# Flex IO - Loop Input or Relay Output Installation

Overview

In addition to the standard contact functionality, the Flex IO can be integrated with third-party devices using the available loop input or relay output.

At this time, input options include contact loops and pull apart (Magnapull) sensors. The relay output is currently not supported but will be available in a future release.

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.

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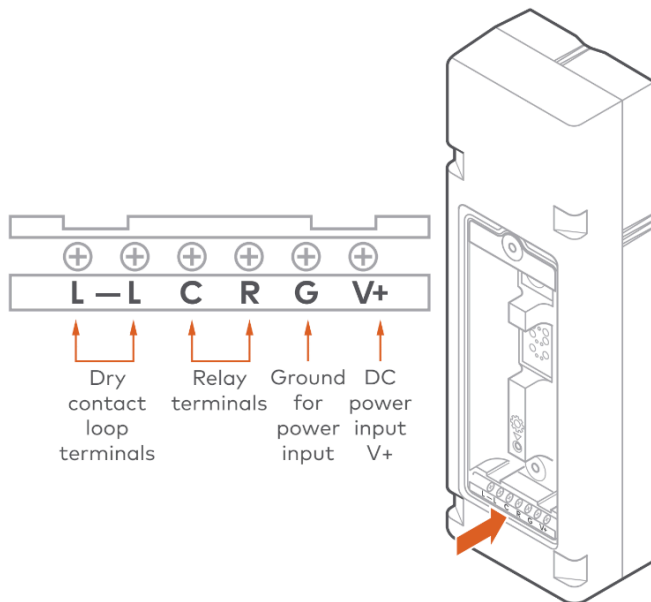
- L-L: Both pins of the input loop
- C: Common pin for relay control
- R: Relay (NO or NC) control pin
- G: Ground
- V+: DC Power

External power is supported with a DC converter. Anything from 6 to 15 VDC will work. A minimum of 1 A is required. When using DC power, it is recommended to install batteries for backup power to prevent damage in the case of a sudden power loss.

The relay control can work with up to 24 V (AC or DC). This is a dry contact only relay. It is not designed to handle

significant current loads.

If installing the Flex IO for relay control, you must also use either the loop input or reed switch to close the feedback loop. For example, if installing on a powered driveway gate, in addition to connecting to the gate controller, you need to use either the reed switch of the Flex IO or a contact sensor wired into the loop input to detect when the gate is open or closed.

When devices are wired into the Flex IO screw terminals, end of line (EOL) detection can also be enabled via device settings to report cut wires. The EOL resistor can be 300 kΩ or higher. Normally Open configuration is preferred for low power usage.

If the wire to an external device is severed, the LED will not display the condition, but the event will be reported to Alarm.com.

For best performance, 18-22 AWG wire should be used.

Note: The Flex IO cannot supply power to loop input or relay devices. These devices must have their own independent power source (if required).

Step 1: Confirm Compatibility

Loop Input:

- Flex IO can rely on battery power.   External power is optional.
- Dry Contact, Normally Open (NO), or Normally Closed (NC).
- Optional EOL resistor can be 300 kΩ or higher.

Relay Output:

- Flex IO must be externally powered (not compatible with battery power).
- Up to 24 V (AC or DC), 40 mA max current.
- Can only be used for control lines/dry contact.
- Can never be connected to control electrical loads. This will damage the device.
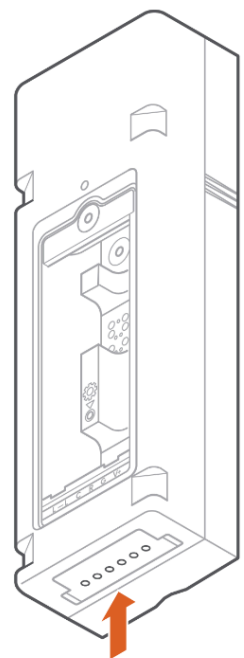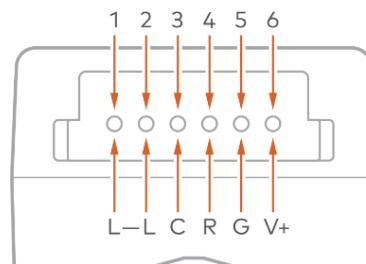
Step 2: Access Screw Terminals

Remove the weatherproof gasket at the bottom of the Flex IO to access the screw terminals.
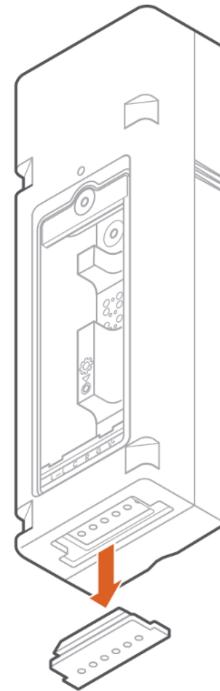
Step 3: Identify Necessary Screw Terminals

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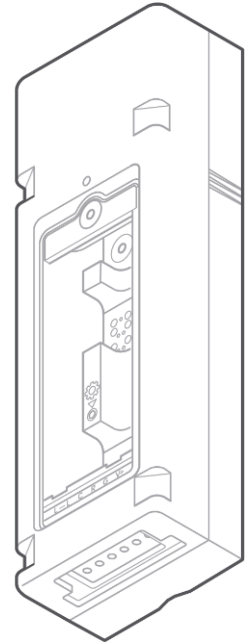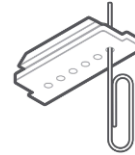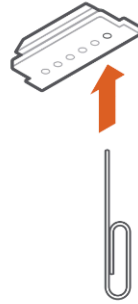- G: Ground
- V+: DC Power

See [Wiring Overview](#) for terminal descriptions.
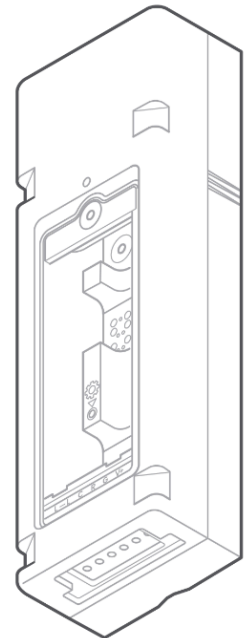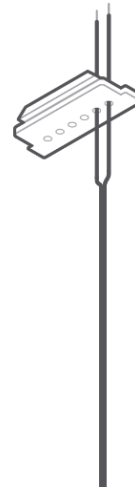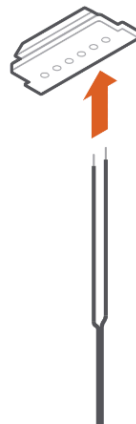
Step 4: Puncture Weatherproof Gasket

Once you have identified the terminals you need to access, puncture the corresponding holes in the terminal waterproofing gasket. You can use a screwdriver, a paper clip, or anything else handy.

## Step 5: 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.

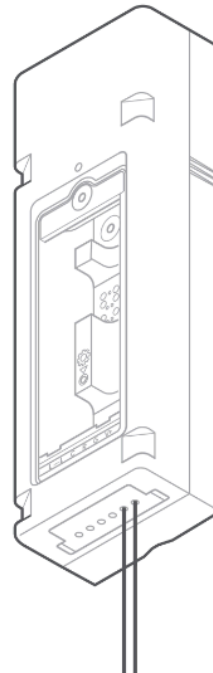This allows you to maintain the Flex IO's weatherproof seal.

Step 6: Secure Wires to Screw Terminal

Remove the battery door and use a Phillips head screwdriver to secure the wires to the terminal block.
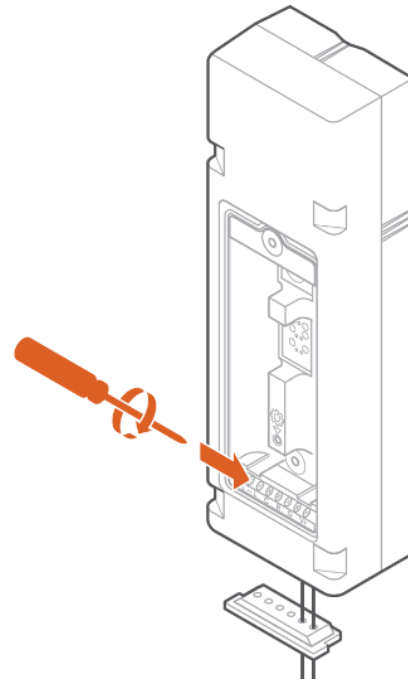
Step 7: Replace Weatherproof Gasket

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

Step 8: Confirm Device Communication

Trip any wired-in devices. The LEDs should blink yellow twice when the device has been detected.

This activity will prompt the Flex IO to communicate with Alarm.com. Verify that this sensor activity is displayed in the

Partner Portal or MobileTech Event History.

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.
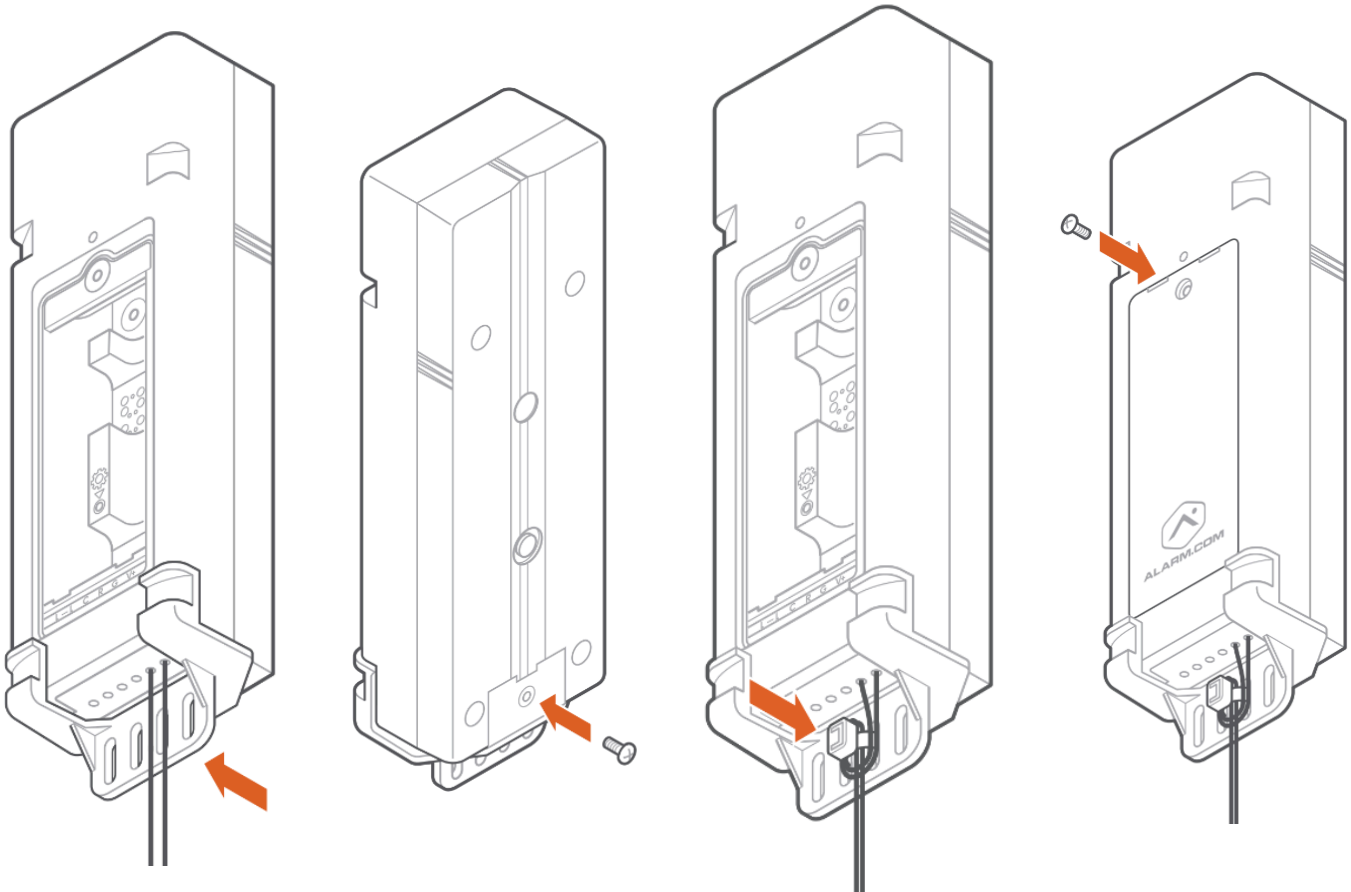
The Flex IO can now be mounted. For mounting instructions, see Flex IO (ADC-FLEX-100) - Installation Guide.

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!