Flex IO - Pull-Apart Installation Guide

In addition to the standard contact functionality, the Flex IO can be integrated with third-party devices using the built-in loop input. This guide covers the basics of setting up and mounting your Flex IO with a compatible pull-apart sensor.

Important: The Flex IO is a monitoring device that is not intended for life safety use cases. For more information about use cases, see Flex IO - Use Cases.

Equipment

In the box:

- Flex IO
- Magnet
- 4x AA 1.5V lithium batteries
- 300 kΩ resistor (optional)

Recommended tools and supplies (not included):

- Compatible pull-apart sensor (See Which pull-apart sensors are recommended for the Flex IO?)
- 18-22 AWG wire
- Phillips head screwdriver
- Zip ties (if used for mounting; up to 3 recommended: 2 for Flex IO and 1 for magnet)
- #8 Phillips screws (if used for mounting; 4x)
- Paper clip (to press Flex IO diagnostic button; see Cellular signal strength)
- ADC-FLEX-100-WRC Wire Retention Clip (optional)

Step 1: Determine location

Before installing your device, it is important to consider the following:

- Mounting options
- Loop Input wiring
- Cellular signal strength

Mounting options

Consider the following mounting requirements. For diagrams and more information, see Step 4: Mount the Flex IO.

- Using screws: Holes are located in the battery compartment.
- Using zip ties: Use cutouts at the top and bottom of the device to make sure Flex IO is mounted flush to the installation surface.

Important: A mounting tamper is located on the back of the Flex IO. This tamper button must be fully pressed (until you hear a clicking sound) to avoid reporting a mounting tamper malfunction.

If not applicable for your installation, tampers can be disabled by updating device settings on the Partner Portal or MobileTech.

Cellular signal strength

Prior to mounting, check the cellular signal strength using the following steps.

1. Using a screwdriver, remove the battery door and temporarily insert batteries. Leave the battery cover off.
2. Hold the Flex IO in the desired installation location.
3. Using a paper clip, push the diagnostic button for 5 seconds, then release. The device LED should now be active.
    - Tip: Don't have a paper clip? You can use the optional resistor included in the box.

Once diagnostic mode is initiated, the LED will display the cell signal strength in a continuous loop for 2 minutes based on the patterns below. It may take up to 30 seconds for the signal strength to be acquired.

As you move the device, any changes in signal strength will be displayed by updates to the LED pattern. Alarm.com recommends a signal strength of 2 bars or greater.

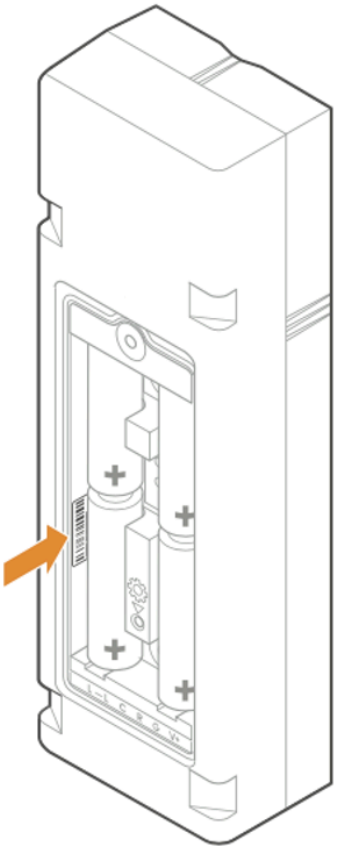
Signal strength	LED pattern	LED visual
Signal strength pending	Solid red	
0 bars	Single red LED blink every 8 seconds	
1 bar	1 red LED blink, followed by **1** yellow LED blink	
2 bars	1 red LED blink, followed by **2** yellow LED blinks	

Signal strength	LED pattern	LED visual
3 bars	1 red LED blink, followed by **3** yellow LED blinks	
4 bars	1 red LED blink, followed by **4** yellow LED blinks	
5 bars	1 red LED blink, followed by **5** yellow LED blinks	
6 bars	1 red LED blink, followed by **6** yellow LED blinks	

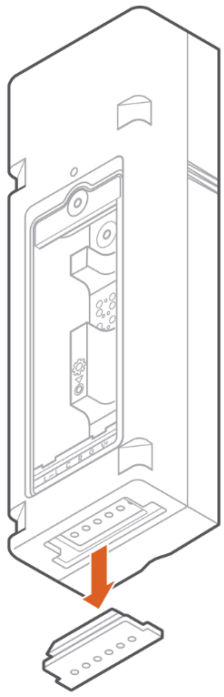
Step 2: Add the Flex IO to an Account

1. Log into the Partner Portal or MobileTech app.
2. Find the customer account.
3. In *Cellular Sensors*, verify at least one Flex IO has been added to their service package.
4. Click **Equipment**.
5. Click **Cellular Sensors**.
6. Click **Add a Cellular Sensor**.
7. Enter the Device IMEI number and follow the on-screen instructions to set up the device.
8. When prompted with *How will this Flex be used?*, select **Pull-Apart Sensor**.

Note: Want to add Flex IO to an account without a Security System? Use the Partner Portal or MobileTech to Create New Customer. For the *Account Type*, select **Standalone (Video, Access Control, and/or Cellular Sensor)**.

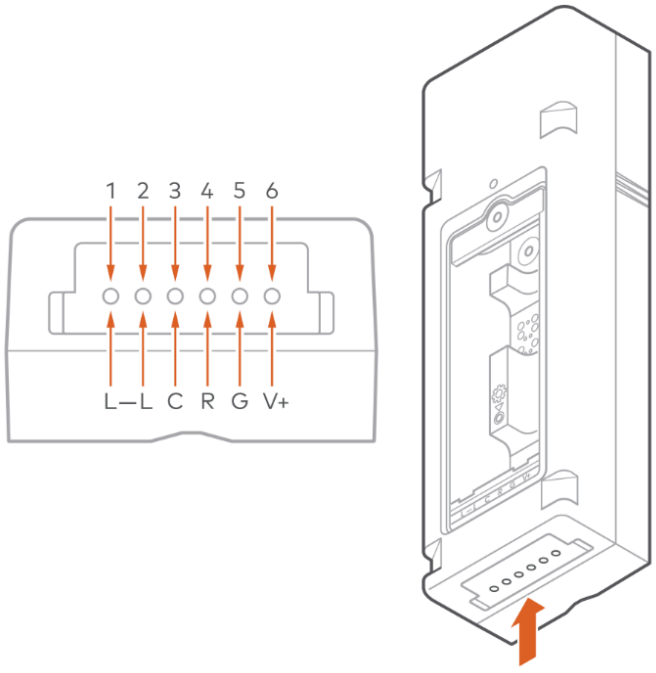


Step 3: Pull Apart Sensor Install



Access Screw Terminals

Remove the weatherproof gasket at the bottom of the Flex IO to access the screw terminals.

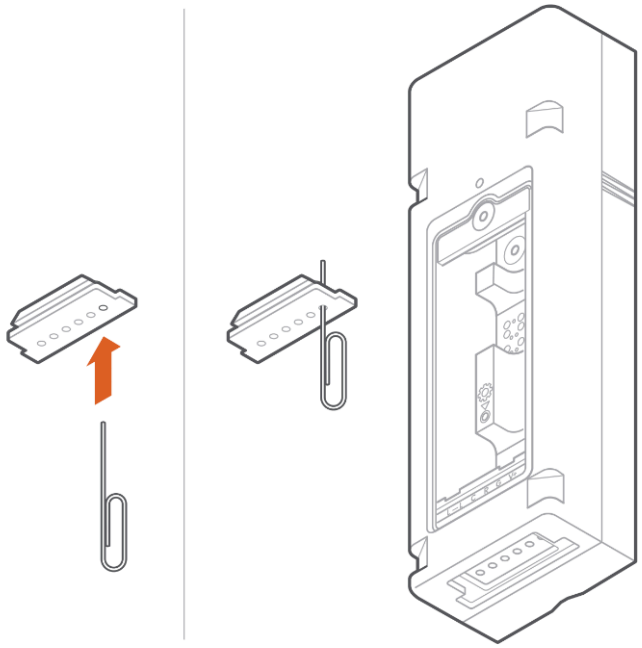


Identify Necessary Screw Terminals

- L-L: Both pins of the input loop
- C: Common pin for relay control
- R: Relay (NO or NC) control pin
- G: Ground
- V+: DC Power

Puncture Weatherproof Gasket

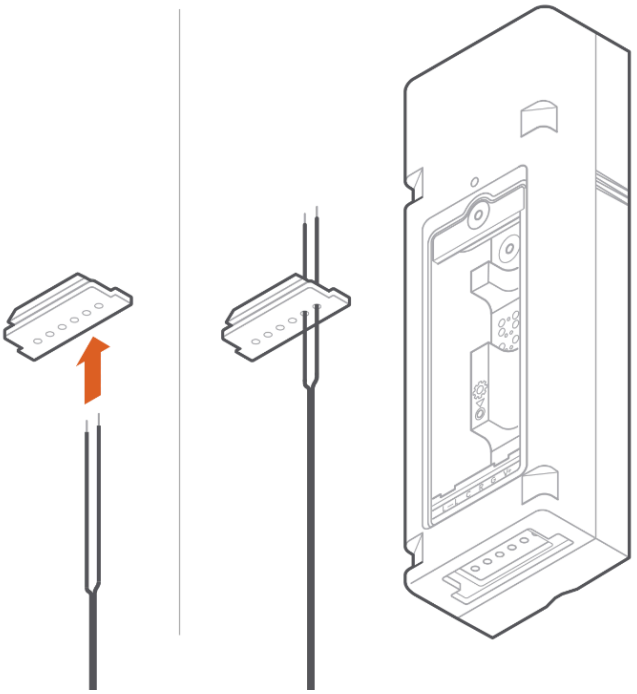
Puncture the corresponding holes in the terminal waterproofing gasket for the input loop. You can use a screwdriver, a paper clip, or anything else handy.



Thread Wires through Weatherproof Gasket

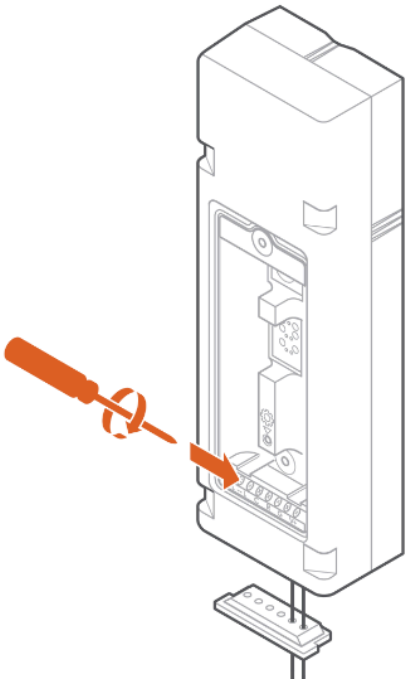
Thread wires through the newly created holes (from the outside-facing side of the gasket inward) before securing them to the terminal block.

This allows you to maintain the Flex IO's weatherproof seal.



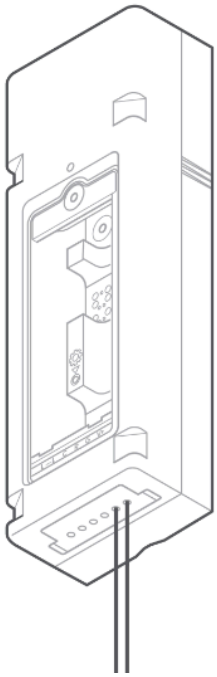
Secure Wires to Screw Terminal

Remove the battery door and use a Phillips head screwdriver to secure the wires to the terminal block.



Replace Weatherproof Gasket

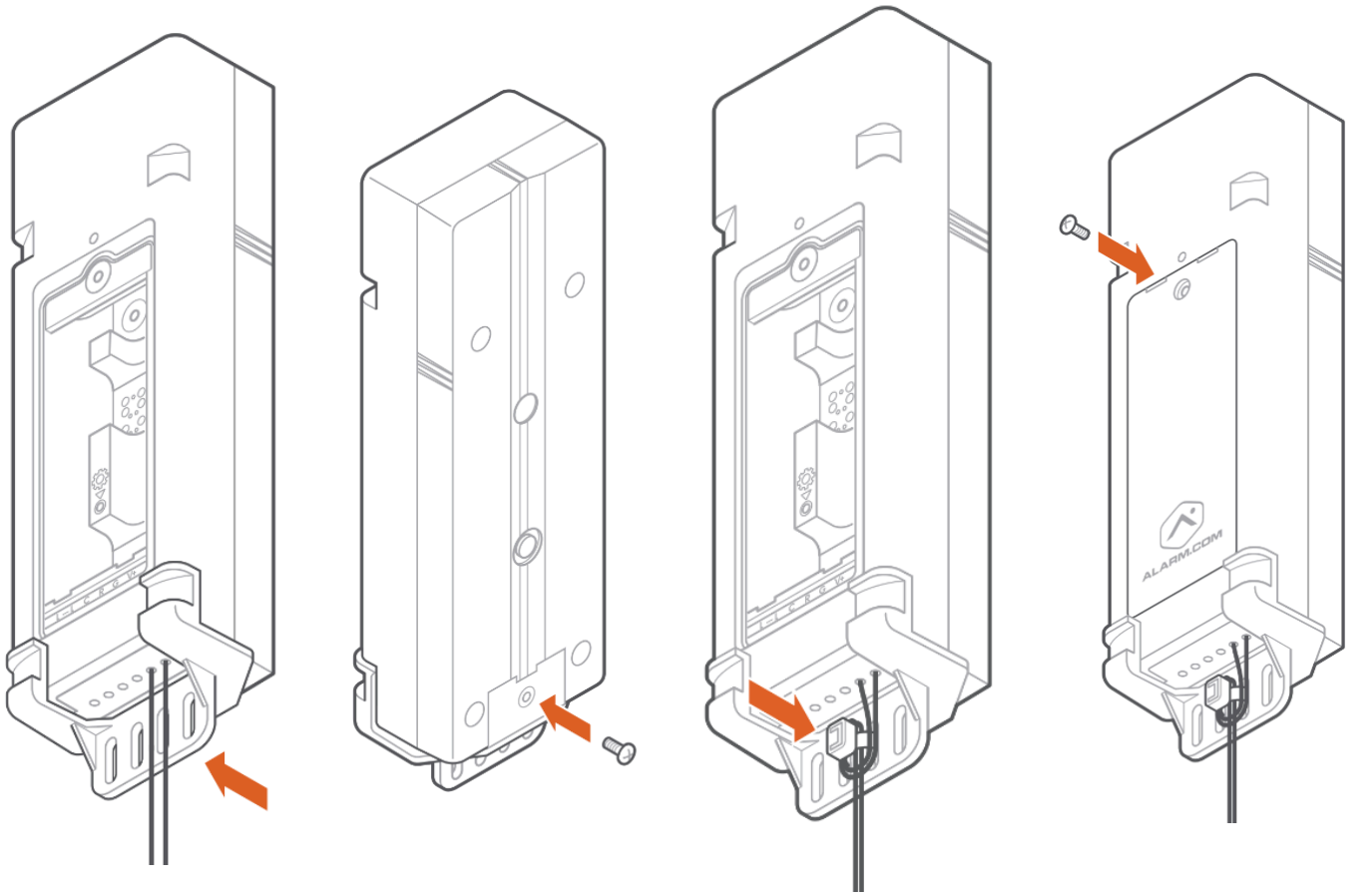
Replace the weatherproof gasket once you have successfully completed the wiring.



Optional: Attach Optional Wire Retention Add-On

Ensure that the wired device performs as expected and that the waterproof gasket is inserted correctly. Attach the wire retention add-on by first clipping the front two sides and then pushing the clip in place. Secure on the back side of the

Flex IO unit with the provided screw. Create a service loop with the installed wires and secure with a zip tie.

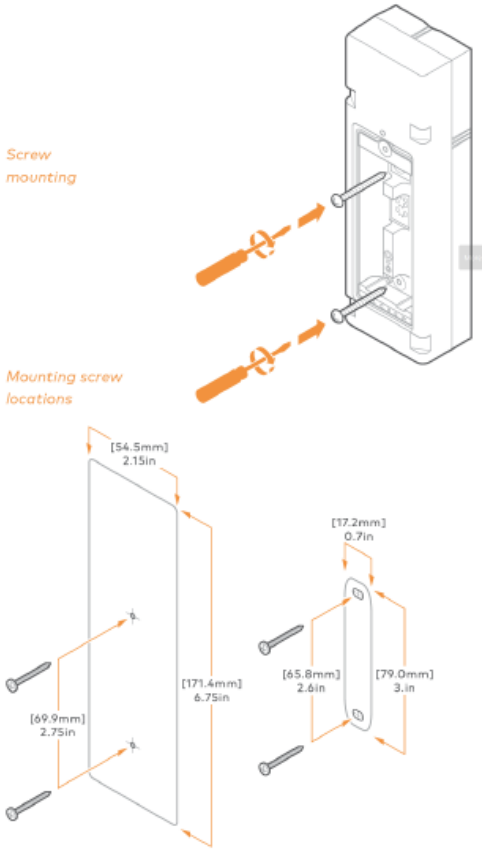


Step 4: Mount the Flex IO

The Flex IO can be mounted using either screws or zip ties.

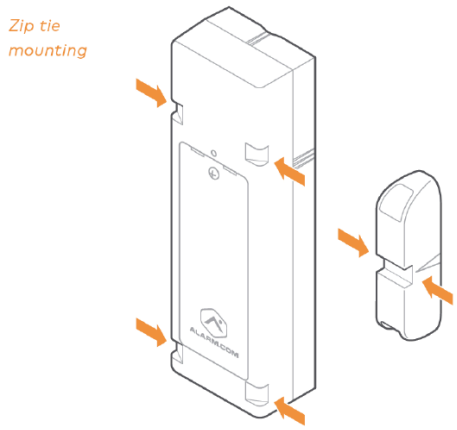
Using screws

- Screw mounting holes are located in the battery compartment. To avoid damaging the batteries, it is recommended to remove them before installing screws.
- Use two #8 Phillips screws to puncture the gasket and securely mount the Flex IO.
- Take care not to over-torque the screws. Power tools should be avoided. If pilot holes are necessary, a drill bit size of 5/64'' is recommended.



Using zip ties

- Zip ties should have a maximum width of 0.34 inches. UV resistant zip ties are recommended.
- Use the zip tie grooves at the top and bottom of the Flex IO to ensure a secure installation. The magnet also has a zip tie groove across the center.

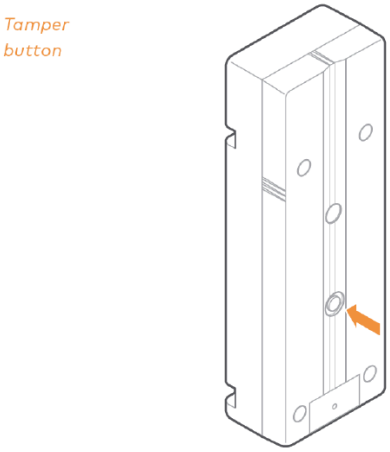


Mounting tamper

A mounting tamper is located on the back of the Flex IO. This tamper button must be fully pressed (until you hear a clicking sound) to avoid reporting a mounting tamper malfunction, as indicated by an alternating single Red and Yellow LED pattern.

Important: An active mounting tamper will drain the battery.

If not applicable for your installation, tampers can be disabled by updating device settings on the Partner Portal or MobileTech. Disabled tampers will not drain the battery.



Mount Loop Input

Follow instructions on the Loop package for the Loop Input mounting process.

Step 5: Insert the Batteries

Lithium batteries are required for this device. Under normal conditions, battery life is expected to be 2 years.

Any 1.5 V lithium battery should work. Alkaline batteries or any battery greater than 1.5 V (for example, the Saft 3.6 V) should not be used.

Install the included batteries, close the battery compartment door, and tighten the screw securely.

Important: Make sure the battery door screw is securely tightened to clear the battery door tamper. This will also ensure a waterproof seal.

If this screw is not fully tightened, the LED will show a single red blink every 2 seconds. Be careful to not over-torque the screw. Power tools should be avoided.

Step 6: Confirm Communication

Confirm Device Communication

Activate the pull-apart sensor. The LED should blink yellow twice when the device is tripped. This will prompt the Flex IO to communicate with Alarm.com. Make sure this sensor activity is displayed in the Partner Portal or MobileTech Event History.

Check LED

The device LED may cycle through a number of patterns as the device boots up and connects to a cell tower. If the LED continues to flash after 1 minute, check to make sure that the device does not have a tamper condition (review Step 3 and Step 4).

For battery-powered installations, when the device is successfully installed the LED should be off and activate only when the device is tripped, blinking yellow twice.

For powered installations, the yellow LED should be solid, blinking twice when the device is tripped.

If the device is not communicating with Alarm.com, see Advanced Troubleshooting Using MobileTech.

For more information about LED patterns, see Flex IO - LED Patterns and Troubleshooting.

Post-Installation Checklist

- The Flex IO is installed flush to the mounting surface. If the mounting tamper is enabled, the tamper button on the back of the device should be pressed in.
- LED is not blinking.
  - For devices with only battery power, the LED should be off.
  - For devices with wired power, the LED should be solid yellow and not flashing.
- The only LED activity should occur when the device is activated, which should result in 2 yellow blinks.
- Loop input wires are securely connected.
- Device activations are being reported in the account's Event History.

Alarm.com plans to support additional loop input and relay output third-party devices over time, so watch for updates in our weekly Release Notes on the Partner Portal or see Cellular Sensors. Have an input/output device you'd like us to support? Submit any ideas to your Alarm.com Sales Representative!