that all communication and data storage is secure, protecting sensitive information against unauthorized access.

    - **Intrusion Detection**: Alerts users to any attempts at unauthorized access, either physical or digital, enhancing the overall security of the assets.

Common BoxLock Control Scenarios

- **Regular Operations:** Covers standard procedures for locking, unlocking, monitoring, and managing assets using BoxLock devices.

- **Emergency Scenarios**: Details potential emergency situations such as device malfunction, loss of connectivity, or security breaches, and outlines appropriate responses.

Section 2: General Safety Protocols

This section of the Safety and Fail-Safe Handbook focuses on the general safety protocols for handling and operating BoxLock Control devices. Adhering to these guidelines is crucial for ensuring the safety of the users and the security of the assets they are protecting.

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Safe Handling of BoxLock Devices

1. **Physical Handling and Transportation**

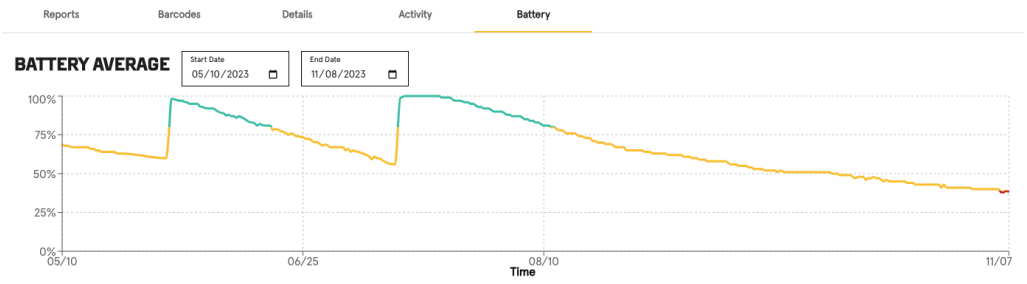
    - **Handling Care**: Always handle BoxLock devices with care to avoid damage. Avoid dropping or exposing them to excessive force.

    - **Transportation**: While transporting devices, ensure they are securely stored to prevent movement that could lead to damage.

2. **Environmental Considerations**

    - **Temperature and Weather:** BoxLock devices are designed to withstand various environmental conditions. However, extreme temperatures, moisture, and direct sunlight exposure should be avoided when possible.

      Extreme temperatures may impact how long a devices maintains their charge. Keeping batteries with a regular charge greater than 50% is recommended.



      Detailed Battery Status can be viewed by selecting the “Battery” tab on the Lock Details Page in BoxLock Control.

    - **Placement:** Install the devices in locations where they are not susceptible to being under direct water, submerged in water, or exposed to hazardous materials.

      BoxLock devices have been subjected to a wide range of testing to ensure that they are safe for use in varying conditions, including dip testing in strong acids and strong bases. The devices have not been tested and should not be considered Intrinsically Safe. The devices are IP-66 rated.

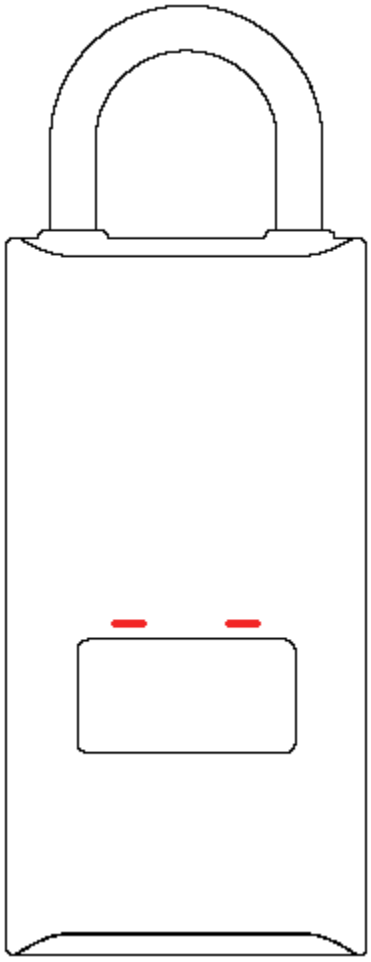
      The "IP" stands for Ingress Protection, and it is followed by two digits:

i. The first digit (6 in IP-66) indicates the level of protection against solid particles like dust. A rating of 6 means that the device is completely dust-tight.

ii. The second digit (6 in IP-66) describes the level of protection against liquids. A rating of 6 means that the device can withstand powerful water jets from any direction. Essentially, it can withstand a high degree of water spray.

In summary, an IP-66 rating means that a device is completely dust-tight and can resist powerful water jets, making it suitable for various outdoor and industrial environments where dust and water exposure are a concern.

To properly maintain the device, inspect the two drains at the rear of the device.



On the rear of the BoxLock Padlock there are two drainage holes that should remain accessible and clear of debris.

Check these holes periodically to ensure they are not clogged.

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Section 3: Troubleshooting Common Issues with BoxLock Devices

Identifying the Lock

The universal way of identifying a lock is by the MAC Address on the back of the lock. This will be contained on the label on the back of the lock and engraved into the back of the lock. This code is unique and can be used to identify the lock in BoxLock Control.

Looking up the lock in BoxLock Control will give key vital information such as:

Last Updated: The time and date of which the device last connected. The data showed in BoxLock Control is only as recent as this time. Keep data age in mind when troubleshooting using information from BoxLock Control.

Signal Strength: An integer between 1 and 100 which indicates how strong the device connectivity is. The greater the number, the stronger the signal.

Connection: This is in an indication of whether the device is connected via a Cellular (CELL) or Wi-Fi connection

Battery: A percentage of how much charge the battery has. It is recommended that a battery charge of greater than 50% is maintained for proper use. This is particularly important in inclement weather conditions such as extreme heat or cold.

A chart of the Battery history can be seen in the Battery Tab at the bottom of the Lock Details page in BoxLock Control.

Troubleshooting

Troubleshooting BoxLock devices efficiently requires an understanding of the most common issues that can affect their performance.

This section provides guidance on identifying and resolving issues related to low battery, poor connectivity, improper configuration, and water damage. Additionally, it offers steps to unlock the lock once the cause is determined.

⚠ **Do not attempt to reboot the lock unless you are sure that is the appropriate troubleshooting step. In the event that the lock is offline or has poor connectivity, rebooting the lock will clear any Lightning Codes that are stored locally on the device.**

1. **Low Battery**

Symptoms: Flashing red LED indicator or unresponsiveness.

Troubleshooting Steps:

1. Check the battery indicator via BoxLock Control.
2. If the battery is low, charge the device using a USB-C Charging Cable.
3. When charging the LED indicator will be either a solid Orange or Green depending on the version of firmware.
4. If the LED indicator is not solid Orange or Green while plugged in, the device may need to be rebooted or have water damage.
5. While plugged in and charging, attempt to unlock the device again.

Unlocking the Lock:
Once the device is plugged in, try unlocking using the normal procedure.

2. **Poor Connectivity**

Symptoms: Inability to remotely control or monitor the lock.

Troubleshooting Steps:

1. Wait 60 seconds after the last flash of the LED before interacting with the lock. This ensures that the lock is not actively processing a prior interaction.
2. If the lock transitions from flashing amber to flashing green, it is unlikely to be a connection issue.
3. Check the Signal Strength via BoxLock Control.
4. If the Signal Strength is below 25, the Signal Strength may be less than ideal and it could take an extended period of time for the lock to connect.
5. Check the Last Updated time for the lock in BoxLock Control to see if this is greater than the frequency that the devices are set to connect. This is typically every four hours and a longer time could represent a connectivity issue.
6. If connectivity is an issue, try moving the lock 5 to 10 feet away from the current location. If the lock is indoors, attempt to move it closer to a window.
7. Attempt to unlock the device again.
8. If issues persist, try opening the lock by using “Press to Unlock” in BoxLock Control instead of scanning a barcode. This can help to isolate improper configurations or lack of access.
9. If “Press to Unlock” does not successfully open the lock, a lightning code or master barcode should be able to open the lock.

3. Improper Configuration

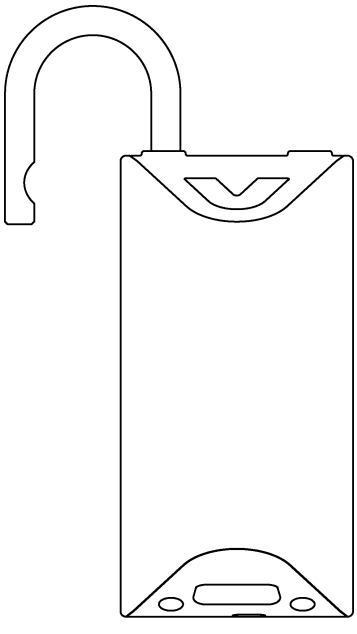
Symptoms: The lock appears to be working correctly, but is not opening when a barcode is scanned.

Troubleshooting Steps:

1. Identify the Lock in BoxLock Control
2. Review the Activity Log in BoxLock Control and determine if recent activity such as “Unsuccessful Scan” is being displayed.
3. If there are “Unsuccessful Scan” activities for the lock, it’s possible that the barcode is not assigned to the same “Location” or “Organization” as the “Lock”.
4. Please review the barcode settings to ensure that the access for that barcode aligns with your expectations and try again.
5. Try using “Press to Unlock” on the lock from within BoxLock Control and follow the onscreen prompts.
6. If that doesn’t work, try creating a new barcode that you’re certain has access to that lock and try again by scanning the barcode. Scanning the barcode ensures that the device does not time out on low latency, which is possible with “Press to Unlock.”
7. If you do not see activities appear in the “Activity Log”, it’s possible that the device has “Poor Connectivity.” See Section 2 above.
8. If issues persist, please contact BoxLock Support at viphelp@boxlock.io

4. Shackle Stuck Open

Symptoms: The shackle of the lock is stuck open and rotated 180˚ from the locked position



Troubleshooting Steps:

1. Re-open the lock using a barcode or “Press to Unlock”
2. Opening the lock should release the shackle
3. Leave the shackle open and rotated at 180˚ for 60 seconds prior to closing the lock. If the lock starts beeping and attempts to relock automatically prior to closing the lock, the shackle switch may be jammed or broken.
4. If issues persist, please contact BoxLock Support at viphelp@boxlock.io

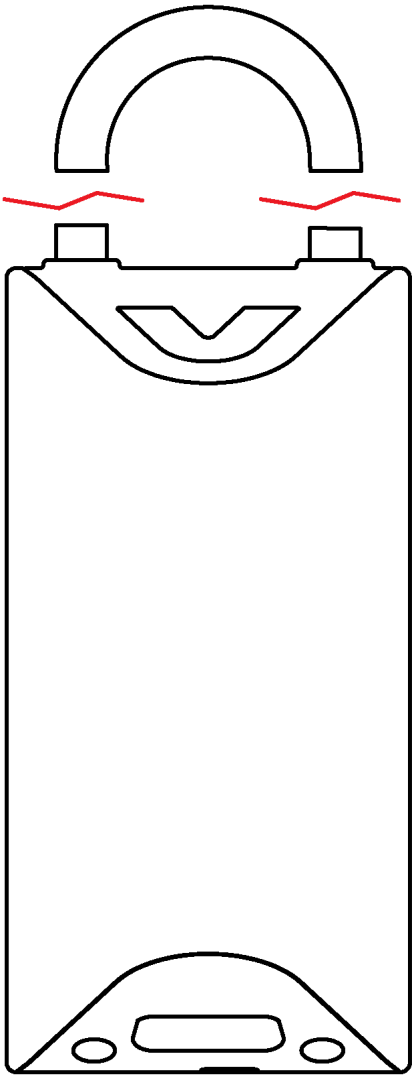
5. Non Responsive Lock

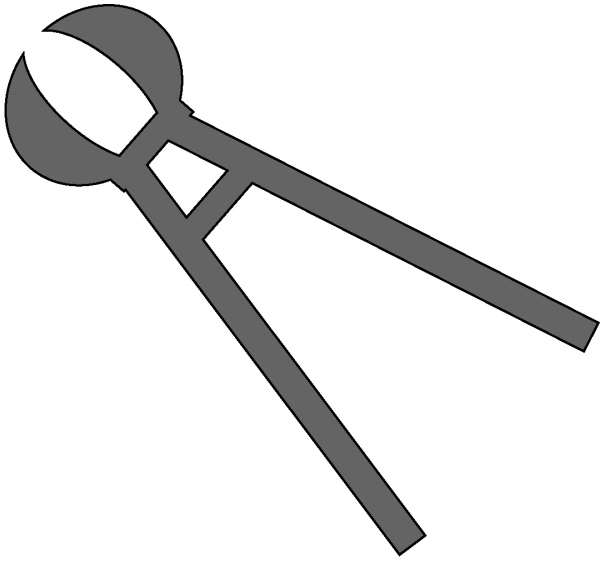
Symptoms: The lock is non-responsive with no beeping, the barcode scanner does not turn on and the LED on the bottom of the lock does not flash.

Troubleshooting Steps:

1. If there are any signs of beeps and or the LED is flashing, wait for 30 seconds and try again.
2. If that does not work, try holding the button on the top of the lock for 30 seconds and release. Note that this will delete any Lightning Codes from the lock and will require that the device connects to refresh Lightning Codes. If the device beeps and the LED flashes, try opening the lock again.
3. If that does not work, Try plugging in the lock. If the lock has lost charge, the lock will beep and the LED will be lit when it begins to charge.
4. Try opening the lock again and check for any activity in BoxLock Control.
5. If there is activity in BoxLock Control, try using “Press to Open” to open the lock.
6. In the event that the device does not power up and does not show recent activities in the Activity log, you may need to cut the lock by following the steps below:

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⚠ **Ensure all OSHA Compliance Requirements have been met prior to removing a lock either by means of overriding access or forceful removal.**

If bolt cutters are needed to cut the locks, both sides of the shackle will need to be cut. The shackle itself will not rotate when only one side is cut.

Security Measures

1. **Data Security**
    - **Secure Network:** Always connect BoxLock devices to secure and reliable Wi-Fi or cellular networks to prevent unauthorized access and ensure data integrity. BoxLock uses encrypted HTTP backed by RSA keys with 2048-bit modules and SHA-256.

- **Firmware Updates:** Regularly check to make sure the device firmware is the latest version to maintain security and functionality. Prior to updating firmware, please check with BoxLock Support to ensure

- **Software Updates:** Software updates are made regularly for feature enhancements and security updates. These updates occur in the cloud and are automatically applied. Feature enhancements are made and incorporated automatically, based on the specific feature, they may require that they are turned on by the administrator. Breaking changes will be actively communicated. The latest Release Notes are available at https://docs.bxlck.com