Farmblox

COP-R-LOCK

Pole Deployment for

Base Station, COP-R-LOCK Alarm and External Solar Battery Kit

Installation Guide

v1.0

Introduction

This guide provides step-by-step instructions for installing a Farmblox Base Station with the External Solar Battery Kit and COP-R-LOCK Alarm on a newly installed ground-mounted pole.

This guide is intended for installers and contractors performing field installations. Following these instructions will help ensure proper system operation, reliable solar charging, and long-term performance.

If you have questions, please contact Farmblox Technical Support before proceeding.

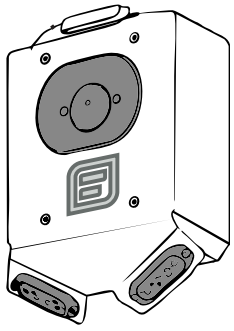
Overview

The Farmblox Base Station, External Solar Battery Kit, and COP-R-LOCK Alarm provide enhanced security of remote assets with automatic siren and strobe light activation to deter theft in progress. The COP-R-LOCK Alarm can be triggered by the COP-R-LOCK Motion-Distance Sensor, the COP-R-LOCK Trigger Sensor, or another compatible sensor.

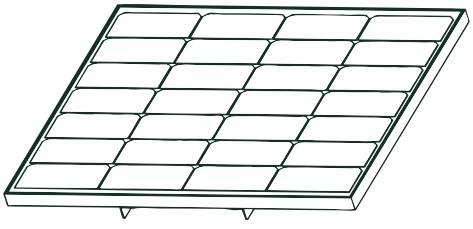
The External Solar Battery Kit lets the system run off grid, independent of existing power. This ensures that assets stay protected by the COP-R-LOCK Alarm even if power is shut off or the grid loses power.

The Farmblox Base Station controls the Alarm and provides the wireless signal that lets sensors activate the Alarm. The Base Station connects automatically to any major cellular provider to send all data to the user. If there is a cellular outage, or if the Base Station is installed in an area without cellular signal, it will relay through another Farmblox Base Station within a few miles.

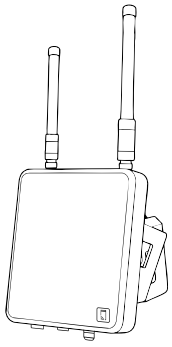
Required Farmblox Products



COP-R-LOCK Alarm x1



External Solar Battery Kit x1



Base Station x1

Safety Information

Before beginning installation:

- Wear appropriate PPE.
- Verify there are no overhead power lines near the installation location.
- Locate all underground utilities before digging.
- Use proper lifting techniques when handling poles.
- Keep all cables protected from sharp edges and pinch points.

Required Tools & Materials

Installer-Supplied Materials for Pole Mount Installation

- 20 ft galvanized steel or mild steel pole (2" outer diameter recommended)
- Concrete
- Stainless steel hose clamps (4 total, sized slightly larger than pole diameter)
- Metal spacer for the solar panel mounting bracket (if required for smaller diameter poles)
- Zip ties (to secure cables to pole)

Required Tools

- Earth auger (4 ft bit recommended)
- Post hole digger
- Shovel
- Level
- Ratchet and 17mm socket and 17mm wrench
- Phillips #2 screwdriver
- Hex driver or impact driver
- Smartphone with compass or analog compass
- Wire cutters

Installation of the Ground-Mounted Pole

Pole Requirements

The mounting pole must support the combined weight of the Base Station, External Solar Battery Kit, and COP-R-LOCK Alarm, and must withstand outdoor conditions such as high wind.

A 2 inch galvanized or mild steel pole is recommended to support the combined weight.

Equivalent steel poles may be used if they are structurally adequate.

Pole Height

The recommended pole installation should result in:

- 15 ft of pole length above grade
- 3 ft of pole length below grade

Farmblox recommends purchasing a 20 ft pole and trimming it to approximately 18 ft before installation.

Selecting the Installation Location

Before setting the pole, consult with the Farmblox team to verify the designated installation coordinates. Proper placement is essential for ensuring reliable wireless communication coverage for all planned devices.

Choose a location that:

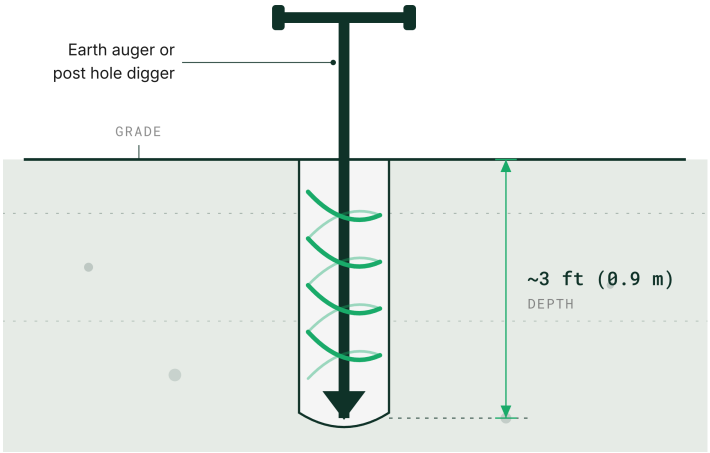
- Is close to the designated coordinates
- Will not interfere with equipment
- Allows future maintenance access
- Has unobstructed southern sky exposure
- Is free of overhead power lines
- Avoids underground utilities
- Has a good view of the site, for potentially adding a security camera in the future

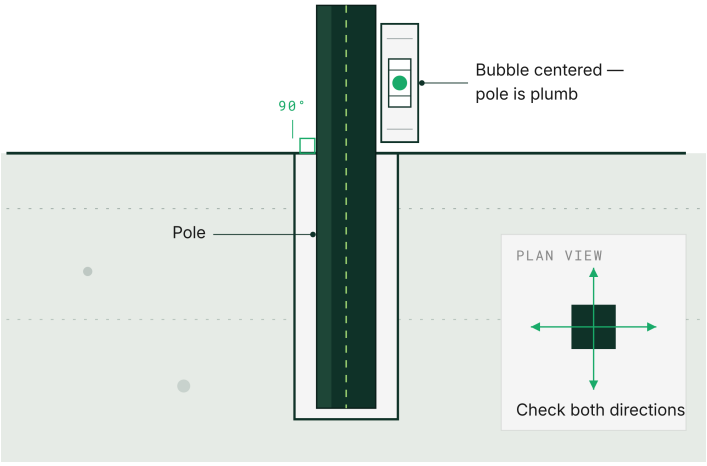
Avoid locations that:

- Are frequently traveled by equipment
- Are subject to flooding
- Have heavy tree cover
- May have future vegetation growth

Installing the Pole

1. Dig a hole approximately 3 feet deep using an earth auger or post hole digger. Keep the hole vertical.





2. Place the pole into the hole. Use a level to ensure the pole is perfectly plumb in both directions.

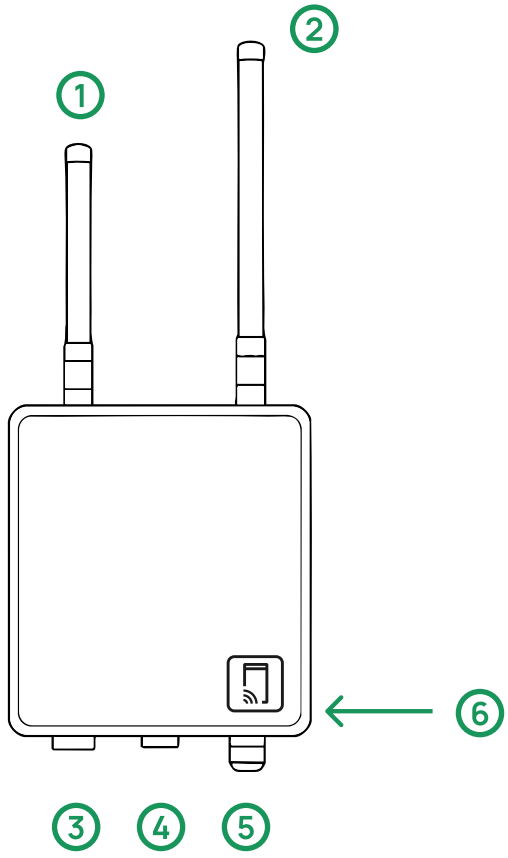
3. Pour concrete around the base of the pole. Allow the concrete to fully cure before mounting any equipment.

Base Station Installation

Overview

The base station is at the center of the Farmblox system. Its primary function is to wirelessly receive readings from a Universal Monitor and send them to your phone/computer dashboard.

The base station features an NFC tag, three ports, and five LED status lights.



1. Cellular Antenna
2. LoRa Antenna
3. Solar power port
4. Ethernet port
5. External device port
6. LED Status Lights

NFC Tag: The Base Station features an NFC tag so it can be easily added to the Farmblox app. Tap phone here when prompted from the app.

LED Light Status

Power: Indicates if the base station has power.

Device: Indicates if a connected device is present.

Wireless: Indicates if the wireless communicator is active.

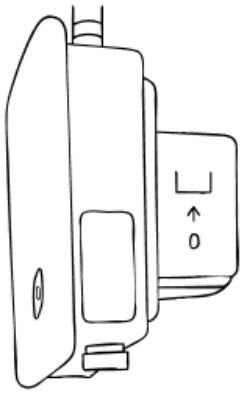
Data: Indicates if the Base Station has a data connection. Either ethernet or cellular.

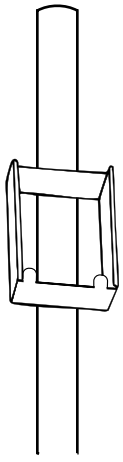
Solar: Green: The base station is receiving solar power.

Solar: Blinking Orange: Indicates that the Base station is in the boot sequence.

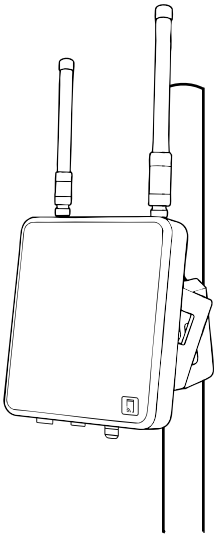
Installation Steps

1. Install the Cellular Antenna and LoRa Antenna on the Base Station as seen in the diagram on the previous page.
2. From the Farmblox App, click the “+” icon in the bottom menu bar, then “Scan” and tap your phone to the NFC Tag on the Base Station. Name the Base Station based on the name of the site at which it’s being installed, and “Save”. This will add the Base Station to the app.
3. Attach the mounting bracket to the rear of the Base Station using the supplied four M6 screws and lock washers.





4. Attach the mating bracket to the mounting pole using two stainless hose clamps. The required hose clamp size depends on the pole diameter.



5. Hang the Base Station onto the pole bracket. Install the two supplied M6 Phillips screws to secure both bracket halves together.

Installation Tips

- Mount the Base Station high enough so that the solar panel will not interfere.
- Leave adequate space below for cable routing.

External Solar Battery Kit Installation

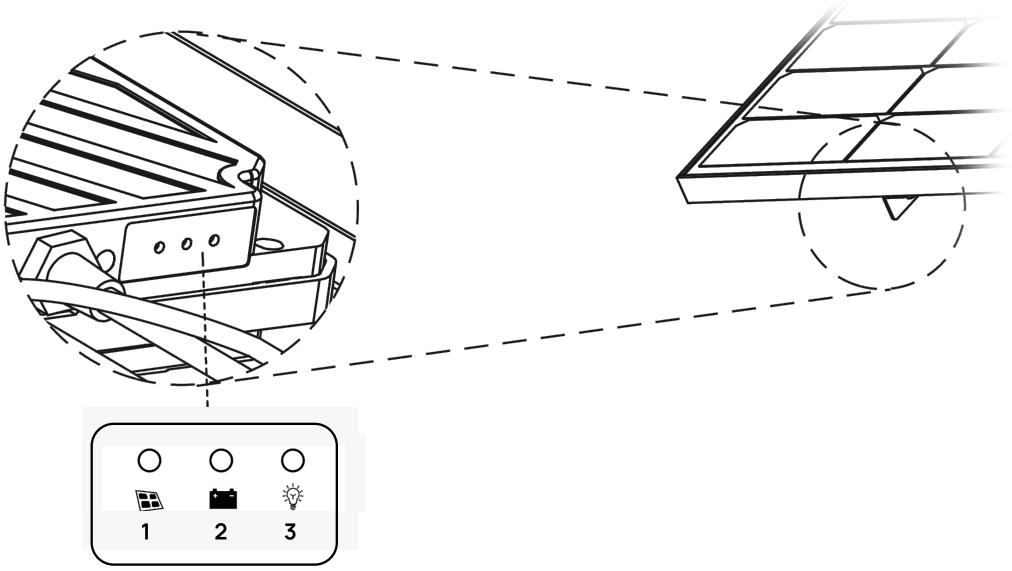
Overview

The external solar battery kit allows the Farmblox base station or other high powered devices to be installed in remote locations without power infrastructure. The solar battery kit consists of a solar panel and an integrated battery. When fully charged, the solar kit can operate the base station for up to 7 days without charging from the solar panel.

Before Installing

The solar panel must face south for proper charging performance. Remove tree limbs or brush that may shade the panel. Even partial shading can significantly reduce charging efficiency.

Battery LED Status

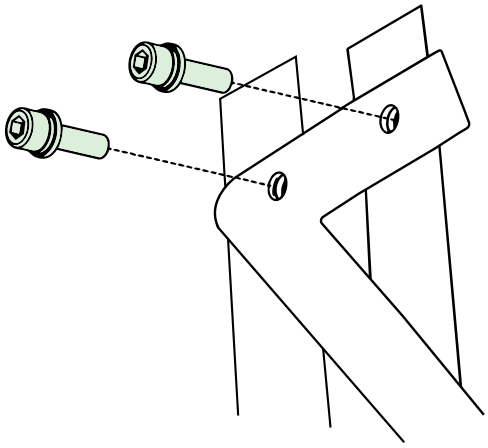


1 **Solar Panel Indicator** - Green
ON: Solar panel is charging.
OFF: Solar panel is not charging.

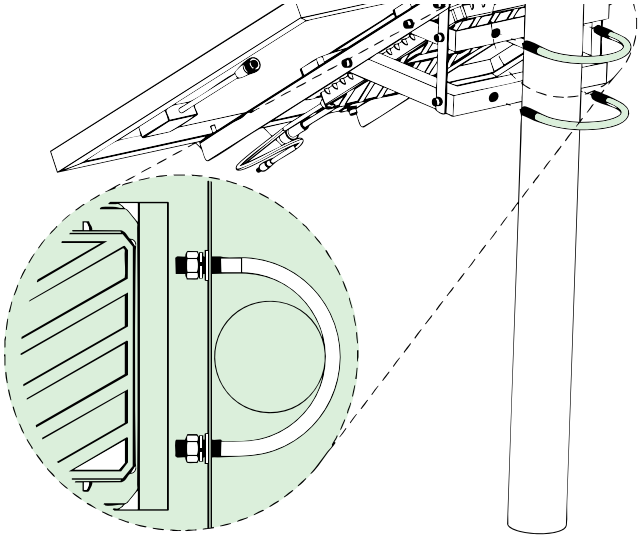
2 **Battery Indicator** - Green
ON: Battery level okay.
SLOW FLASH: Low battery, connected device may lose power.
QUICK FLASH: The battery is in protection mode, heating the battery to protect itself while charging during cold conditions.

3 **Load Indicator** - Red
ON: Connected device is powered.
OFF: Connected device isn't powered.

Mounting Instructions



1. Prepare the solar panel for mounting by attaching the two support bars to the side of the mounting hoops and solar panel with the hex screws provided in the solar kit.

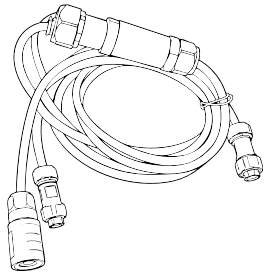


2. Mount the solar panel to the pole using the U-bolts and nuts supplied in the mounting kit. Depending on the diameter of the pole an additional piece of pipe may be required to be used as a spacer to allow the u-bolts to tighten down properly.

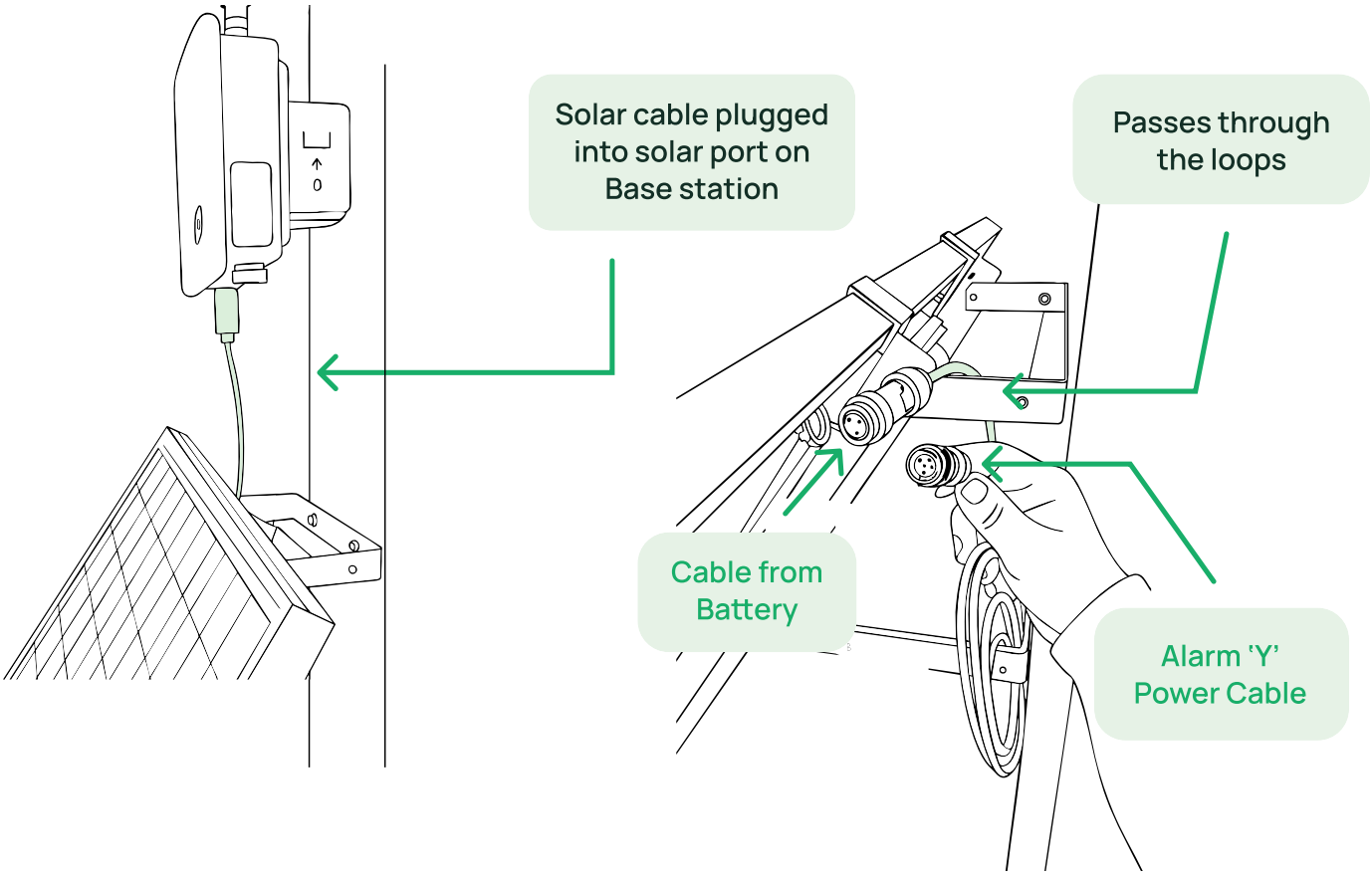
3. Plug the solar panel into the battery.

4. Locate the solar plug provided with the Base Station box. Install the solar plug into the bottom of the Base Station, sealing the Ethernet power port as this is not used for solar powered Base Stations.

5. Open the COP-R-LOCK Alarm box and locate the Alarm ‘Y’ Power Cable which has three connector ends.

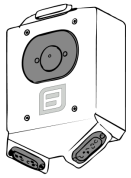


6. Plug the Base Station solar adapter cable into the battery on the back of the solar panel, then pass the cable through the solar panel mounting hoops, and connect it to the Base Station's solar port (reference the previous Base Station diagram for port location). The Base Station will now boot up and come online.



7. Secure the Battery and Base Station portions of ‘Y’ cable with zip ties. Do not secure the unconnected side of the ‘Y’ cable yet, as this will connect to the COP-R-LOCK Alarm.

COP-R-LOCK Alarm Installation



Overview

The COP-R-LOCK Alarm provides enhanced security of remote assets with automatic siren and strobe light activation to deter theft in progress. The COP-R-LOCK Alarm can be triggered by the COP-R-LOCK Motion-Distance Sensor, COP-R-LOCK Trigger Sensor, or other sensor.

Key features include:

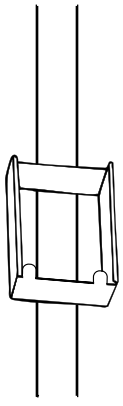
- **Rapid activation:** Activates within 10 seconds (typically 2 seconds) upon a paired sensor device detecting a potential theft event.
- **Versatile deployment:** Suitable for any field location, protecting a variety of assets, including water pumps, electrical substations, equipment, solar fields, and more.
- **Durable construction:** Weatherproof build for reliable operation in harsh outdoor conditions.
- **Seamless integration:** Connects to the Farmblox Base Station and External Solar Battery Kit for remote, off-grid wireless control and power.

Alarm Orientation

Aim the speaker towards the electrical panel, fence, solar array, or other asset that is being protected which thieves may target.

Installation Steps

1. From the Farmblox App, click the “+” icon in the bottom menu bar, then “Scan” and tap your phone to the NFC Tag on the Alarm. Name the Alarm based on the name of the site at which it’s being installed, and “Save”. This will add the Alarm to the app.
2. Attach the mounting bracket to the rear of the Alarm using the supplied four M6 screws and lock washers.



3. Attach the mating bracket to the mounting pole using two stainless hose clamps. The required hose clamp size depends on the pole diameter.

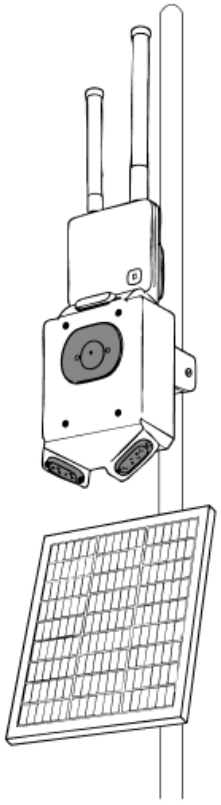
4. Hang the Alarm onto the pole bracket. Install the two supplied M6 Phillips screws to secure both bracket halves together.
5. Pass the Alarm's side of the Alarm 'Y' Cable through the solar panel mounting hoops, and connect it to the Alarm's "Solar Panel" port.
6. In the Alarm box, locate the Alarm Communication Cable which has two connector ends.
7. Plug one end into the Alarm's "Base Station" port, and the other into the Base Station's External Device Port.

Final Installation Check

Confirm that all wires are properly connected and the installation resembles as shown here.

Specifically, verify that the:

- Battery is connected
- Solar panel is connected
- Base Station powers on
- Base Station status LEDs illuminate
- Cellular connection is established (via the status LEDs)
- System appears online in the Farmblox app
- Alarm is able to toggle on through the Farmblox app

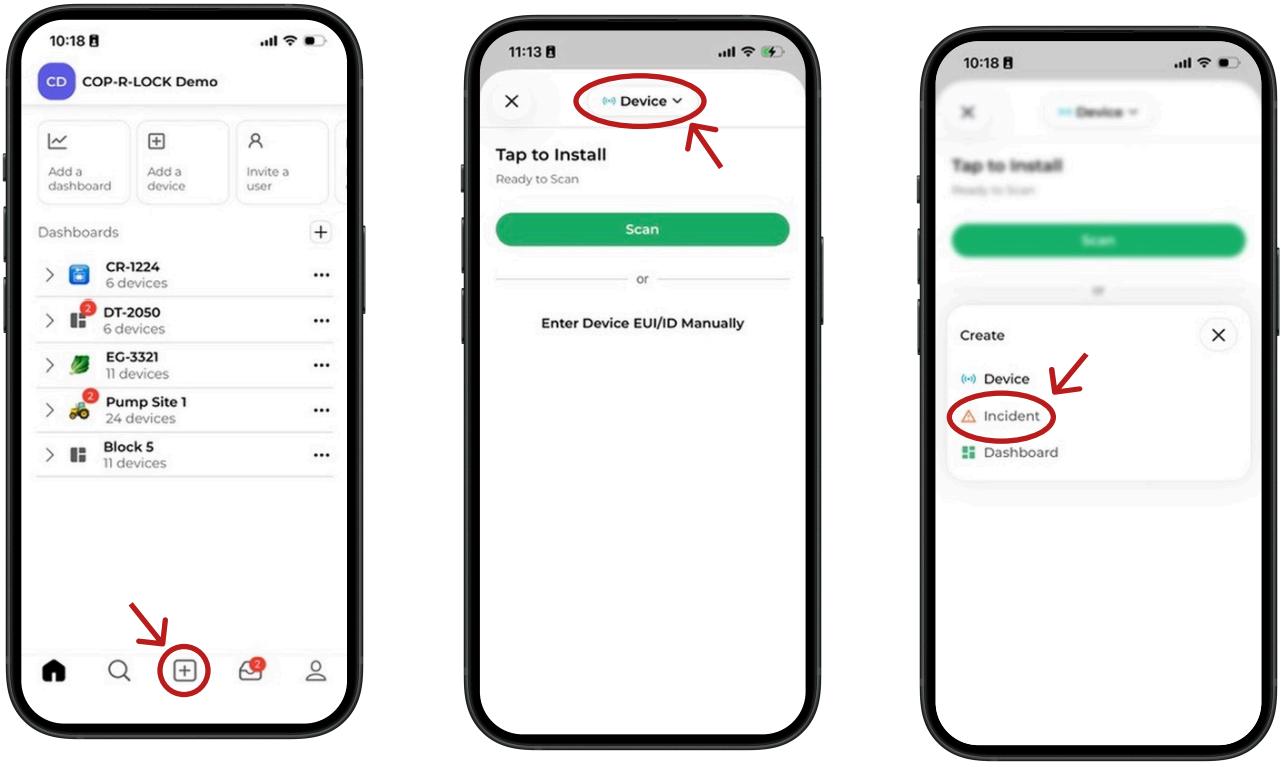


Troubleshooting

Problem	Specification	Solution
Base Station will not power on	Battery disconnected	Verify battery connections
Battery not charging/low battery	Solar panel shaded or not facing south	Remove obstructions or reorient panel
Base Station offline	Poor cellular signal	Verify antenna
Alarm not operating	Wiring issue	Swap alarm cables
Loose equipment	Hose clamps not tightened	Re-tighten hardware

Setting Up Incidents for Automatic Alarm Activation

1. From the Home page, select the “+” icon in the bottom menu.
2. Select Incident

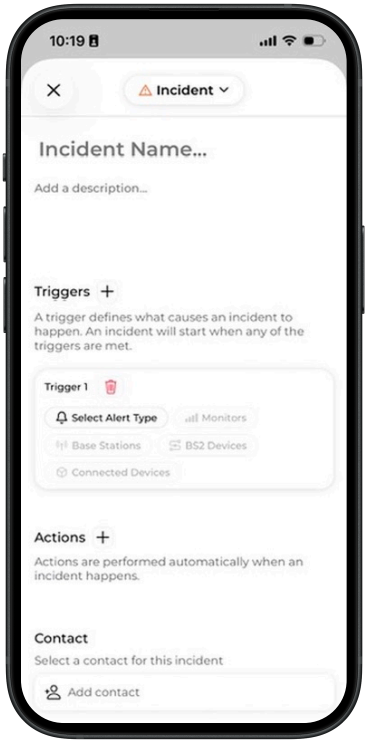


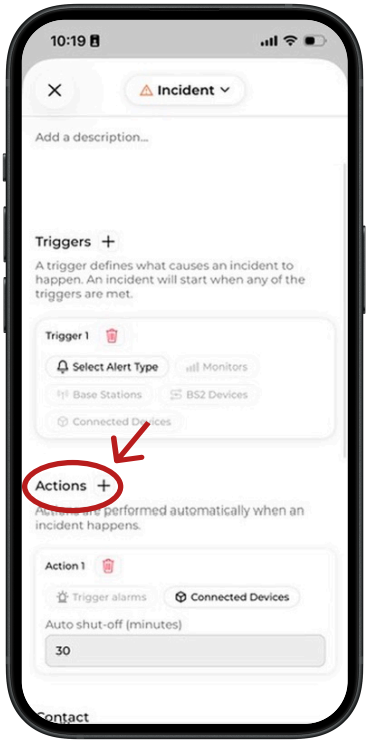
3. Configure the incident
    a. **Name:** Use the name of the specific pump location, solar array site, yard, substation or similar. For example “ Theft in Progress Site EG-3321”. You may add icons as well, such as sirens or alarms to make the notification standout.
        i. **Note: Each site should should have its own incident created**.
    b. **Description:** provide the GPS coordinates of the site. This way all who are notified about a theft in progress know where to drive.

Continued on the next page

a. **Triggers:** select the all conditions to activate the incident.
   i. If Trigger Sensors are installed, turn on: “Cut detected” and “Sensor unplugged”
   ii. If Motion-Distance Sensors are installed, turn on: “High Distance” and “Sensor unplugged”
b. **Devices:** Select the Universal Monitor(s) installed at that specific site. For example: devices installed at “Site EG-3321”. If any of these devices detect a theft, the incident will be activated.
c. **Actions:** Select the COP-R-LOCK Alarm(s) installed at this site. When an incident happens, these alarms will automatically turn on.
   i. **Auto shut-off:** Keep the default 30 minutes, or confirm with the client on adjusting
d. **Contact:** Select a phone contact. If an incident occurs, all automatic notifications will include their name and phone number. This helps first responders know who to call.

4. Select **Create Incident** to save and activate the incident.





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COP-R-LOCK

Get Help

support@farmblox.com