



Flex IO

Installation Guide

ADC-FLEX-100

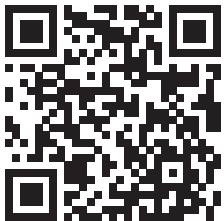
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Overview

The Flex IO enables new levels of flexibility for monitoring valuable property and assets anywhere that LTE connectivity is available.

Whether used with a backyard gate or a remote storage unit, the Flex IO empowers users to keep an eye on what matters most. It can be used with the included magnet to monitor doors, gates, and other entryways. It also comes equipped with input and output options for integrating compatible devices that lack long-range connectivity.



This guide covers the basics of setting up and mounting your Flex IO.

For detailed instructions, including how to leverage the built-in loop input and relay output option, visit our Knowledge Base: answers.alarm.com/?cid=adcpartnerflexio

Equipment

In the box

- Flex IO
- Magnet
- AA 1.5 V lithium batteries (x4)
- Installation guide
- 300 k Ω resistor (optional)

Recommended tools and supplies

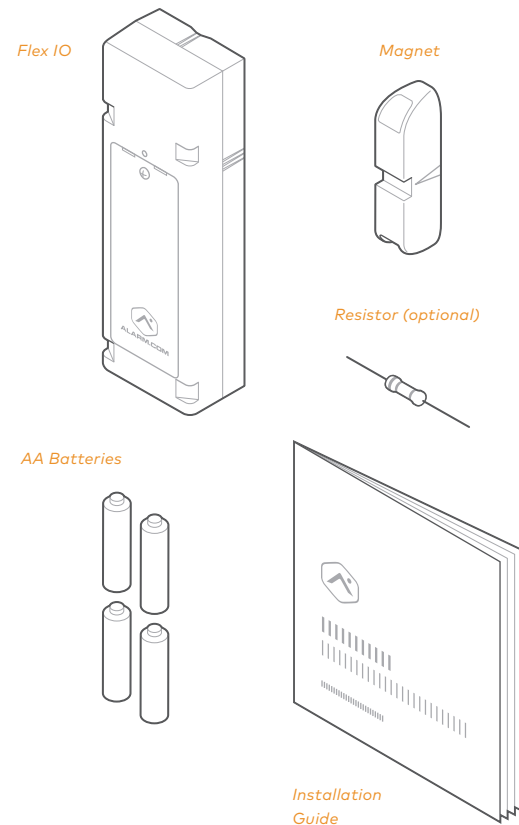
(not included)

- Phillips head screwdriver
- Zip ties (up to 3 recommended: 2 for Flex IO and 1 for magnet)
- #8 Phillips screws (x4)
- Paper clip (to press Flex IO diagnostic button; see *Cellular Signal Strength*)

Loop input and relay output tools and supplies

(if required; not included)

- 18-22 AWG wire
- Power supply (ADC-FLEX-100-PS)
- Wire retention clip (ADC-FLEX-100-WRC)



Step 1: Determine location

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

- Contact (reed switch) position
- Mounting options
- Input and output wiring
- DC power requirements
- Cellular signal strength

Contact (reed switch) position

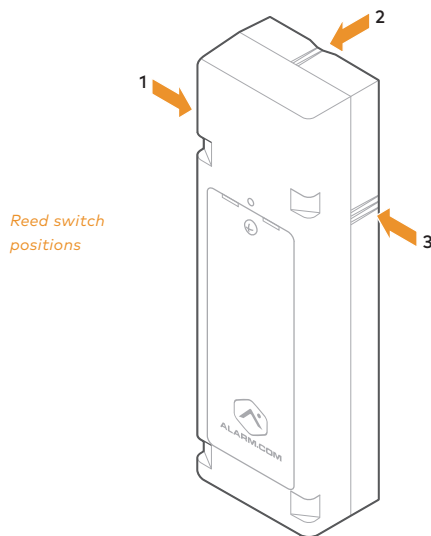
Like a standard door/window contact, the Flex IO can be installed with the accompanying magnet to detect activity at potential entryways.

To determine your installation orientation, consider the following:

- Three separate reed switch positions are available. Only one reed switch position can be active at a time. You will select the reed switch position in Step 2.
- Use the tick marks on the sides of the device for guidance:

- I - Position 1
- II - Position 2
- III - Position 3

- The magnet should be positioned no more than 1.25 inches from the device.



Mounting options

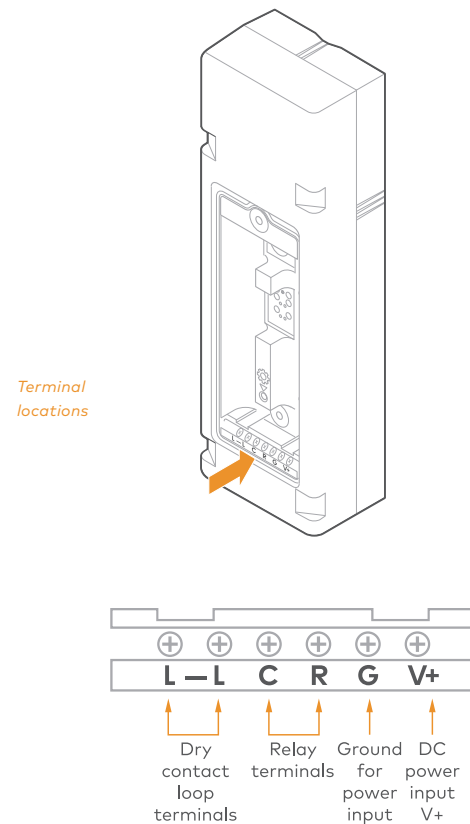
Consider the following mounting requirements. Review Step 3: Mount the Flex IO for diagrams and more information.

- **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 install surface.
- ⚠ **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.

Input and output wiring

If Loop or Relay will also be used, it is important to consider how the wiring will be configured before mounting the Flex IO. Review **Loop Input or Relay Output Installation** on the Alarm.com Knowledge Base to verify your wiring plan before proceeding with the installation.



DC power requirements

In addition to battery power, the Flex IO can be powered with a DC converter. DC power is **required** for relay installations due to increased power demands.

DC power is optional for reed switch or input installations.

Anything from **6 to 15 VDC** is acceptable. A minimum of 1 A is required. When using DC power, we recommend installing batteries for backup power to prevent damage in case of a sudden power loss.

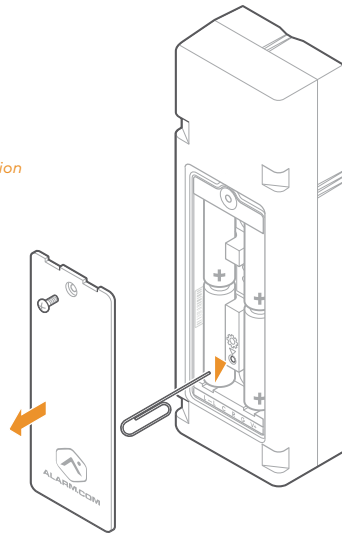
Cellular signal strength

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. The device LED should now be active.
- 2 Hold the Flex IO in the desired installation location.
- 3 Using a paper clip, push the diagnostic button, then release. The device LED should now be solid red. 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 on the next page. It may take up to 30 seconds for the signal strength to be acquired.

Diagnostic button location



Signal strength

LED pattern

Pending	
0 bars	 every 8 seconds
1 bar	
2 bars	
3 bars	
4 bars	
5 bars	
6 bars	

As you move the device, any changes in signal strength will be displayed by updates to the LED pattern.

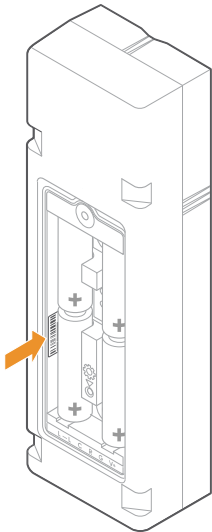
Alarm.com recommends a signal strength of 2 bars or greater.

Step 2: Add the Flex IO to an account

After you have completed Step 1 and identified your installation location (including power and wiring considerations), proceed with adding the device to an account.

- 1 Navigate to the **Customer Account** on the Partner Portal or MobileTech.
- 2 Ensure you have added at least one Flex IO to your **Service Package** (listed under Cellular Sensors).
- 3 Navigate to the **Equipment** page and select the **Cellular Sensors** tab.
- 4 Select **Add a Cellular Sensor**.
- 5 Using a screwdriver, open the battery compartment to find the **Serial Number (Device IMEI)** of the device.
- 6 Enter the **Device IMEI** number and follow the on-screen instructions to set up your device.

IMEI number
location



- ⚠ **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).**

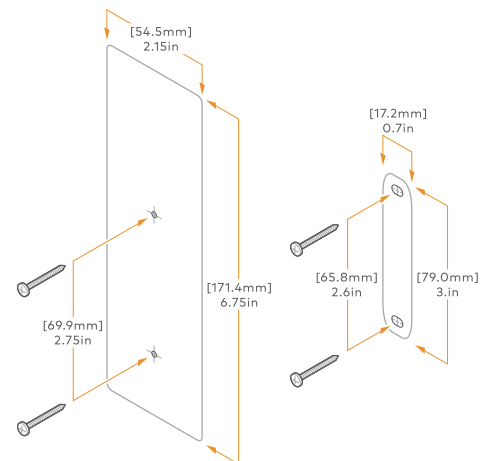
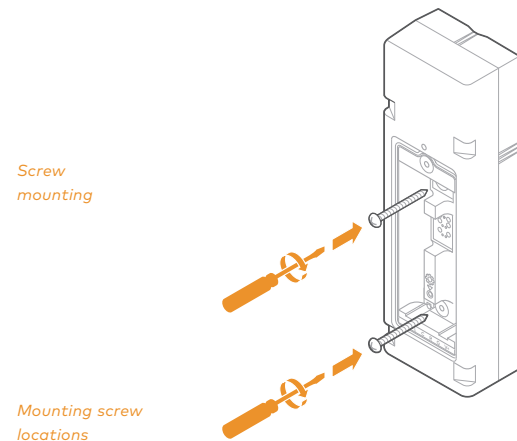
Step 3: Mount the Flex IO

- ⚠ **If you are wiring any devices into the screw terminals, it is recommended to do so before mounting the Flex IO. See the Alarm.com Knowledge Base for more information.**

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

Using screws

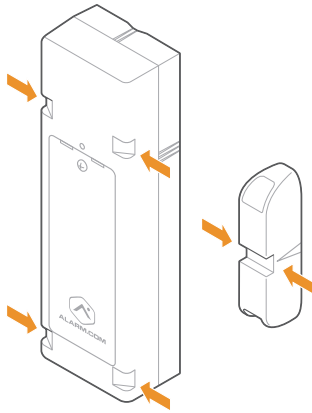
- Screw mounting holes are located in the battery compartment. To avoid damaging the batteries, it is recommended to remove them before installing screws.
- Use two #8 Phillips screws to puncture the gasket and securely mount the Flex IO.
- Take care not to over-torque the screws. Power tools should 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.

Zip tie mounting



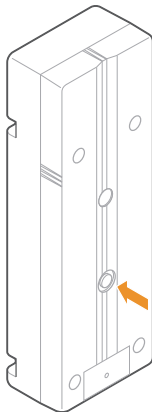
Mounting tamper

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 & Yellow LED pattern.

- ⚠ **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.

Tamper button



Step 4: Insert the batteries

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

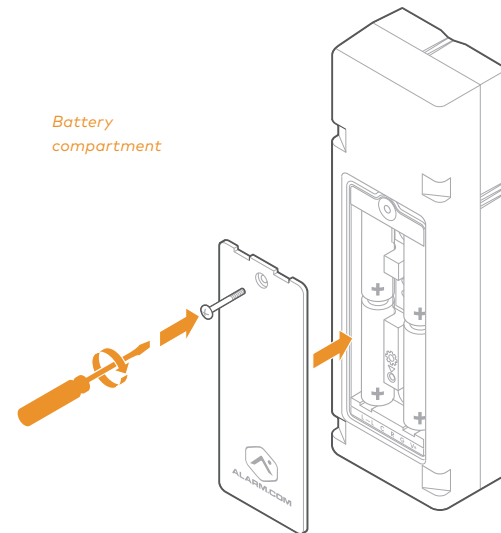
Any 1.5 V lithium battery should work. Alkaline batteries or any battery greater than 1.5 V (for example, the Saft 3.6 V) should not be used.

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

- ⚠ **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.

Battery compartment



Step 5: Confirm communication

Confirm device communication

Activate the reed switch contact as well as any sensors wired into the device. 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 your device is not communicating with Alarm.com, see Advanced Troubleshooting Using MobileTech on the Alarm.com Knowledge Base.

For more information on LED patterns, see LED Patterns & Troubleshooting on the Alarm.com Knowledge Base.

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 blinking.*
- ✓ The only LED activity should occur when the device is activated (either by reed switch or wired-in device), which should result in 2 yellow blinks.
- ✓ Any Loop Input or Relay Output wires are securely connected.
- ✓ Device activations are being reported in the account's Event History.

Questions?

If you are experiencing difficulties with your Flex IO installation, please contact **Alarm.com Technical Support at 866-834-0470** and we'll be happy to assist you further.

Specifications

Ingress protection

- IP56

Temperature

- Battery life will be optimal between temperatures of 32°F to 140°F (0°C to 60°C). The device can operate from -40°F to 140°F (-40°C to 60°C)

Reed switches


- 3 unique reed switch locations to choose from that can be activated with included magnet

Loop input

- Flex IO can be powered by battery or external power
- Dry Contact, Normally Open (NO), or Normally Closed (NC)
- Optional EOL resistor can be 300 kΩ or higher

Relay output

- If used, Flex IO must be externally powered (not compatible with battery power)
- Up to 24 V (AC or DC), 40 mA max current
- Can be used only for control lines/dry contact

 **Can never be connected directly to control electrical loads, which will damage the device**

Dimensions

- Main unit: 6.8 x 2.2 x 1.3" (17.3 x 5.6 x 3.3 cm)
- Magnet: 3.1 x 0.68 x 0.87" (7.9 x 1.7 x 2.2 cm)

Power

- Works with DC-wired power or battery power (battery backup recommended for wired installations)
- 6 to 15 VDC supply, minimum 1 A

Battery power

- Four 1.5 V AA lithium batteries (iron disulfide)
- 2+ years of battery life (depending on battery chemistry and operating temperature)

Regulatory information

FCC

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.


ISED

This device contains licence-exempt transmitters(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

1. This device may not cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.

Cet appareil contient des émetteurs/récepteurs exemptés de licence conformes à la norme Innovation, Sciences, et Développement économique Canada. L'exploitation est autorisée aux deux conditions suivantes:

1. L'appareil ne doit pas produire de brouillage.
2. L'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

 **The Flex IO is a monitoring device that is not intended for life safety use cases.**



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