# Addressable FAAST FLEX™ Product Guide




MI-FLX-010

MI-FLX-020

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1. Please allow only the **authorized users/persons** to handle the detectors installation and integrate with Bluetooth devices.
2. Please maintain the **log entry (Time, date , entry)** for all the users who are entered in the premises.
3. Please allow only the **authorized** devices to be used within the premises.

## Document Conventions

The following typographic conventions are used in this document:

| Convention | Description |
|---|---|
| **Bold** | **Used to denote:** emphasis.<br>Used for names of menus, menu options, toolbar buttons |
| *Italics* | **Used to denote:** references to other parts of this document or other documents. Used for the result of an action. |

The following icons are used in this document:

| Convention | Description |
|---|---|
|  | **Caution:** This icon is used to indicate that there is a danger to equipment. The danger could be loss of data, physical damage, or permanent corruption of configuration details. |
|  | **Precaution:** Electrostatic precautions must be followed to prevent damage to the detector. |

## Contact Us

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Switzerland

https://buildings.honeywell.com/gb/en/products/by-brand/morley-ias

# Codes and Standards Information for Air Sampling Smoke Detection

We strongly recommend that this document is read in conjunction with the appropriate local codes and standards for smoke detection and electrical connections. This document contains generic product information and some sections may not comply with all local codes and standards. In these cases, the local codes and standards must take precedence. The information below was correct at time of printing but may now be out of date, check with your local codes, standards and listings for the current restrictions.

# Regional Regulatory Requirements and Notices

### European Installations

**Transport Time**, as per EN 54-20 clause 5.11, is the duration it takes to move aerosols from the sampling point to the sensing element, excluding processing time during approvals body testing. The transport times included in Aspire, includes detector processing time, enabling practical confirmation of transport time in the field using Alert/Alarm indicators.

CE

**0786 25**

Honeywell Products and Solutions Sàrl
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Switzerland

**CE DoP: 38307**

EN 54-20: 2006

Aspirating smoke detectors for fire detection and fire alarm systems for buildings

Classes: A, B and C

# Product Listings

- VdS
- EN 54-20, ISO 7240:20
- EN 54-17:2005
- CE

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Doc. No. A05-7030-100_B

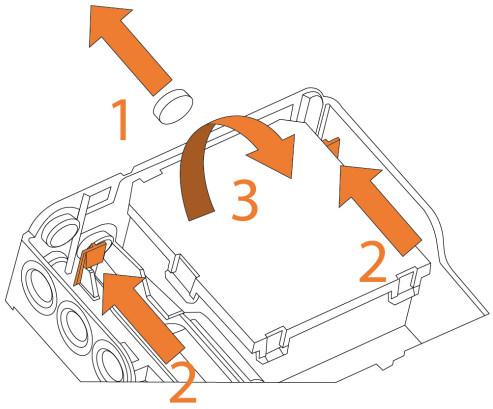
# Battery Removal for Recycling

**Caution:** Do not ingest battery. Chemical Burn Hazard. This product contains a coin cell battery. If the battery is swallowed, it can cause severe internal burns in just 2 hours and can lead to death.

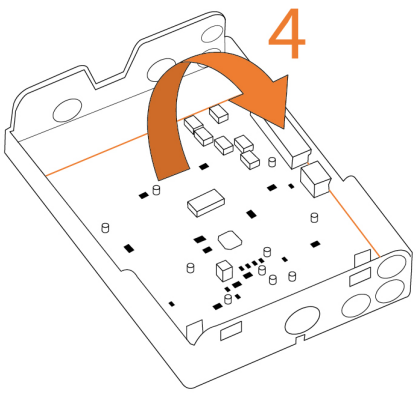
**Note:** Battery Removal Recycling should be done when the detector life expires. If done before, the warranty becomes void.

**Note:** The images shown are for illustration purposes only and may not be an exact representation of the unit.

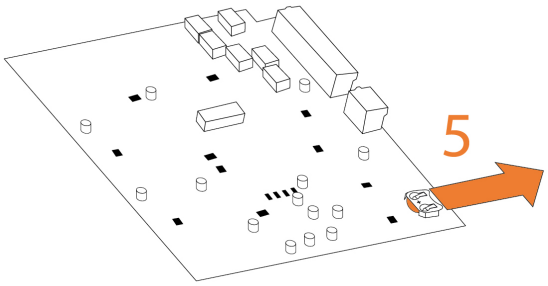
1. Remove the plug.
2. Remove the manifold by detaching the two clips.
3. Rotate the manifold and the sensing head to access the detector circuit.




4. Remove the PCB from the plastic base.




5. Remove the battery using a small screwdriver and following the direction of the arrow.




6. Recycle the CR2032 Lithium battery in accordance with your local regulations.

**Note:** Battery supplies the internal clock in the detector and can't be replaced in the field.

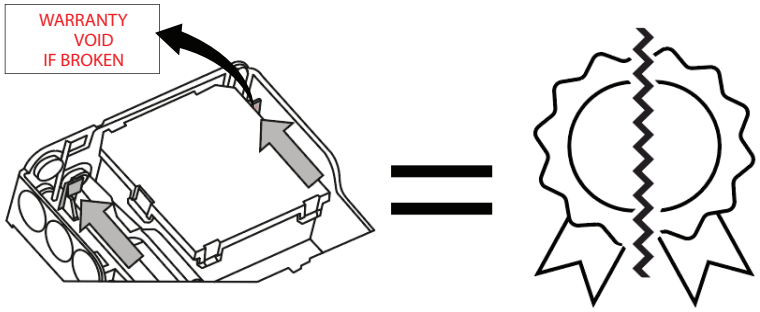
# Warranty

Morley warrants the Addressable FAAST FLEX aspirating detector against defective parts and workmanship.

This warranty does not cover consumable, batteries, fuses, normal wear and tear, or damage caused by accident, abuse, improper installation, unauthorized use, modification or repair, ambient environment, poisons, contaminants or abnormal operating conditions.

This warranty does not apply to sensors or components that are covered under separate warranties, or to any 3rd-party cables and components. In no event shall Morley be liable for any damages or injury of any nature or kind, no matter how caused, that arise from incorrect handling or use of this equipment.

This warranty will be void if the sealing label is broken and the plastic block is removed from the PCB.




In no event shall Morley be liable for any equipment malfunction or damages whatsoever, including (without limitation) incidental, direct, indirect, special, and consequential damages, damages for loss of business profits, business interruption, loss of business information, or other pecuniary loss, resulting from the incorrect installation or use of this equipment.

Any claim under the Morley Product Warranty must be made within the warranty period and as soon as reasonably practicable after a defect is discovered.

Please contact your local Morley Service representative to register your claim.

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# 1 Introduction

The FLEX Series is part of the Fire Alarm Aspiration Sensing Technology® (FAAST) family. FAAST is an advanced fire detection system for use where configurability, sensitivity and very early warning are a requirement. The system continuously draws air from the monitored environment through a series of sampling holes to monitor the environment for smoke particulate.

The FLEX has two channel capability with two high sensitivity smoke sensors in separate chambers (one sensor for each channel).

**Note:** Aspirating Smoke Detectors supplied and installed within the EU must conform to the EU Construction Products Regulation (CPR) 305/2011 and the related European Product Standard EN 54-20 and European short-circtui isolator Standard EN54-17. FAAST has been tested and certified to ensure that it conforms to the necessary Standards, but strict adherence to this instruction guide is advised to ensure that the installation meets the requirements of the CPR.

This equipment and all associated pipe work must be installed in accordance with all relevant codes and regulations.

## 1.1 Unit Description

The Addressable FAAST FLEX is an aspirating smoke detector that provides early warning detection using a dedicated high sensitivity smoke sensor. The Addressable FAAST FLEX is available as a one channel or two channel detector, Each sensing channel consists of an inlet, a metallic filter, a sensing element and a flow monitoring system. The product has a single aspirator and a single exhaust outlet. The Addressable FAAST FLEX is powered by an external 24 VDC power supply. Front panel LEDs indicate power, fault, and alarm status, and fault relays are activated in normal operation, and open in the event of a fault to notify monitoring systems. One General Purpose Input (GPI) is also provided.

Configuration of the device is typically via DIP switches on the circuit board. The circuit board also has a USB port that can be used by maintenance technicians to download event logs.

Components subject to periodic maintenance are designed to be easily reachable in any cabling situation. An in-line filter (Morley: VSP-850, System Sensor: F-INF-25) can be installed on the pipeing close to the inlet in order to improve protection to the sensing elements in particularly harsh (e.g. dusty) environments. The product is designed to protect an area up to 1600m² for 1 channel models and 2000 m² for two channel models.The product is designed to be compliant with EN54-20 Class A, B, and C sensitivity requirements.

## 1.2 Storage and Shipping

The Addressable FAAST FLEX detectors are shipped in specifically designed cartons. If the detectors must be stored, store the devices in the original shipping cartons. The product should be stored in an environmentally controlled, clean, dry, well ventilated area free from any corrosive agents. Do not store the devices for more than one year.

The detectors can be damaged by rough handling. During transportation, avoid violent vibration, heavy shock loads, and exposure to excessive heat or moisture.

## 1.3 Ordering Information

| Ordering Code | Description |
|---|---|
| MI-FLX-010 | Addressable FAAST FLEX 1-pipe (Morley) |
| MI-FLX-020 | Addressable FAAST FLEX 2-pipe (Morley) |
| FLX-SP-01NG | Addressable FAAST FLEX Sensing Module |
| FLX-SP-02 | Addressable FAAST FLEX Metal Filter (pack of 6) |
| FLX-SP-03-MOR | Addressable FAAST FLEX Front Cover (Morley) |
| FLX-SP-05-COM | Addressable FAAST FLEX Internal Covers Set (Morley) |
| FLX-SP-04 | Addressable FAAST FLEX Aspirator |
| FLX-SP-06 | Addressable FAAST FLEX Adaptor Set |

# 2 Product Information

## 2.1 Detector Components

Figure 2-1 shows the major components of the Addressable FAAST FLEX. The Addressable FAAST FLEX is available in 1 Channel and 2 Channel models. For simplicity, the double Channel version is shown in illustrations in this manual unless there is an important difference between the two models.

**Note:** The image shown is for illustration purposes only and may not be an exact representation of the unit.

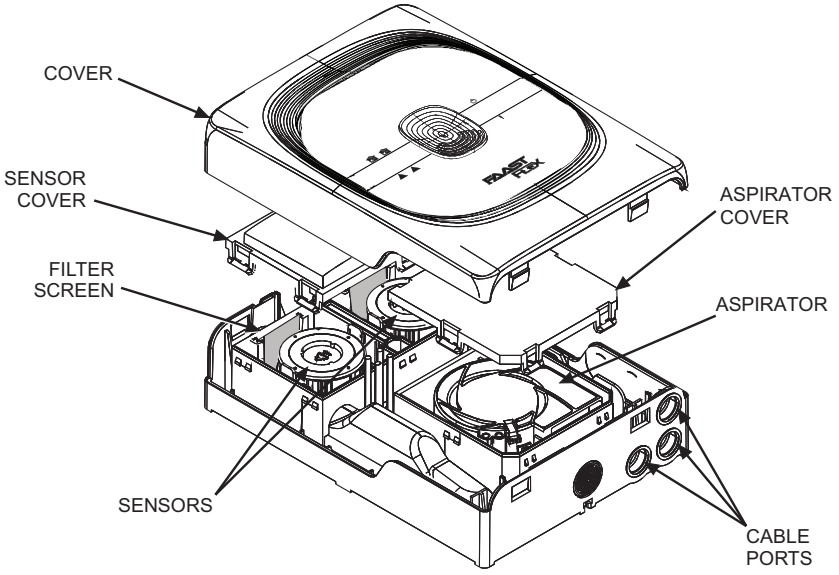



Figure 2-1: Detector Components

## 2.2 General Information

Figure 2-2 shows the information label on the Addressable FAAST FLEX. There is a QR code that can be scanned to access the online manual, and a barcode that can be scanned to access the model and serial number.

**Power Requirements**

The device requires an external 24 VDC power supply. In order to meet EN54-20 standard, the aspirating detector shall be supplied by a power supply complying with European Standard EN54-4. Operational Power Supply range is 19-30V. The device monitors the power supply and when supply voltage drops below 19V, the device switches to PROTECTION state and activates fault relays. When the device is turned off by brown-out hardware circuit, the fault relays remains activated.

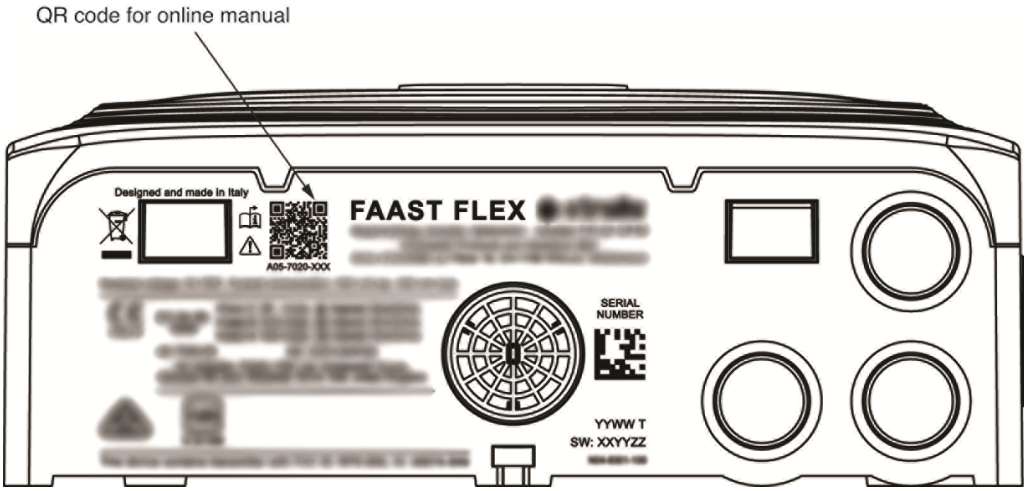



Figure 2-2: Addressable FAAST FLEX Product Information

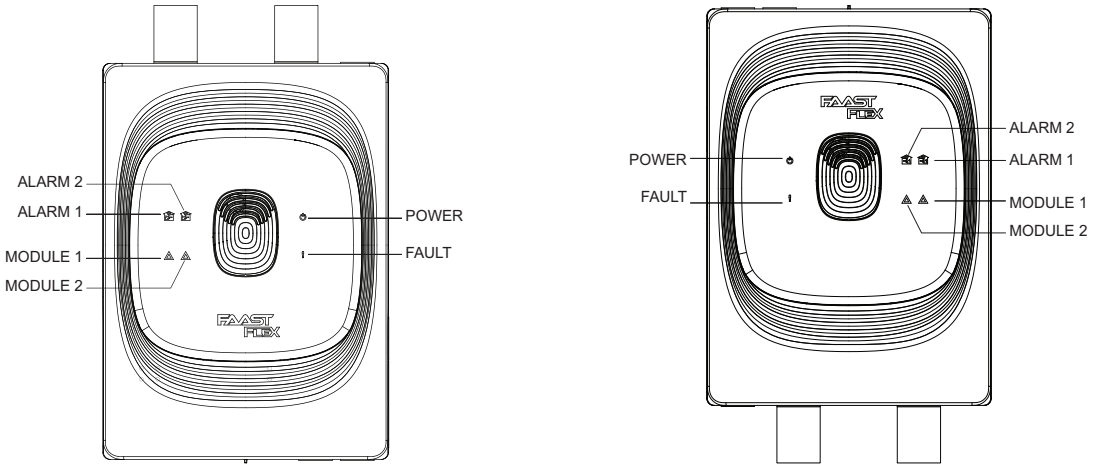
## 2.3 Front Panel Indicators

The Addressable FAAST FLEX front panel has six indicator LEDs the communicate status information to the operator (see Figure 2-3).

Table 2-1: LED Indicators

| LED | Indications | Meaning | Detector Cover |
|---|---|---|---|
| ALARM 1 | Green, Blink once | Channel 1 sensor polled by FACP | Open/Close |
| | Yellow, Slow Blink | Wait for authentication | Open |
| | Red, Steady | Alarm condition on Channel 1 | Open/Close |
| ALARM 2 | Green, Blink once | Channel 2 sensor polled by FACP | Open/Close |
| | Red, Steady | Alarm condition on Channel 2 | Open/Close |
| MODULE 1 | Yellow, Steady | Isolator fault | Open/Close |
| | Yellow, Blink once | Channel 1 module polled by FACP and when the module is in fault condition | Close |
| | Green, Blink once | Channel 1 module polled by FACP and when the module is in normal condition | Close |
| | Red, Steady | Module EEPROM fault | Open/Close |
| MODULE 2 | Yellow, Steady | Isolator fault | Open/Close |
| | Yellow, Blink once | Channel 2 module polled by FACP and when the module is in fault condition | Close |
| | Green, Blink once | Channel 2 module polled by FACP and when the module is in normal condition | Close |
| POWER | Green, Steady | Power on, normal operation | Close |
| | Green, Slow Blink | Change configuration | Open |
| | Green, Fast Blink | Writing log to USB stick | Open |
| | Yellow, Steady | Power on, system initializing | Open/Close |
| | Yellow, Fast Blink | Wait for USB stick | Open |
| | Yellow, Slow Blink | Wait , Normalize procedure in progress | Open |
| | Red, Steady | Protection mode - under or over voltage condition exists | Open/Close |
| | Red, Fast Blink | Service mode | Open |
| FAULT | Green, on for 3 seconds | Operation successful | Open |
| | Green, fast blink | Following initialization, indicates extended configuration is being loaded | Open/Close |
| | Yellow, Steady | One or more faults detected | Open/Close |
| | Yellow, Fast Blink | Wait for cover open to confirm unauthorized change configuration | Close |
| | Yellow, Slow Blink | One or more alerts detected | Open/Close |
| | Red, ON for 3 seconds | Operation result failed | Open |
| | Red, Fast Blink | Normalize procedure in process | Open |
| All LEDs | Yellow, Every 10 seconds | Disable | Open/Close |
| | Green, Steady | Identification device in BT connection | Open/Close |

**Note:** The images shown are for illustration purposes only and may not be an exact representation of the unit.




**Standard Mounting** **Inverted Mounting**

Figure 2-3: Addressable FAAST FLEX Indicator LEDs

## 2.4 Audible Alarms

The Addressable FAAST FLEX has a buzzer that provides the following audible feedback:

- Buzzer will sound whenever the user presses a button. This is the default configuration and it can be disabled with the Silence button (See section 6.3 WAIT Mode).
- Buzzer will sound for 0.5 seconds when the NORMALIZE procedure is completed (See section 6.3.4 Normalize).
- Buzzer will sound for 0.5 seconds when a data log file or a DIAGTEST.txt has been written to the USB drive (See section 6.3.8 Test Mode).
- Buzzer will sound for 0.5 seconds when the cover is opened or closed and there is a conflict between the DIP switch settings and the current device configuration (for example, if a DIP switch has been accidentally changed).
- Buzzer will sound for 0.5 when the detector is connected / disconnected to SMARTCONFIG (Bluetooth App).
- Buzzer will sound for 0.5 when the passcode recovery procedure is done.

## 2.5 Specifications

Table 2-2: Addressable FAAST FLEX Detector Specifications

| Specification | Value |
|---|---|
| **Electrical Characteristics** | |
| Voltage Range | 19-30 VDC (24 V Nominal) |
| Supply Current (@24 VDC 25°C) | Single Channel Model: 200 mA (typical) 400 mA (max) @ 24V |
| | Dual Channel Model: 220 mA (typical) 450 mA (max) @ 24V |
| General Purpose Input (GPI) | Activation Time 2s (min) |
| Relay Contact Ratings | 2.0 A @ 30 VDC, 0.5 A @ 30 VAC |
| **Electrical - Panel loop** | |
| Operating Voltage Range | 15-32 VDC (24 V Nominal) |
| Maximum Standby Current | Single Channel Model: 450uA @24V and 25°C (No communication)<br>Dual Channel Model: 680 µA @24 V and 25°C (No communication) |
| **Environmental Ratings** | |
| Operating Conditions | **Temperature:**<br>• **Ambient:** -40 °C to 55 °C (-40°F to 131°F)<br>• **Sampled Air:** -40 °C to 55 °C (-40°F to 131°F)<br>**Humidity:**<br>• 10-93% RH, non-condensing |
| Flow Fault | ± 20% of the reference flow (according to EN54-20) |
| IP Rating | IP40 |
| **Mechanical** | |
| Exterior Dimensions | 204 mm x 280 mm x 80.5 mm |
| Wiring | 0.5 mm² to 2.5 mm² maximum |
| Pipe Network Layout | **Single Channel Model**<br>• Linear pipe length: 1 X 105m (344 ft)<br>• Branched pipe length: 2 X 105m (344 ft)<br>**Dual Channel Model**<br>• Linear pipe length: 2 X 105m (344 ft)<br>• Branched pipe length: 4 X 105m (344 ft)<br>**Note:** Results can be achieved using ASPIRE. |
| Pipe Spec (EN54-20 Compliance) | EN 61386 (Crush 1, Impact 1, Temp 31) |
| Outside Pipe Diameter | 27 mm (nom) or 25 mm (nom) with plug/adapter |
| Shipping Weight | 1.7 kg (including sensors) |

# 3 Installation

## 3.1 Instruction Sheet

Refer to the graphical instruction sheet in the box for installation instructions. This instruction sheet (37328) is available online at https://buildings.honeywell.com/gb/en/products/by-brand/morley-ias.

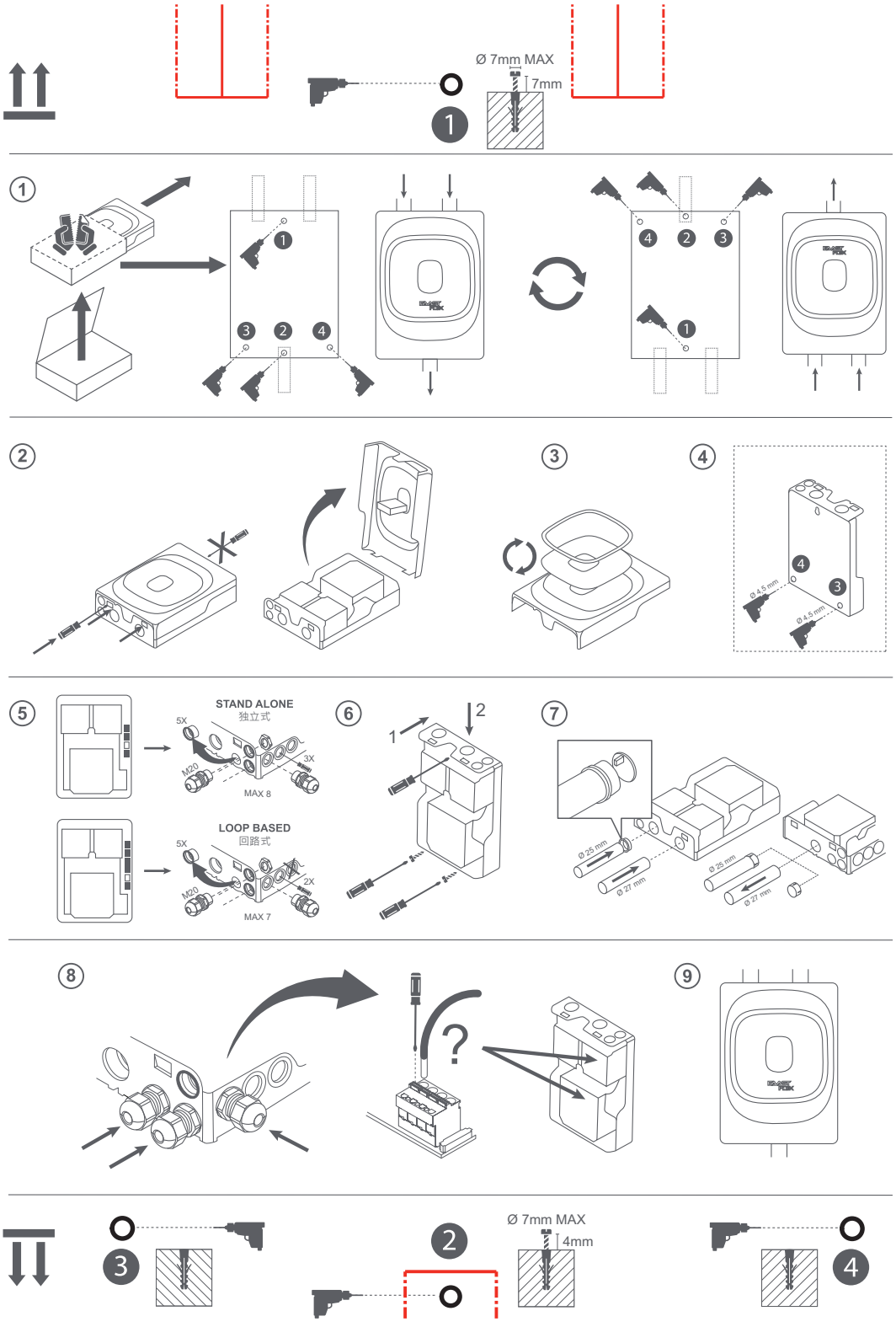



Figure 3-1: Graphical Installation Instructions

## 3.2 Mounting the Unit

The Addressable FAAST FLEX is mounted on any wall or flat surface that is conveniently located for access to the piping and electrical connections. It can be mounted in the standard orientation or inverted 180°. Once the proper location has been determined, mount the device as follows:

**Note:** The Addressable FAAST FLEX can be mounted with either two or four screws, depending on your specific requirements.

1. The cover of the box Addressable FAAST FLEX, a template for the mounting holes is provided (see Figure 3-2).
2. Use the template to mark the locations for the mounting holes, ensuring that all piping and electrical connections are located properly.

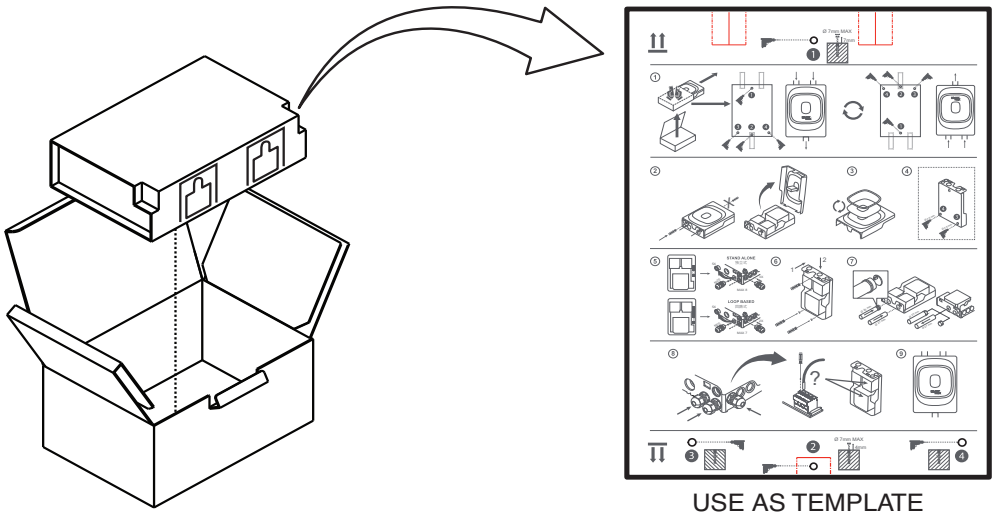



Figure 3-2: Mounting Template

3. Drill appropriate pilot mounting holes for M4 screws in the locations designated by the template.
4. Loosely install a screw in the Hole 1 location.
5. Position the Addressable FAAST FLEX in place over the mounting screw in Hole 1 (Figure 3-3) , and slide it down into place.
6. Install a mounting screw in Hole 2.
7. Tighten the two mounting screws, taking care not to overtighten. Over tightening the screws can damage the device.
8. Optionally, install mounting screws in Holes 3 and 4.

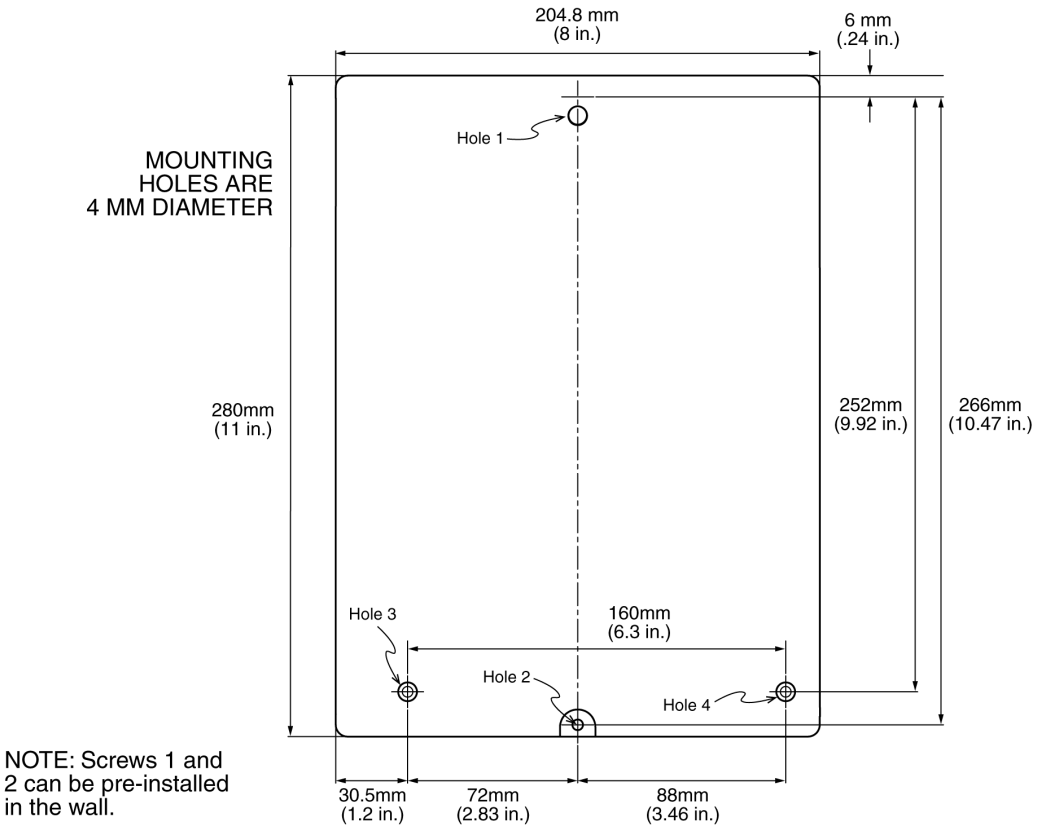



Figure 3-3: Mounting Hole Dimensions

## 3.3 Removing the Cover

1. Using a small screwdriver or other suitable tool, press in the two tabs **on the inlet side** of the Addressable FAAST FLEX (see Figure 3-4).
2. Rotate the cover up as shown and remove it.

**Note:** The images shown are for illustration purposes only and may not be an exact representation of the unit.

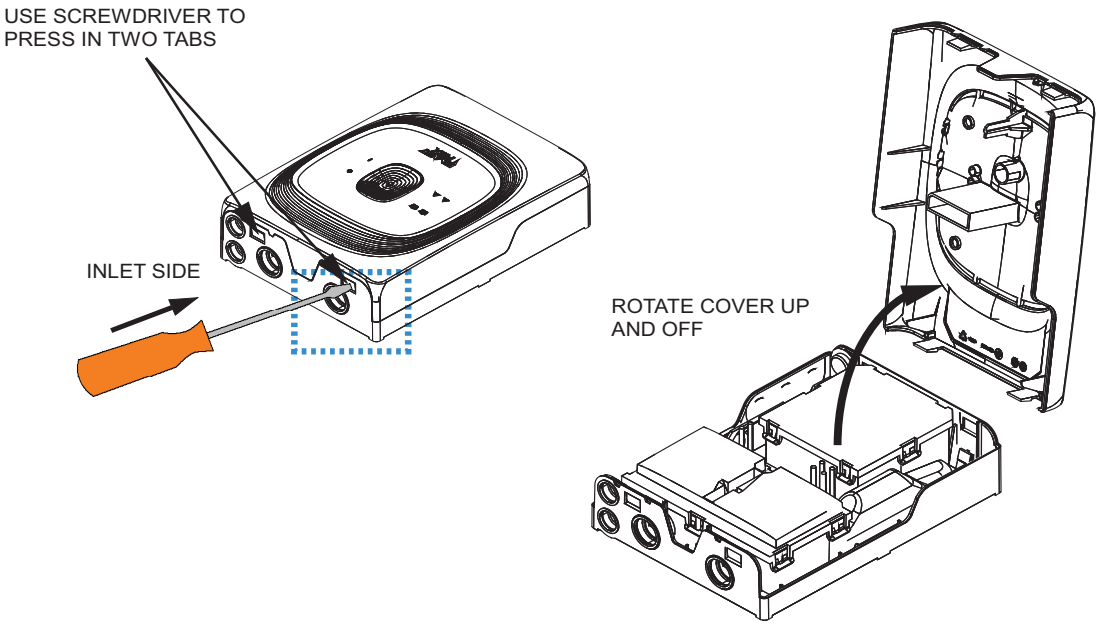



Figure 3-4: Removing the Cover

## 3.4 Orientation

The Addressable FAAST FLEX can be mounted either in standard orientation or inverted (see Figure 3-5). The access and location of the inlet and outlet pipes is usually the determining factor in selecting the orientation.

**Notes:**
- Inverted installation must be set using dip-switch 9.
- The images shown are for illustration purposes only and may not be an exact representation of the unit.

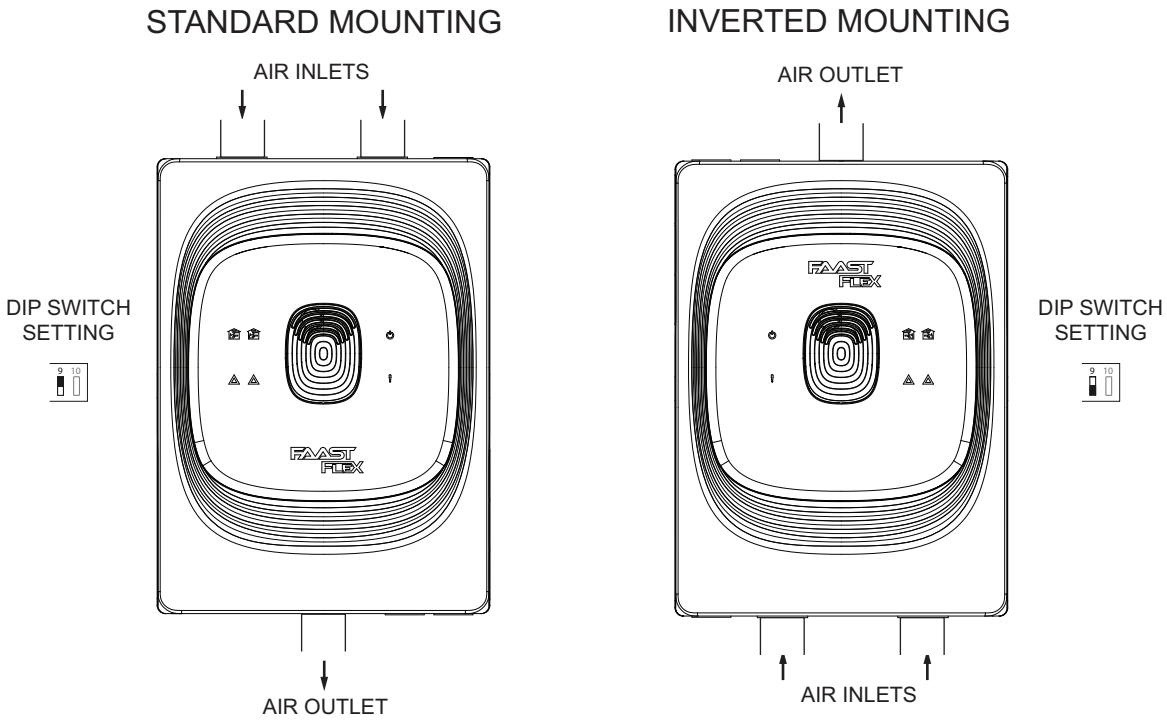



Figure 3-5: Mounting Orientation

## 3.5 Front Label

The device is shipped with the front panel labels installed for standard mounting. The labels are double-sided; one side is printed for standard mounting, and the reverse side is printed for inverted mounting (see Figure 3-6). The label should be installed to match the mounting orientation. To place the label, detach the 4 gray clips from inside the cover and snap the retainers off the device. Position the label as desired, then snap the retainer back in place.

**Notes:**
- Inverted installation must be set using dip-switch 9.
- The images shown are for illustration purposes only and may not be an exact representation of the unit.

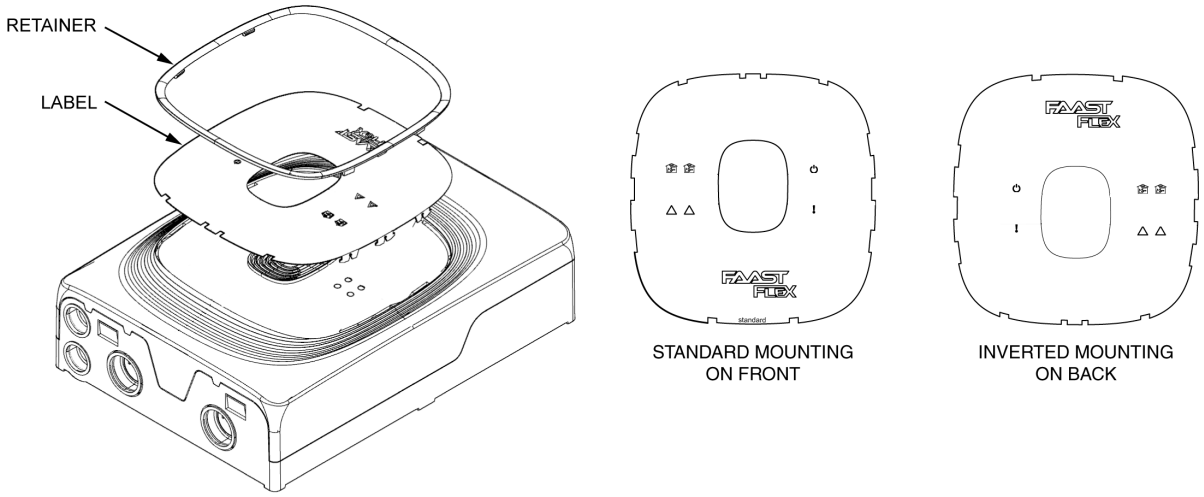



Figure 3-6: Front Label Installation

## 3.6 Piping Considerations

1. Inlet ports that are not used should remain sealed.

**Caution:** DO NOT glue piping into the inlet and exhaust ports. Pipes that are glued in will be deemed out of warranty, since they cannot be tested.

2. To avoid contamination by dust, debris, insects, or spiders, It is recommended that inlet and exhaust ports remain plugged before use. Seal up inlet and exhaust ports if the device is turned off during maintenance periods.
3. Whenever the Addressable FAAST FLEX is installed outside the risk area, it is recommended that the exhaust air from the device be returned to the risk area. This will reduce flow faults caused by pressure differences (see Figure 3-7).

**Note:** The images shown below are for illustration purposes only and may not be an exact representation of the unit.

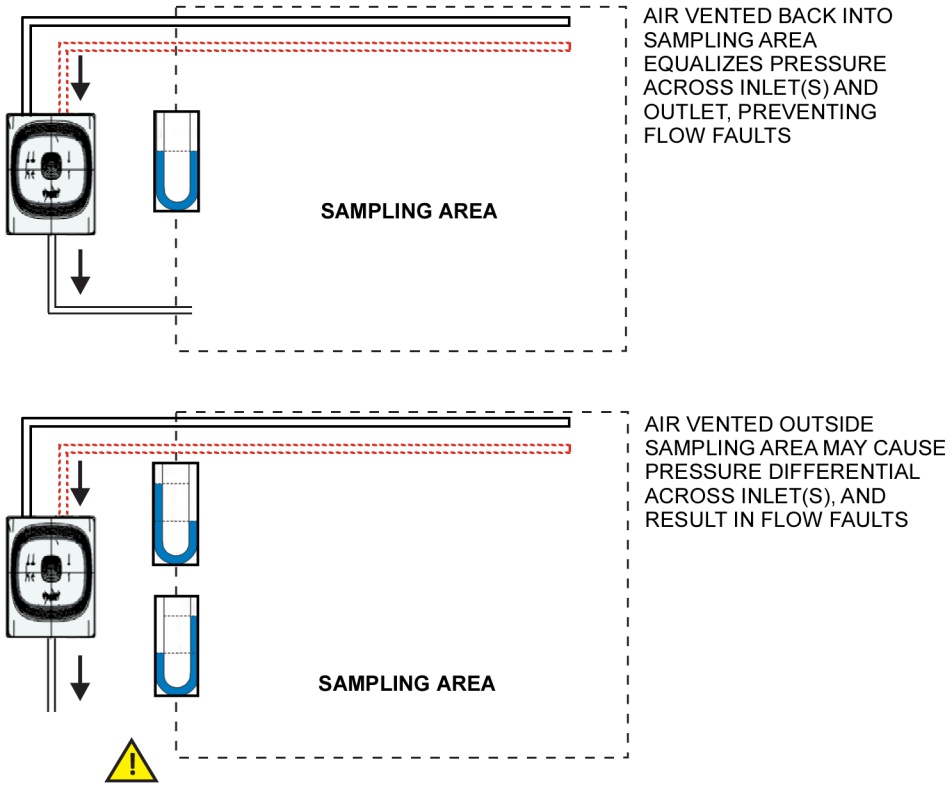



Figure 3-7: Piping Considerations

4. DO NOT USE GLUE OR ADHESIVE. The Addressable FAAST FLEX ports are designed to provide a complete seal without the use of any adhesives, glues, or other substances.
5. The Addressable FAAST FLEX is designed to accommodate either 27mm or 25mm pipe. If 25mm piping is used, an adapter is required. On the inlets, the pipe plugs can be used as an adapter by removing the center of the plug to open it up (see Figure 3-8). On outlet piping, the screen can be used as an adapter with 25mm piping (see Figure 3-9).

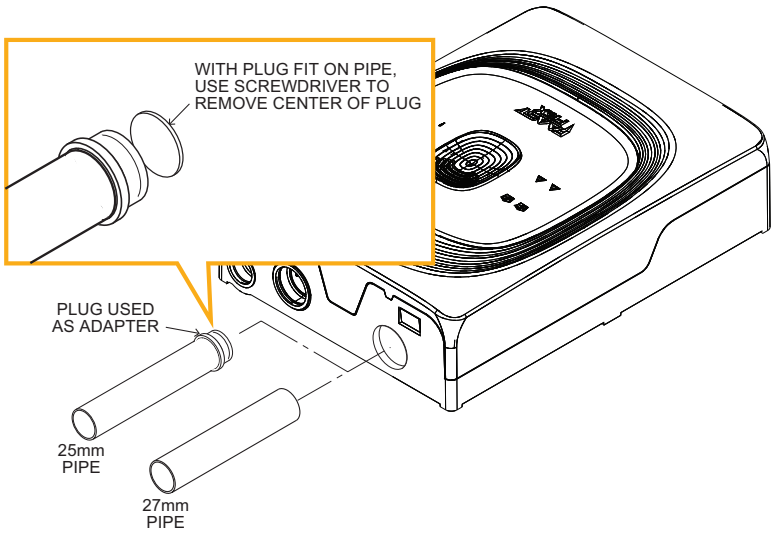



Figure 3-8: Inlet Piping Connections

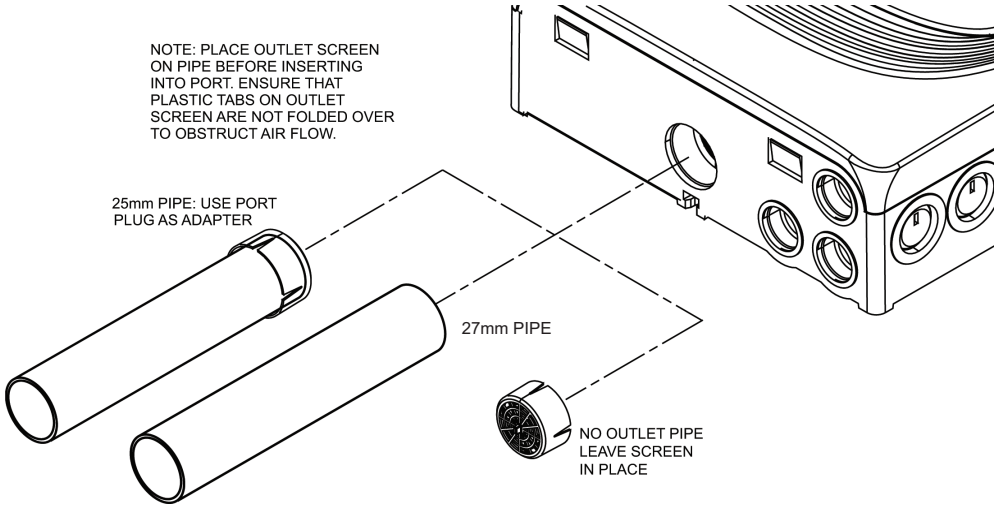



Figure 3-9: Outlet Piping Connections

## 3.7 Cable Access

Determine the cable gland holes that will be used for your installation. The specific holes used will be different depending on the specifics of your installation. The top and bottom cable ports use a 20mm gland. For the side ports, you must use an appropriate punch tool (such as a screwdriver) to gently tap the covers out of the selected holes. Figure 3-10 shows the locations of the available cable ports.

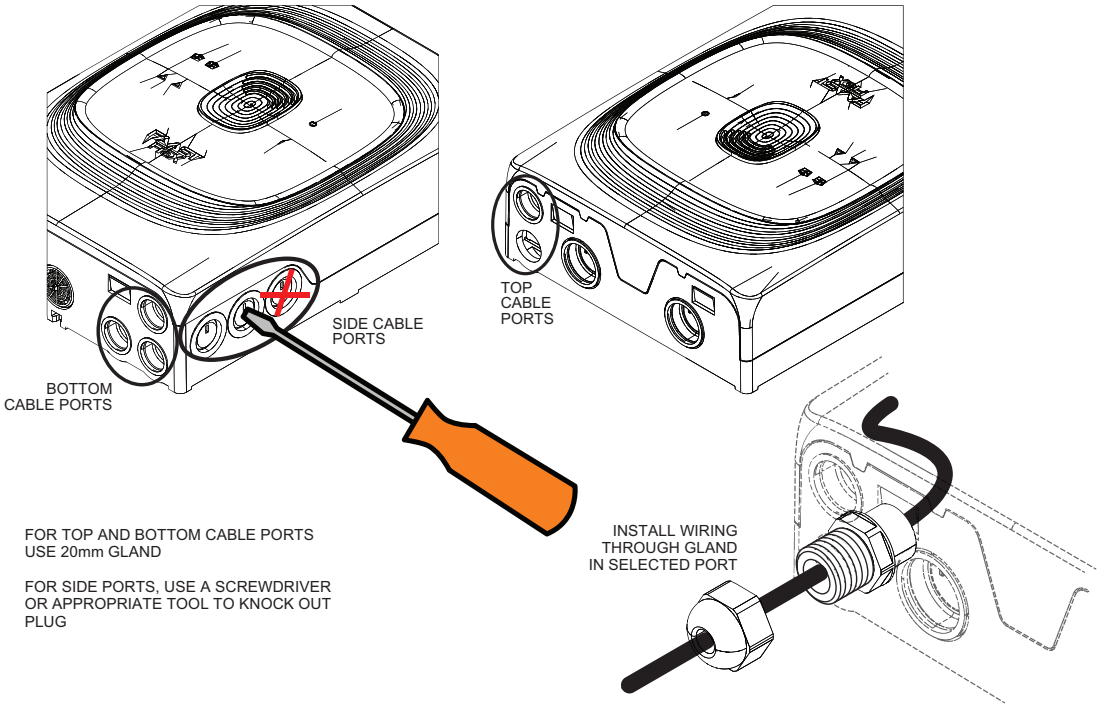



Figure 3-10: Cable Ports

# 4 Wiring Installation

## 4.1 Wiring Considerations

1. All wiring must comply with local requirements and regulations.
2. Panel wiring must comply with the recommendations of the panel manufacturer.
3. Always use appropriate gauge wire. Inspect all connections to ensure they are tight and secure.
4. Remove the cover as shown in Figure 3-4.
5. Electrical connections are made to the terminal blocks as shown in section 4.2 Relay Outputs. Wire insulation should be stripped approximately 5mm from the end. Using a small screwdriver, push down on the small tab on the terminal block, and then insert the wire into the corresponding hole.

**Note:** Wiring diagrams are printed on the internal covers of the detector.

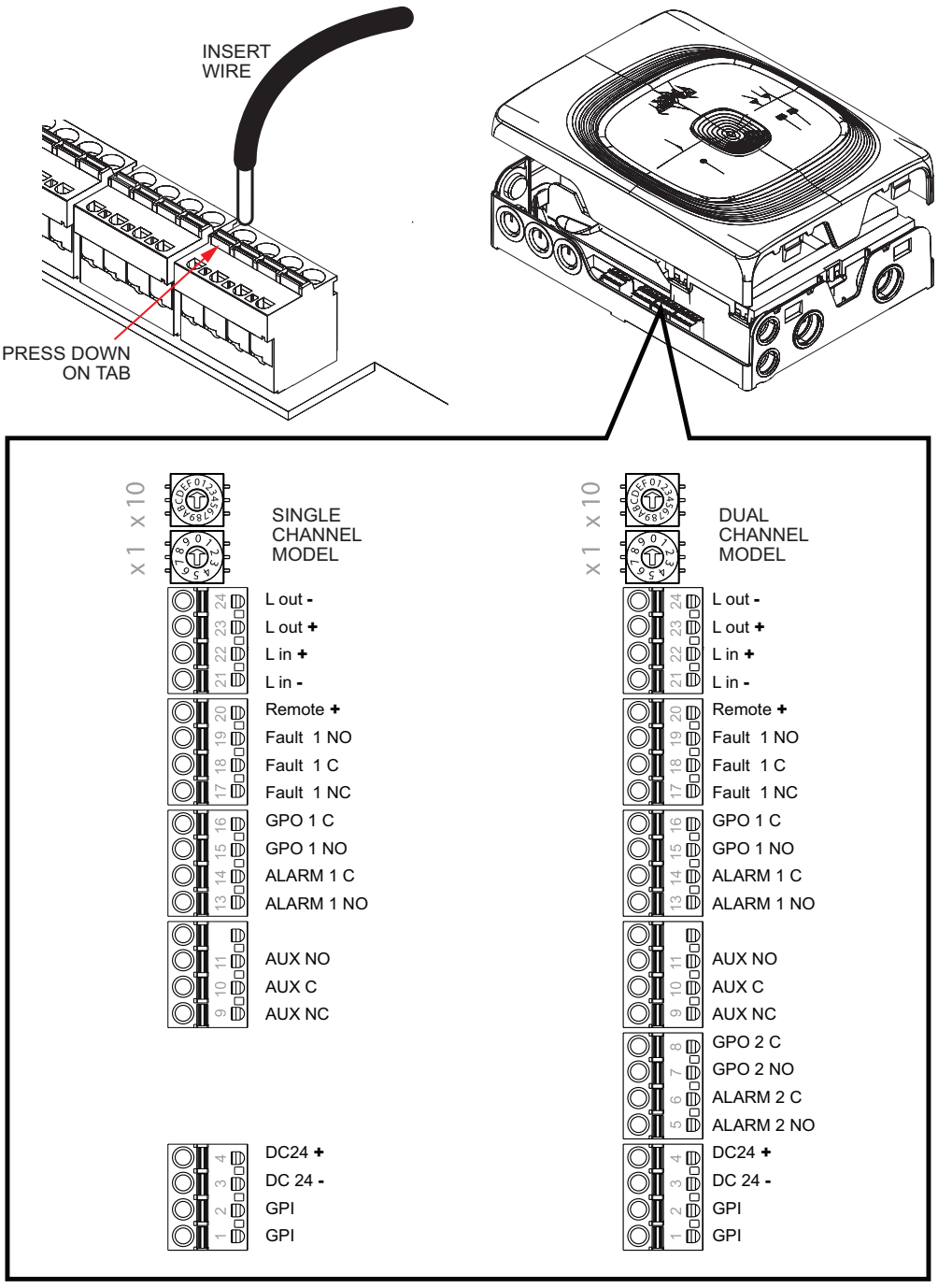



Figure 4-1: Wiring Connections

## 4.2 Relay Outputs

For all the versions of the Addressable FAAST FLEX single pole, changeover, unsupervised contacts for Fault, Alarm and General Purpose Output (GPO) are provided for each channel. Alarm and GPO relays are normally de-energized. They are switched on by the unit command. See table below for more details.

**Note:** In case of power down, Faults are activated. On 2 Channel models, generic fault conditions activate both channels relays.



**Caution:** Output channel status should be checked before powering any circuit served by the output channel itself to avoid any position change due to either shipment or installation handling.

Table 4-1: Relay Outputs

| LED | Set Condition | Indications | Notes |
|---|---|---|---|
| ALARM 1 / 2 | Sensor 1/2 state is alarm (sensor alarm mode)<br>Channel module 1/2 output is ON (module alarm mode) [1] | LATCHED: Alarm reset sequence from user [1]<br>UNLATCHED: Alarm condition ended | |
| GENERAL PURPOSE OUTPUT 1 / 2 | Alarm condition<br>Advanced protocol Set Output command [2] | LATCHED: Alarm reset sequence from user [1]<br>UNLATCHED: Alarm condition ended | |
| GENERAL FAULT | One or more Fault condition(s) involving CH1<br>One or more Fault condition(s) in common to both channels<br>Service mode<br>Protection<br>Disable<br>One or more Fault condition(s) involving CH2 [1] [3] | LATCHED: Fault reset sequence from user [1]<br>UNLATCHED: All fault conditions ended | i.e. Flow or sensor communication faults involve the corresponding channel; aspirator fault involves both channels |

[1] Only for devices set to Extended in the SmartConfig app Legacy or Flex configuration mode and basing on user configuration

[2] Only for devices set to Flex configuration mode and basing on user configuration

[3] CH2 faults can be reported on the GENERAL or the AUX FAULT relays

| LED | Set Condition | Indications | Notes |
|---|---|---|---|
| AUXILIARY FAULT | One or more Fault condition(s) involving CH2[1]<br>One or more Fault condition(s) in common to both channels [1]<br>Service mode<br>Protection<br>Disable<br>Low/high temperature alert CH1/CH2 [2]<br>GPI fault [2]<br>Low/high power fault [2]<br>Ultrasonic circuit fault CH1/CH2 [2]<br>Aspirator fault [2]<br>High/low flow fault CH1/CH2 [2]<br>Sensor communication fault CH1/CH2 [2]<br>Module communication fault [2] | LATCHED: Fault reset sequence from user [2]<br>UNLATCHED: All fault conditions ended | |

## 4.3 GPI (General Purpose Input)

One GPI is provided.

### 4.3.1 OUT OF BOX Configuration

In OUT OF BOX configuration, when a transition between normal state (open) and active state (short) is detected, the device will trigger an external fault.

[1]CH2 faults can be reported on the GENERAL or the AUX FAULT relays

[2]Only for devices set to Extended in the SmartConfig app Legacy or Flex configuration mode and basing on user configuration

### 4.3.2 Extended Configuration (Honeywell SmartConfig App)

In Extended configuration, the user can set up different GPI modes via the Honeywell SmartConfig App, the two modes are Supervised and Unsupervised.

**Setting Unsupervised**, the customer will be able to choose normal state (open or closed) and the action to perform on the transition to active state. Available options are:

- **0**=none
- **1**=Reset device
- **2**=Trigger Ext Fault
- **3**=Perform a DISABLE action
- **4**=Perform an alarm RESET.

**Setting Supervised**, the detector will set up normal state as a 47K EOL resistor with two transitions available: toward open and toward short.

Each of these transitions can be set to perform:

- **0**=none
- **1**=Reset device
- **2**=Trigger Ext Fault
- **3**=Perform a DISABLE action
- **4**=Perform an alarm RESET.

This feature will not available through the RESET button, if the GPI is configured to enter and exit from DISABLE mode.

# 5 User Interface

There are four buttons located under the cover that are used to configure various operating parameters and perform additional setup, data logging, and test functions (see Figure 5-1).

**Notes**:
- *: Enter the passcode to start the procedure.
- **Underlined**: Press and hold the button for 2 seconds to start the procedure.

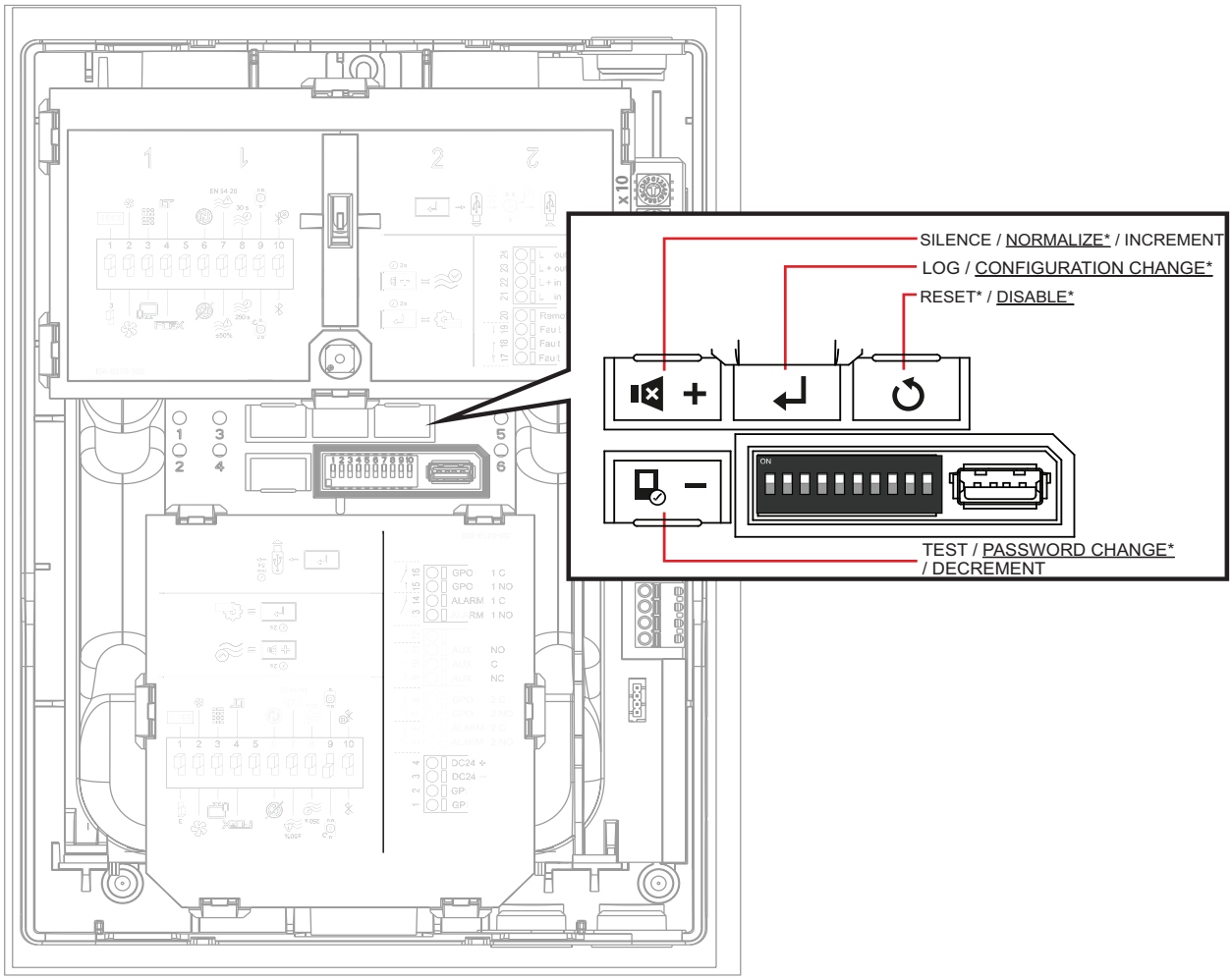



Figure 5-1: User Buttons

# 6 Working Modes

In normal operation when the device is powered on, it will initialize for 30 seconds and then it will enter NORMAL mode. If the device is in NORMAL mode and the cover is opened the device will enter WAIT mode, after a 60 seconds timeout without any action from the user the device enters SERVICE Mode.

Closing the cover while the device is in Service mode causes the device to enter INITIALIZATION Mode and after 30 seconds it will enter NORMAL mode. Closing the cover while the device is in WAIT mode will return the device to NORMAL mode. The device enters PROTECTION mode in certain situations, refer to section 6.4 PROTECTION Mode for more information. Figure 6 illustrates the working modes of the device.

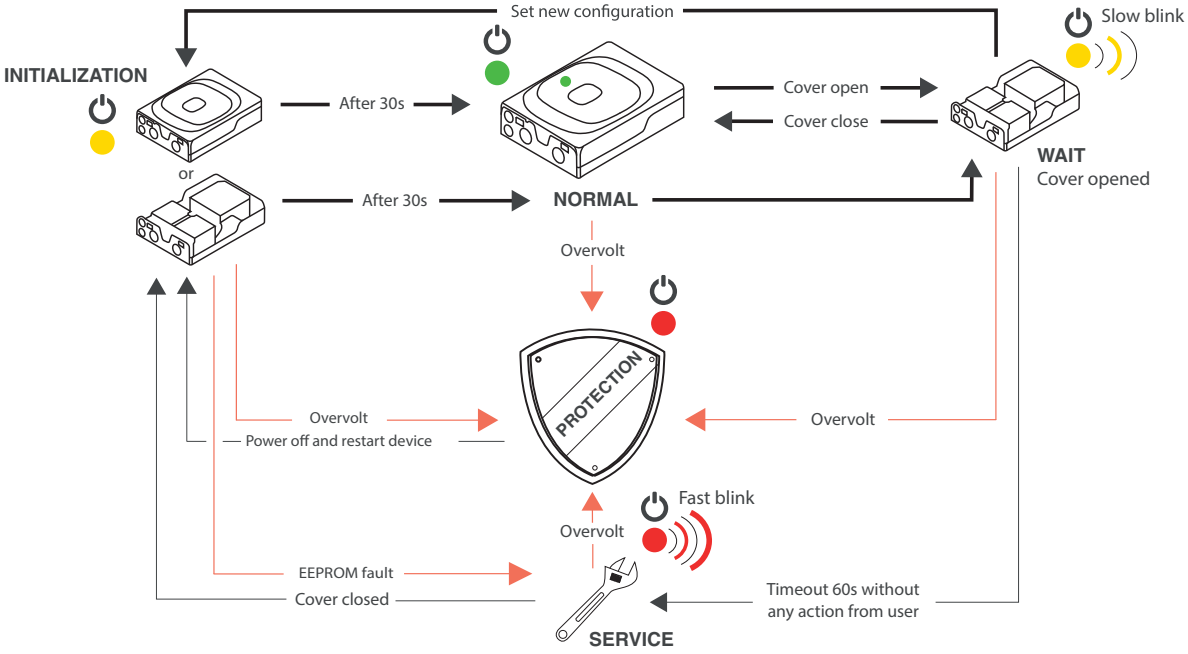



Figure 6-1: Working Modes

## 6.1 INITIALIZATION Mode

After the power up, the device performs an initialization sequence with the following actions, during which the POWER LED is on steady yellow.

- Checks power supply.
- Tests peripheral equipment connected to the device.
- Reads the DATAFLASH and DIP switch positions for configuration.

If there is a conflict between the DIP switch positions and the DATAFLASH values, the next step depends on whether the cover is open or closed.

1. If the cover is open, the device will prompt the user to enter the password in order to accept the new DIP switch position changes.
2. If the cover is closed, the device will signal a configuration fault and will turn on the buzzer for 0.5 every time the cover is opened or closed.

If the device has been configured to use the extended mode, at the end of initialization the FAULT LED blinks fast green for 3 seconds before changing - either to WAIT mode if the cover is open, or to NORMAL mode if the cover is closed.

## 6.2 NORMAL Mode

This is normal working mode. The device monitors the power supply voltage, aspirator speed, air flows, cover status, and signals and logs faults and alarms.

## 6.3 WAIT Mode

The WAIT mode is a sub-mode of the NORMAL mode. There are two ways to enter into the WAIT mode:

1. If the cover is open the device enters WAIT mode after power-on and initialization.
2. If the cover is opened while the device is in NORMAL mode.

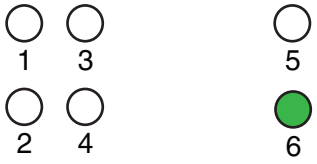
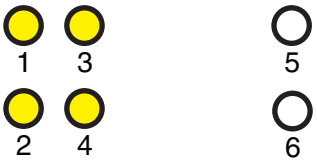
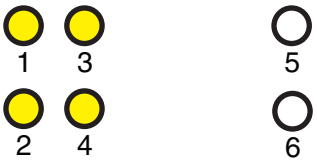
On entering WAIT Mode the POWER LED blinks yellow (slow blink). At this point the device is waiting for a button press.

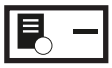
After 60 seconds of no activity in WAIT mode the device will automatically go into the SERVICE mode. Every time an action (button or BLT) is performed in WAIT mode the timeout timer restarts. If a non-protected action (no passcode required) is requested, the command is executed and then the device comes back to WAIT mode. If a protected action (passcode required) is requested, user is prompted to enter the passcode. If the passcode is correct the device will perform the requested action.

**WAIT Mode Actions**

**Note:** For a long press of a button, press and hold it for 2 seconds.

Table 6-1: WAIT Mode Actions

| Action | Button | LED Display | Description |
|---|---|---|---|
| Toggle button beeps ON/OFF | Short Press  |   | LED 6 will show green ON for 3 seconds as feedback. Default beeps ON. |
| Initiate NORMALIZE procedure ***(Passcode Authentication Required - if not authenticated, you must enter the passcode to start procedure.)*** | Long Press  | | LEDs 1 through 4 will show yellow to indicate that the NORMALIZE procedure has started. See section 6.3.4 Normalize. |
| Copy LOGREPOR.TXT to USB drive | Short Press  | | USB drive must be inserted. See section 6.3.6 Event Logs for more information. |
| Enter CHANGE CONFIGURATION MODE ***(Passcode Authentication Required)*** | Long Press  |   | LEDs 1 through 4 will show yellow to indicate change configuration procedure has started. See section 6.3.3 Changing Configuration Mode. |
| Reset active Alarms or Faults ***(Passcode Authentication Required)*** | Short Press  | | Resets the latched alarm and faults status. |
| Toggles DISABLE Mode ON/OFF ***(Passcode Authentication Required)*** ***(This option is NOT AVAILABLE if GPI is configured to enter/exit DISABLED procedure)*** | Long Press  |   | LEDs 1 through 4 will show yellow to indicate disable mode has turned ON/OFF. |

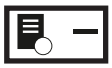
| Action | Button | LED Display | Description |
|---|---|---|---|
| Place unit in TEST Mode | Short Press  | | See section 6.3.8 Test Mode for more information |
| Initiate CHANGE PASSWORD procedure ***(Passcode Authentication Required - if not authenticated, you must enter the passcode to start procedure.)*** | Long Press  | | LEDs 1 through 4 will show yellow to indicate that the CHANGE PASSWORD procedure has started. See section 6.3.2 Changing the Passcode for more information. |

## 6.3.1 Authenticating - Entering Passcode

**Caution:** THE DEFAULT PASSCODE IS 000000 AND IT MUST BE CHANGED DURING DEVICE COMMISSIONING! BE SURE TO RECORD THE NEW PASSCODE IN ACCORDANCE WITH YOUR LOCAL POLICIES.

**Overview**

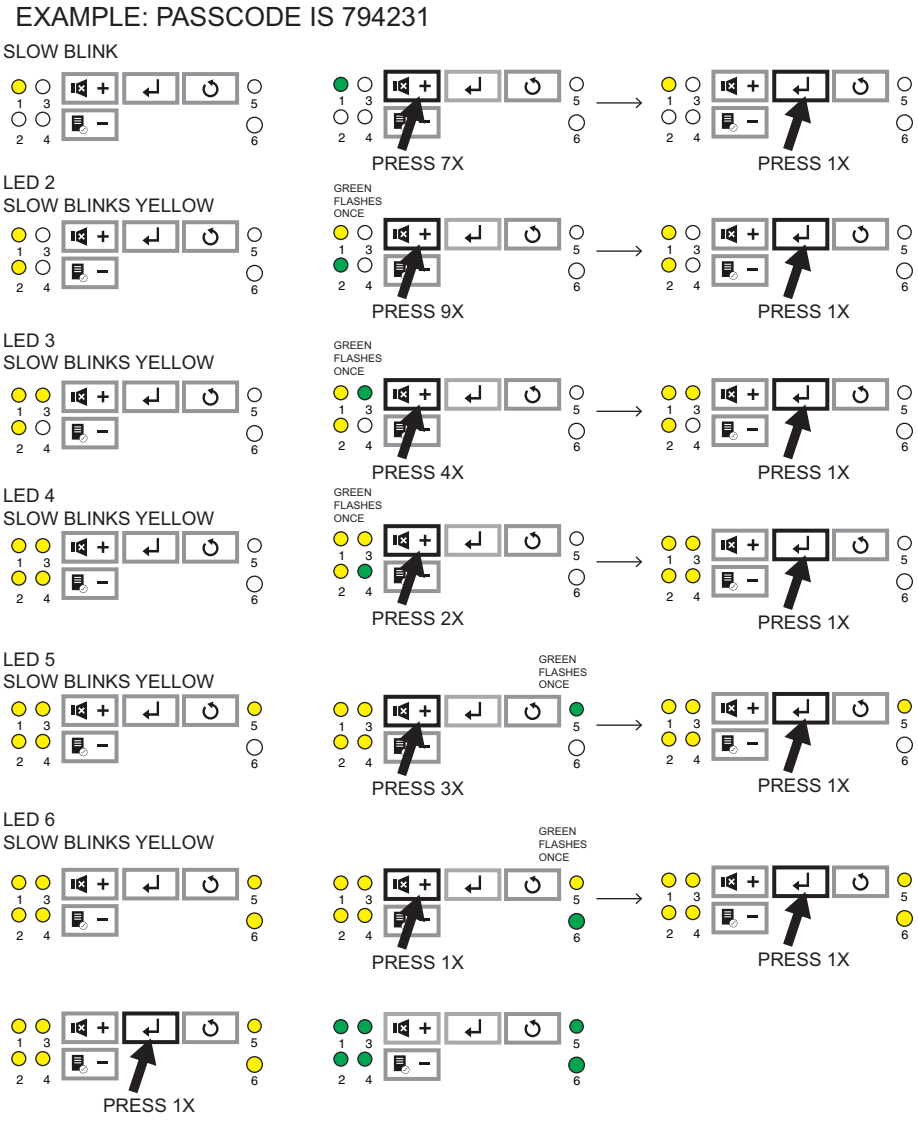
Certain actions related to operation and configuration of the Addressable FAAST FLEX are protected by use of a six digits passcode. To enter the passcode, the user must press the SILENCE/+ or TEST/- buttons to enter the six digits of the passcode. Once the digit has been entered, press the ENTER button to confirm the digit. For example, to enter a 3 you would press the SILENCE/+ button three times. If you pressed the SILENCE/+ button four times, and then pressed the TEST/- button once, that would also register as a 3. Once all six digits have been entered, press the ENTER button again to confirm entry.

| Button | | Action(s) |
|---|---|---|
| SILENCE/+ |  | Increments the current digit (if smaller than 9). |
| TEST/- |  | Decrements the current digit (if greater than 0). |
| RESET |  | Cancels changes to the current digit entry and prompts for the user to re-enter the digit. |
| ENTER |  | Confirms the current digit and the corresponding LED shows yellow. If all six digits have been confirmed and are correct, all LEDs will show green for 5 seconds. If incorrect, all LEDs will show red for 5 seconds. |

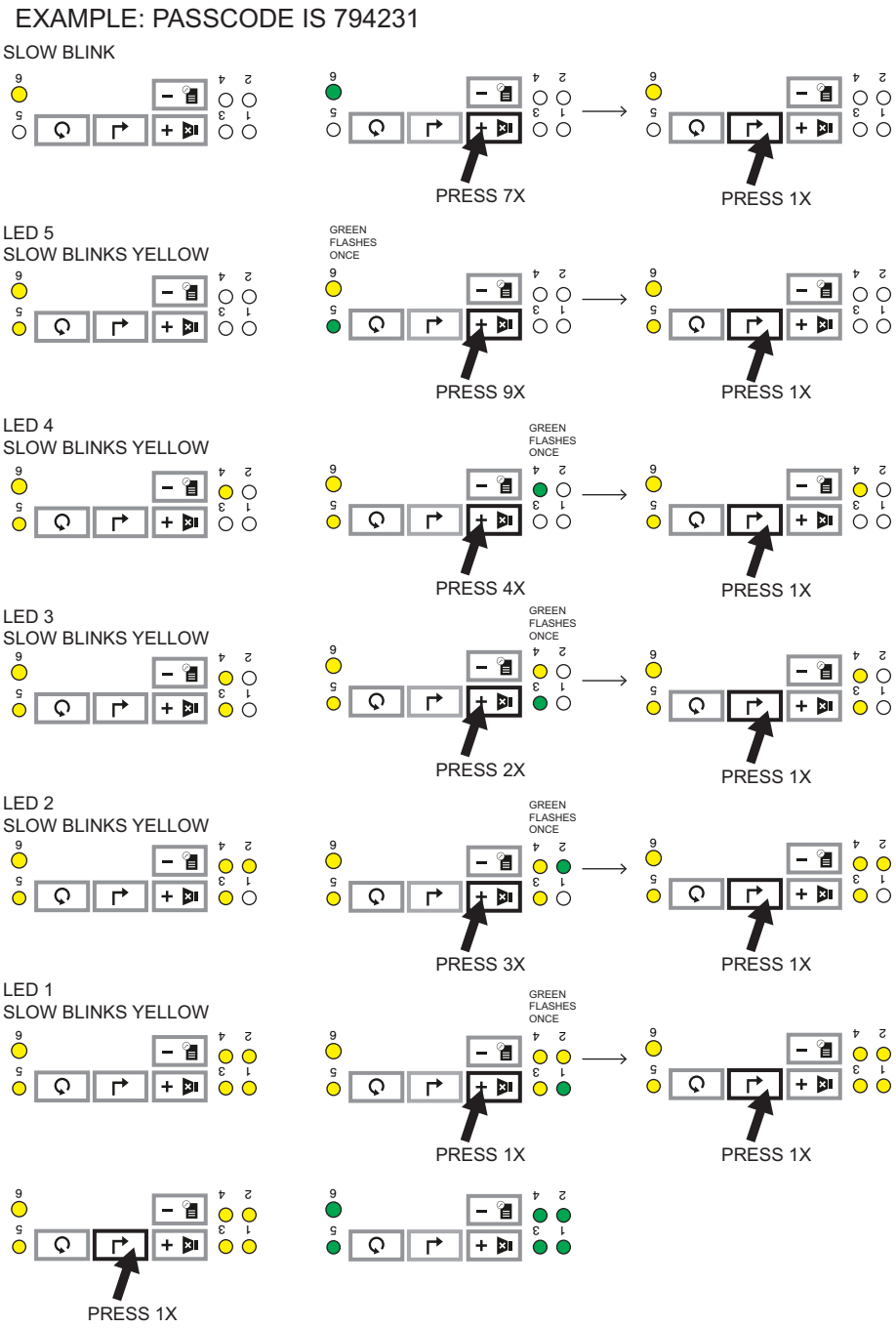
Access to some functions requires a passcode. Follow these steps to enter the passcode (see Figure 6-2):

**Note:** Passcodes are 6 digits long and digits from 0 to 9 are valid.

1. When you access a function that requires authentication, LED 1 will blink yellow waiting for the first digit (60 seconds timeout to cancel operation).
2. Using the SILENCE/+ or TEST/- buttons, enter the first digit of the passcode.
3. Press the ENTER button to confirm the first digit. LED 1 will be steady yellow and LED 2 will blink slow yellow. If not preceded with SILENCE/+ or TEST/- buttons, the digit will be 0.
4. Repeat the process until all six digits of the passcode have been entered.
5. After the sixth digit has been entered press enter to confirm and if the passcode is correct all six LEDs will show steady green for 5 seconds. If the passcode is incorrect, all six LEDs will show steady red for 5 seconds and the process must be restarted.




**Standard Mounting**




**Inverted mounting**

Figure 6-2: Entering Passcode Example

## 6.3.2 Changing the Passcode

**Example - Changing Passcode from 000000 to 123456**

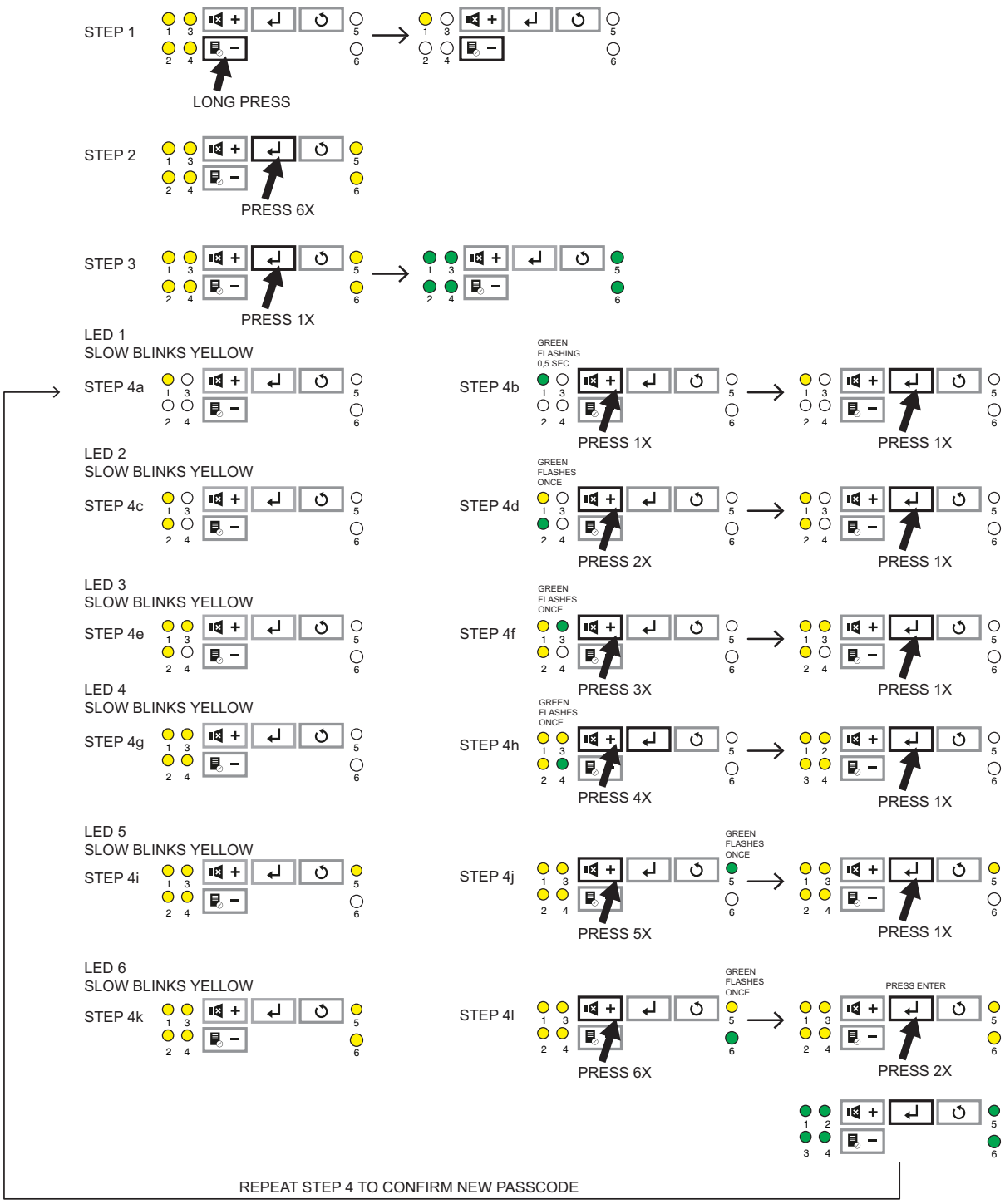
To change the passcode you must first enter the current passcode. Then you must enter the new passcode, and then re-enter the new passcode a second time to confirm that it is correct. The following procedure demonstrates changing the passcode from 000000 to 123456.

1. Long-press the TEST button to enter the CHANGE PASSCODE mode. LEDs 1, 2, 3 and 4 will flash yellow, and then LED 1 will slow blink yellow indicating that the device is waiting for entry of the first digit.

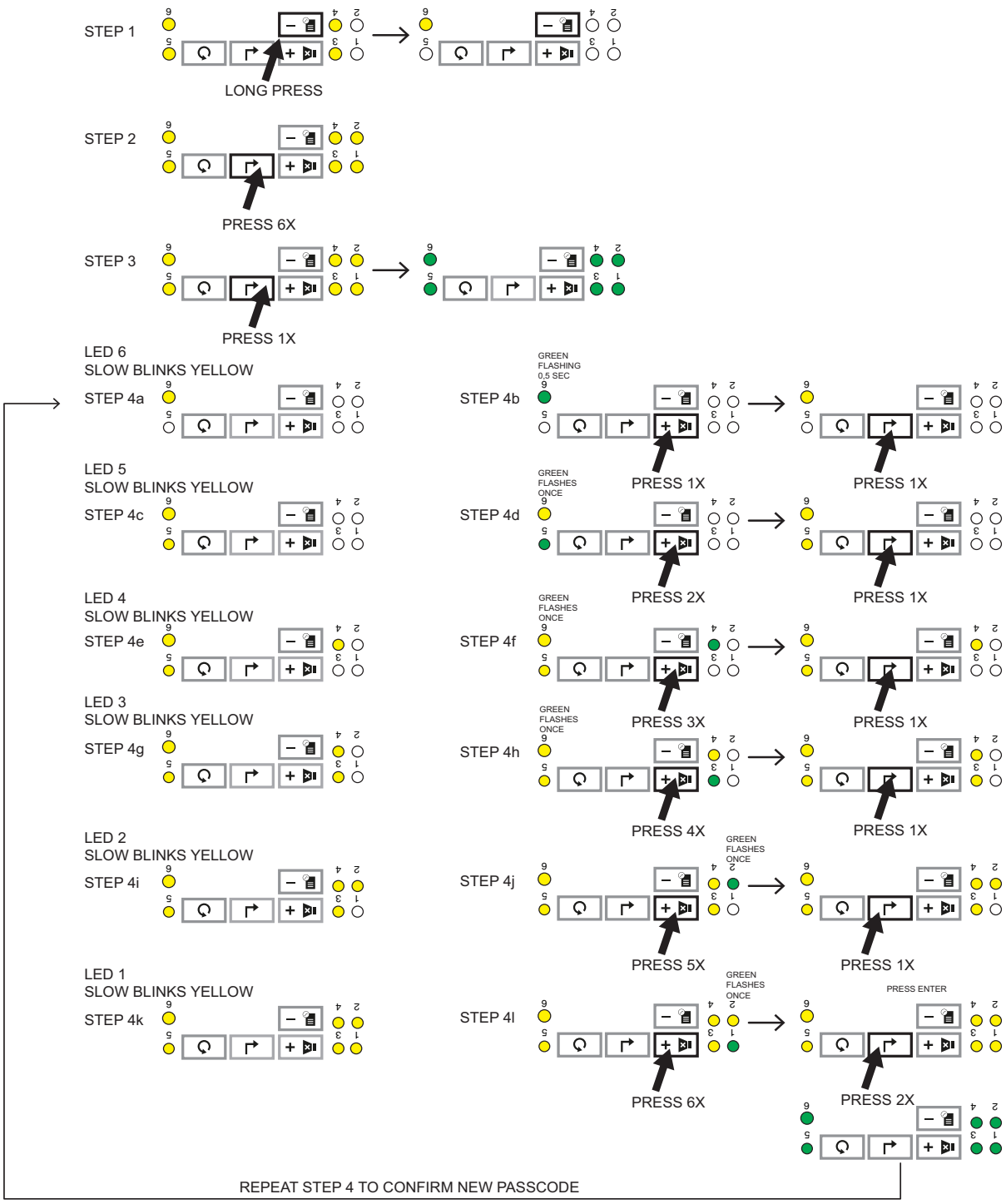
**Note:** The digit counter starts at 0, so pressing the ENTER button will record 0 as the current digit. The following table summarizes the actions of button presses during the procedure.

2. Press the ENTER button six times to enter the default passcode (000000). Each time you press the ENTER button, the LED corresponding to that digit will show steady yellow indicating the digit has been entered. Once the sixth digit is entered, all six LEDs will show steady yellow.
3. Press the ENTER button again to confirm the passcode entry. The LEDs will all show green for five seconds, then will go out.
4. LED 1 will show steady yellow, prompting you for the first digit of the new passcode. Enter the new passcode as follows:
   a. Press the SILENCE/+ button one time to enter 1 as the first digit. LED 1 will flash green as you press the SILENCE/+ button.
   b. Press the ENTER button to enter the first digit. LED 1 will show steady yellow.
   c. Press the SILENCE/+ button twice to enter 2 as the second digit. LED 2 will flash green as you press the SILENCE/+ button.
   d. Press the ENTER button to enter the second digit. LED 1 and LED 2 will show steady yellow.
   e. Press the SILENCE/+ button three times to enter 3 as the third digit. LED 3 will flash green as you press the SILENCE/+ button.
   f. Press the ENTER button to enter the third digit. LEDs 1, 2, and 3 will show steady yellow.
   g. Press the SILENCE/+ button four times to enter 4 as the fourth digit. LED 4 will flash green as you press the SILENCE/+ button.
   h. Press the ENTER button to enter the fourth digit. LEDs 1, 2, 3 and 4 will show steady yellow.
   i. Press the SILENCE/+ button five times to enter 5 as the fifth digit. LED 5 will flash green as you press the SILENCE/+ button.
   j. Press the ENTER button to enter the fifth digit. LEDs 1, 2, 3, 4, and 5 will show steady yellow.
   k. Press the SILENCE/+ button six times to enter 6 as the last digit. LED 6 will flash green as you press the SILENCE/+ button.
   l. Press the ENTER button to enter the last digit. All LEDs will show green for 2 seconds, and then will go out.
5. Repeat the procedure in step 4 to re-enter and confirm the new passcode.

**Note:** After three failed attempts to enter the passcode, the unit will return to WAIT mode. The user must wait 20 seconds before attempting to re-enter the passcode. Each subsequent attempt will increase the wait time by an additional 20 seconds.




**Standard Mounting**




**Inverted Mounting**

Figure 6-3: Changing Passcode

6. Exit with a new passcode.

### 6.3.3 Changing Configuration Mode

The device can be configured using three ways:

1. Buttons, dip-switches and LEDs
2. Setting dip-switches 3, 4, 5 and 10 through the Bluetooth app connected to the detector.
3. Setting dip-switches 3, 4 and 5 through the CIE

Follow these steps to change device configuration:

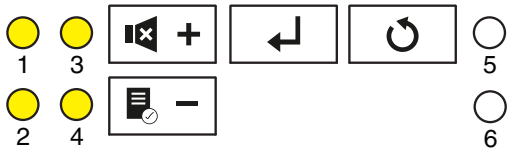
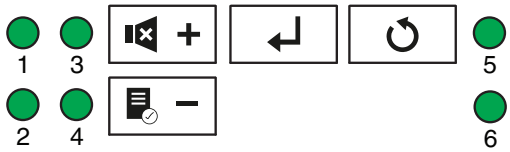
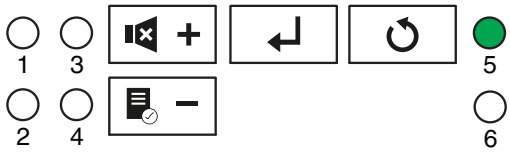
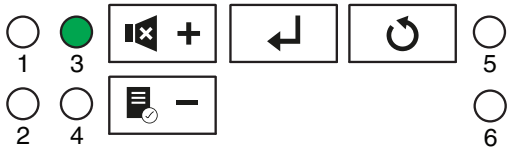
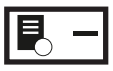
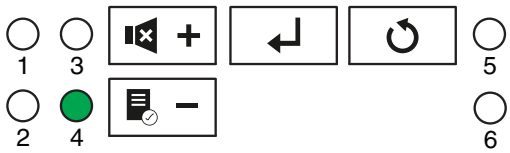
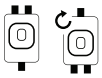
| Action | Button | LED Display | Description |
|---|---|---|---|
| While the unit is in WAIT mode, long press the ENTER button. | Long Press  |   | LEDs 1-4 will flash yellow and then go out. |
| Enter the current passcode. | |   | After passcode is entered correctly, all LEDs will show green. See section 6.3.1 Authenticating - Entering Passcode. |
| Change DIP switch settings as desired. | |   | LED 5 will slow blink green. |
| Increment current hour by 30 minuets ( for a max of +14 hours) | Short Press  |   | LED 3 blinks green every time user presses the button. |
| Decrement current hour by 30 minuets (for a max of -14 hours). | Short Press  |   | LED 4 blinks green every time user presses the button. |
| Press the ENTER button. The new configuration is saved and the device exits configuration mode. | Short Press  | | The device will restart with the new configuration active. |

Table 6-2: DIP Switch Configuration

| Switch | Icon | Setting | Position | Description |
|---|---|---|---|---|
| 1 | | Not Used | ON | Not Used |
| | | | OFF | Not Used |
| 2 |  | Aspirator Speed | ON | LOW aspirator speed |
| | | | OFF | HIGH aspirator speed |
| 3 |  | Configuration Mode | ON | Enables configuration using DIP switches |
| | | | OFF | Enables extended configutration using the SmartConfig app or Control Panel |
| 4 |  | Extended Configuration Mode | ON | Control Panel |
| | | | OFF | SmartConfig app |
| 5 |  | Device Mode | ON | Legacy mode |
| | | | OFF | Flex mode |
| 6 | | Not Used | ON | Not Used |
| | | | OFF | Not Used |
| 7 |  | Flow Fault Threshold | ON | Apply EN-54-20 flow fault criteria policy for reference flow |
| | | | OFF | ± 50% (not EN-54-20 compliant)[1] |
| 8 |  | Flow Fault Delay | ON | 30 seconds |
| | | | OFF | 250 seconds |
| 9 |  | Detector Orientation | ON | Standard |
| | | | OFF | Inverted |
| 10 |  | Bluetooth | ON | Disabled |
| | | | OFF | Enables access to SmartConfig app. If DIP Switch 1 if ON, you can monitor settings, to change the settings switch SW1 ON (Extended Mode) |

[1] Used on customer responsibility

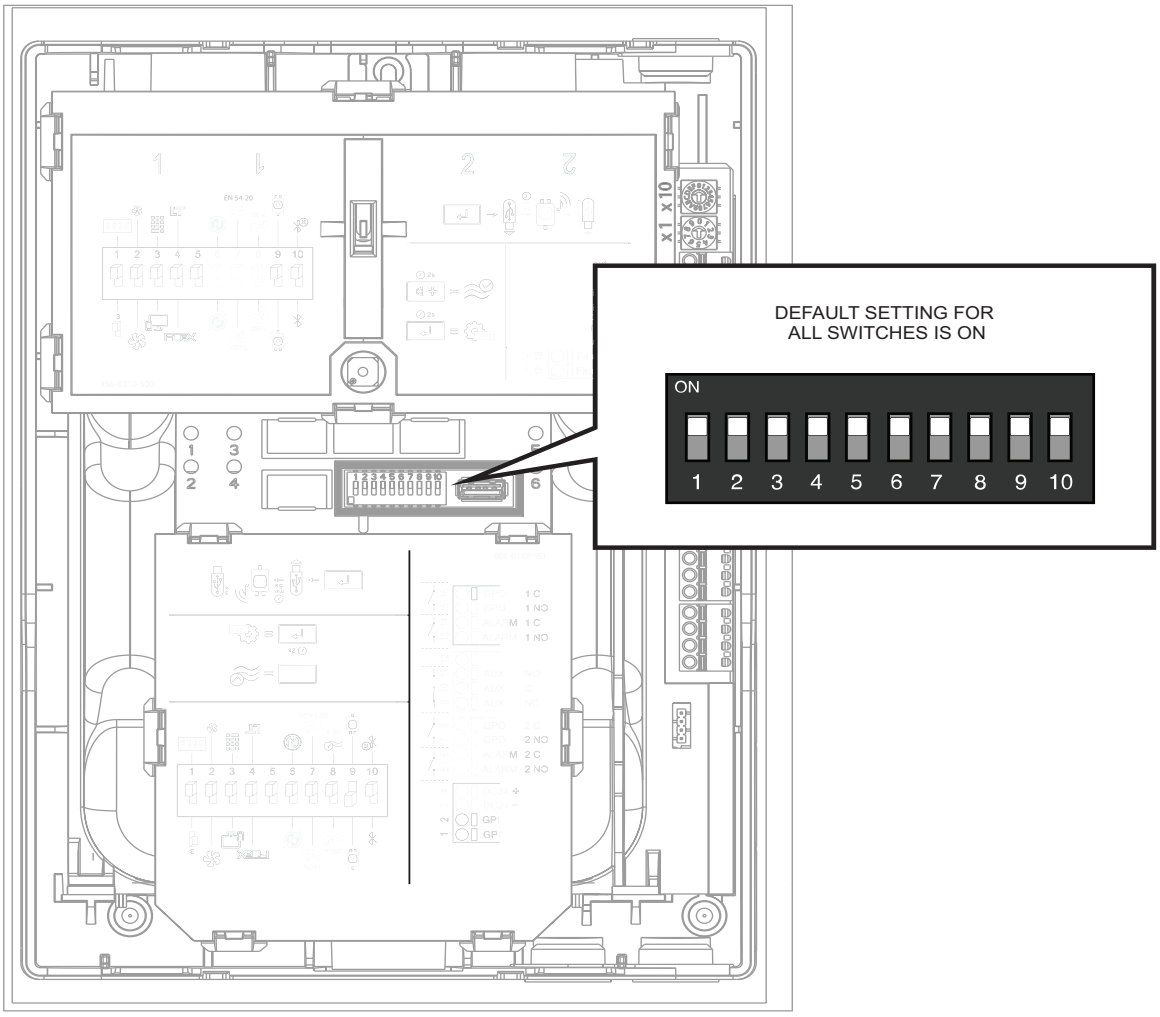



Figure 6-4: Configuration DIP Switches

**About Faults, Alerts, and Alarms**

The unit can signal two types of abnormal conditions: alerts (minor issues) and faults (major issues). Faults are indicated by the FAULT LED showing yellow, either blinking or steady ON. Some alerts or faults are common to both channels (e.g. aspirator fault), whilst others are only related to channel 1 or channel 2 for 2-channel devices (e.g. sensing head fault). If one or more faults occur, the FAULT LED indicates the most important fault, and the fault relays are activated accordingly.

Faults can be either latched or unlatched , based on configuration. If latched, the user must manually clear the fault by pressing the RESET button. User can configure a delay between flow fault condition and fault relay activation (default is 30 seconds) during which activation is aborted if the fault condition terminates.

As a factory default, in dual channel models, if a fault is related to both channels both relays are activated. The device logs all alerts and faults as well as the exit from fault or alert conditions. Alarms are raised when smoke levels exceed the limits established by the control panel configuration. Alerts and faults are visible in the log file (Refer to section 6.3.6 Event Logs).

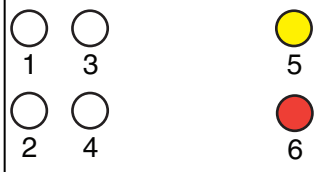
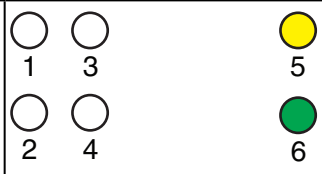
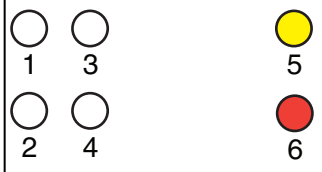
### 6.3.4 Normalize

Normalize procedure is used to set a new nominal flow reference based on the pipe network connected to device, with this procedure the two thresholds for maximum and minimum flow are re-calculated and changed according to the chosen tolerance.

Normalize procedure must be done during commissioning, when pipes are installed and drilled, to be sure that the flow obtained is considered similar to the reference by Addressable FAAST FLEX that will update the flow tolerance range accordingly with this value.

- If the flow is not normalized, the detector can report flow faults.
- If there is a change in the flow, we suggest checking if the are filters clean and pipeline's integrity before starting the normalization procedure.

**Note:** Before starting the NORMALIZE procedure, the pipe system should be connected and checked. There can be no blockages, open pipes, dirty filters, dust, or other obstructions. The device should be working for a minimum of 2 minutes and air flow must be stable.

| Action | Button | LED Display | Description |
|---|---|---|---|
| While the device is in WAIT mode, long press the SILENCE/+ button. ***(Enter the current passcode.)*** | Long Press  |   | LED 6 will flash red until the procedure is complete. |
| Once the NORMALIZE procedure is complete, the buzzer will sound for 0.5 seconds. LED 6 will indicate the result. | |   | LED 6 will show green if the NORMALIZE procedure completed successfully. |
| | |   | LED 6 will show red if the NORMALIZE procedure was unsuccessful. |
| Unit will return to WAIT mode. | | | |

**Note:** If the cover is closed during the NORMALIZE procedure, then the procedure is aborted and the device will return to NORMAL mode.

### 6.3.5 Resetting Alarms and Faults

To reset any alarm and/or fault conditions press the RESET button. You will be prompted to enter the passcode. Once the passcode has been successfully entered,all latched alarms and faults are reset (both LEDs and relays) and the device returns to WAIT mode.

## 6.3.6 Event Logs

Follow these steps to download event log files to a USB drive:

**Note:** The USB drive must be formatted in FAT32 format (quick formatting isn't available), and must be completely empty, and the volume name must be no more than seven characters.

1. While the device is in WAIT mode, press the ENTER button and insert the USB drive. The POWER LED will fast blink green to indicate that data is being written to the USB stick. Once the LOGREPOR.TXT file has been successfully downloaded, the device will emit a buzzer sound and the POWER LED will be steadily lit green.
2. Remove the USB drive. The USB drive will contain a new log file named LOGREPOR.TXT.

**Data Log Header**

The log header is an important part of the log file as it gives general details about the detector model, manufacturing date, configuration mode and relay status, below is the list of sections in the log header:

- **INFO:** this section gives general details about the model, the firmware version serial number, etc.
- **SETTINGS:** this section shows details about the configuration mode, GPI state, aspirator speed, etc.
- **STATE:** this section records the instantaneous status of the detector.

HEADER reading for salient data: document downloaded from device in date October, 16 2024, is a dual channel manufactured in date July, 31 2024 following EN54-20 standard, DIP switches configuration is 1111111111, reference flow 20.8 l/min for channel 1 and 17.9 l/min for channel 2, GPI not supervised.

```
-----------------------------------------------
FAAST FLEX Diagnostics   23/10/25 11:59:39
-----------------------------------------------

--INFO-----------------------------------------
Device type:             Intelligent
Device model:            030
Standard:                EN 54-20
Number of channels:      2
Enabled channels:        2
Serial number:           251001095741030
Manufacturing date GMT:  01/10/25 09:57:41
HW version:              3
Mech. version:           2
ASD Boot version:        0.0.0.21
ASD FW version:          10.0.0.100
Module Boot version:     0.0.0.3
Module FW version:       10.4.0.41
Sensor 1 serial number:  10 0A 19 24
Sensor 1 FW version:     1.10.25.10
Sensor 1 address:        12
Sensor 2 serial number:  10 0A 19 25
Sensor 2 FW version:     1.10.25.10
Sensor 2 address:        13

--SETTINGS-------------------------------------
Configuration:           Out of the box
Last good DipSW conf:    1111111111
Second last DipSW conf:  0000000000
Third last DipSW conf:   0000000000
Detector orientation:    Upright
Reference flow 1:          46.7 l/min
Minimum flow 1:            39.0 l/min
Maximum flow 1:            54.4 l/min
Reference flow 2:          43.1 l/min
Minimum flow 2:            37.6 l/min
Maximum flow 2:            48.7 l/min
GPI mode:                Not supervised
GPI normal state:        OPEN
GPI change state action: 2
Blower speed:            2
Blower correction:       -4 01/10/25

--STATE----------------------------------------
Device in fault:         No
Power supply:            26.2
Disabled:                No
GPI:                     OPEN
Relay ALARM 1:           OPEN
Relay GPO 1:             OPEN
Relay ALARM 2:           OPEN
Relay GPO 2:             OPEN
Relay Main FAULT:        CLOSED
Relay Aux FAULT:         CLOSED

Record | dd/mm/yy hh:mm:ss | Event | Event description                | Temp. 1 | Temp. 2 | Flow 1 | Flow 2 | Blower RPM |
     1 | 23/10/25 11:58:18 |     1 | Power on                         |       - |       - |      - |      - |          - |
     2 | 23/10/25 11:58:42 |    30 | Normal                           |     +24 |     +25 |   48.0 |   43.8 |       3625 |
     3 | 23/10/25 11:59:33 |     2 | Cover opened                     |     +24 |     +25 |   47.3 |   43.8 |       3622 |
     4 | 23/10/25 11:59:33 |    31 | Wait                             |     +24 |     +25 |   47.3 |   43.8 |       3622 |
     5 | 23/10/25 11:59:39 |    24 | Download started                 |     +25 |     +25 |   48.0 |   44.4 |       3622 |
```

Figure 6-5: Data Log Structure

**LOG Desc**

Row 1) device power ON
Row 2) Device entered Normal mode
Row 3) Front cover opened by operator
Row 4) Device entered Wait mode
Row 5) Log requested pushing ENTER button

Figure 6-5 shows the structure of the LOGREPOR.TXT log file. Table 6-3 describes the information contained in the log.

Table 6-3: Log Event Description

| Event Codes | Description | Event Codes | Description |
|---|---|---|---|
| 0 | None | | |
| 1 | Power on | | |
| 2 | Cover opened | | |
| 3 | Cover closed | | |
| 4 | Password entry started | | |
| 5 | Password modified | | |
| 6 | Password correct | | |
| 7 | Password incorrect | | |
| 8 | To disable | | |
| 9 | Exit from disable | | |
| 10 | Test started | | |
| 11 | Test completed | | |
| 12 | Test log written | | |
| 15 | GPI reset device | | |
| 16 | GPI to disable | | |
| 17 | GPI exit from disable | | |
| 18 | Normalize start | | |
| 19 | Normalize successfully completed | | |
| 20 | Normalize failed, flow not stable | | |
| 21 | Normalize failed, flow out of range | | |
| 22 | Reset alarms and faults using the keypad | | |
| 23 | Change configuration request | | |
| 24 | Download started | | |
| 25 | Download Complete | | |
| 26 | Download failed | | |
| 27 | Buzzer disabled | | |
| 29 | Protection | | |
| 30 | Normal | | |
| 31 | Wait | | |
| 32 | Service | | |
| 35 | Factory restore done | | |
| 36 | Factory restore failed | | |
| 37 | Password recovery | | |
| 38 | Flow compensation started | | |
| 39 | Flow compensation completed | | |
| 40 | Change configuration completed | | |
| 41 | Exit from configuration after timeout | | |

| Event Codes | Description | Event Codes | Description |
|---|---|---|---|
| 42 | Exit from password entering for timeout | | |
| 43 | Exit from password change for timeout | | |
| 44 | Time changed | | |
| 45 | Exit from disable after timeout | | |
| 46 | Password change requested | | |
| 47 | Exit from test EN for Bluetooth request | | |
| 48 | Trend log | | |
| 50 | Test failed | | |
| 54 | Aspirator replacement started | | |
| 55 | Aspirator replacement aborted | | |
| 56 | Before replacement the aspirator correction was -6 | | |
| 57 | Before replacement the aspirator correction was -5 | | |
| 58 | Before replacement the aspirator correction was -4 | | |
| 59 | Before replacement the aspirator correction was -3 | | |
| 60 | Before replacement the aspirator correction was -2 | | |
| 61 | Before replacement the aspirator correction was -1 | | |
| 62 | Before replacement the aspirator correction was 0 | | |
| 63 | Before replacement the aspirator correction was 1 | | |
| 64 | Before replacement the aspirator correction was 2 | | |
| 65 | Before replacement the aspirator correction was 3 | | |
| 66 | Before replacement the aspirator correction was 4 | | |
| 67 | Before replacement the aspirator correction was 5 | | |
| 68 | Before replacement the aspirator correction was 6 | | |
| 69 | Aspirator replacement timeout | | |
| 71 | Abort configuration by button | | |
| 72 | Abort configuration by cover | | |
| 73 | Manual pairing started | | |
| 74 | Sound pairing started | | |
| 75 | Bluetooth connected | | |
| 76 | Bluetooth disconnected | | |
| 77 | Token by Bluetooth App is incorrect | | |

| Event Codes | Description | Event Codes | Description |
|---|---|---|---|
| 78 | Token by Bluetooth App is correct | | |
| 79 | Data-flash parameter is out of range | | |
| 80 | Normalization failed for cover closure | | |
| 82 | Normalization failed for data Flash error | | |
| 83 | Protection due to under-voltage | | |
| 86 | Module boot requested | | |
| 87 | Firmware release mismatch | | |
| 90 | Firmware update requested | | |
| 91 | Firmware update succeeded | | |
| 92 | Firmware update failed due to generic error | | |
| 93 | Firmware update failed due to USB drive not found | | |
| 94 | Firmware update failed due to update package not valid | | |
| 95 | Firmware update failed due to Flash writing error | | |
| 96 | Firmware update failed due to module update error | | |
| 97 | Firmware update failed due to module update timeout | | |
| 98 | Firmware update failed due to USB reading error | | |
| 103 | Bluetooth fault | 1103 | Exit from Bluetooth fault |
| 104 | GPI external fault[1] | 1104 | Exit from GPI external fault |
| 105 | CH1 ultrasonic circuit fault | 1105 | Exit from CH1 ultrasonic circuit fault |
| 106 | CH1 smoke sensor communication fault | 1106 | Exit from CH1 smoke sensor communication fault |
| 107 | Aspirator fault | 1107 | Exit from aspirator fault |
| 109 | Ch1 low flow fault | 1109 | Exit from CH1 low flow fault |
| 110 | Ch1 high flow fault | 1110 | Exit from CH1 high flow fault |
| 111 | CH2 ultrasonic circuit fault | 1111 | Exit from CH2 ultrasonic circuit fault |
| 112 | CH2 smoke sensor communication fault | 1112 | Exit from CH2 smoke sensor communication fault |
| 114 | Ch2 low flow fault | 1114 | Exit from CH2 low flow fault |
| 115 | Ch2 high flow fault | 1115 | Exit from CH2 high flow fault |
| 116 | Overvoltage error[2] | | |
| 117 | Unauthorized configuration change | | |
| 118 | Data Flash fault[2] | | |
| 119 | Memory Fault[3] | | |

[1] If GPI is configured as FAULT

[2] Switch into PROTECTION mode

[3] Switch into SERVICE mode

| Event Codes | Description | Event Codes | Description |
|---|---|---|---|
| 122 | Module communication fault | 1122 | Exit from module communication fault |
| 127 | Buzzer enabled | | |
| 129 | ASD EEPROM operation failure | | |
| 130 | CH1 sensor replaced | | |
| 131 | CH2 sensor replaced | | |
| 201 | Read/write date alert | 1201 | Exit from read/write date alert |
| 202 | Invalid date alert | 1202 | Exit from invalid date alert |
| 203 | CH1 High Temperature Alert | 1203 | Exit from CH1 high temperature alert |
| 204 | CH1 Low Temperature Alert | 1204 | Exit from CH1 low temperature alert |
| 205 | CH2 High Temperature Alert | 1205 | Exit from CH2 high temperature alert |
| 206 | CH2 Low Temperature Alert | 1206 | Exit from CH2 low temperature alert |
| 207 | Low power alert | | |
| 213 | Maintenance alert | 1213 | Exit from maintenance alert |
| 214 | Module EEPROM fault | 1214 | Exit from module EEPROM fault |
| 302 | Alarm CH1 | 1302 | Exit from alarm CH1 |
| 304 | Alarm CH2 | 1304 | Exit from alarm CH2 |
| 351 | Flowmeter calibration started | | |
| 352 | Flowmeter calibration failed, invalid input | | |
| 353 | Flowmeter 1 calibration failed | | |
| 354 | Flowmeter 2 calibration failed | | |
| 355 | Flowmeter 1 calibration succeeded | | |
| 356 | Flowmeter 2 calibration succeeded | | |
| 1401 | CH1 Alarm relay unlatched | | |
| 1402 | CH1 Alarm relay latched | | |
| 1403 | CH2 Alarm relay unlatched | | |
| 1404 | CH2 Alarm relay latched | | |
| 1415 | General fault relay for temperature is unset | | |
| 1416 | General fault relay for temperature is set | | |
| 1419 | Aspirator speed set to level 0 | | |
| 1420 | Aspirator speed set to level 1 | | |
| 1421 | Aspirator speed set to level 2 | | |
| 1422 | Aspirator speed set to level 3 | | |
| 1423 | Aspirator speed set to level 4 | | |
| 1424 | Aspirator speed set to level 5 | | |
| 1470 | GPI action for open set as none | | |
| 1471 | GPI action for open set as device reset | | |
| 1472 | GPI action for open set as external fault | | |
| 1473 | GPI action for open set as Disable | | |
| 1474 | GPI action for short set as none | | |
| 1475 | GPI action for short set as device reset | | |

| Event Codes | Description | Event Codes | Description |
|---|---|---|---|
| 1476 | GPI action for short set as external fault | | |
| 1477 | GPI action for short set as Disable | | |
| 1478 | GPI change state action set as none | | |
| 1479 | GPI change state action set as device reset | | |
| 1480 | GPI change state action set as external fault | | |
| 1481 | GPI change state action set as Disable | | |
| 1482 | GPI set as not supervised | | |
| 1483 | GPI set as supervised | | |
| 1484 | GPI normal state set as open | | |
| 1485 | GPI normal state set as short | | |
| 1488 | Flow fault threshold set to EN54-20 limit | | |
| 1489 | Flow fault threshold set to custom limit | | |
| 1496 | Flow fault delay set lower than 30 seconds | | |
| 1497 | Flow fault delay set to equal or greater than 30 seconds | | |
| 1498 | Reset alarms and faults by App | | |
| 1499 | Disable Timeout set to 0 minutes | | |
| 1500 | Disable Timeout set to a value different from 0 minutes | | |
| 1502 | Aspirator replacement completed | | |
| 1503 | Restart by SW command | | |
| 1507 | Restart after configuration change | | |
| 1508 | Device restart after DATAFLASH restore | | |
| 1510 | Reset alarms and faults by GPI | | |
| 1511 | Reset alarms and faults by FACP | | |
| 1533 | GPI action for open set as alarms and faults reset | | |
| 1534 | GPI action for short set as alarms and faults reset | | |
| 1535 | GPI change state action set as alarms and faults reset | | |
| 1570 | General fault relay unlatched | | |
| 1571 | General fault relay latched | | |
| 1572 | Auxiliary fault relay unlatched | | |
| 1573 | Auxiliary fault relay latched | | |

### 6.3.7 DISABLE Procedure

When the device is DISABLED, it will report this condition via General and Auxiliary fault relays. It will not report any alarm conditions via relays while LED functions will remain active. To indicate that the device is DISABLED, all the LEDs will slow flash yellow (once every 10 seconds). To disable the device, long press (2 seconds) the RESET button. LEDs 1, 2, 3, and 4 will show steady yellow to confirm the command. Once the passcode has been successfully entered, the device is DISABLED. Repeating this procedure will return the device to normal operation. **Powering off the device will NOT exit the DISABLE procedure.**

The DISABLE procedure has a timeout of 60 minutes. When this timeout expires, the device will exit automatically from the DISABLE procedure.

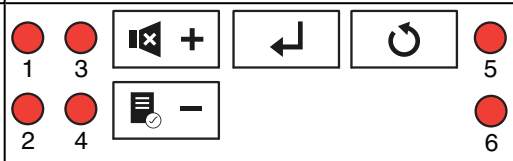
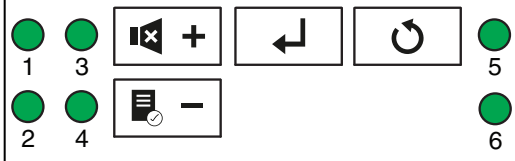
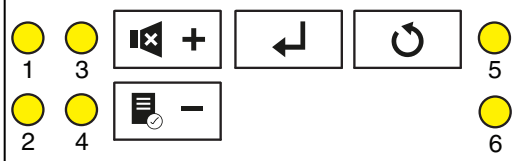
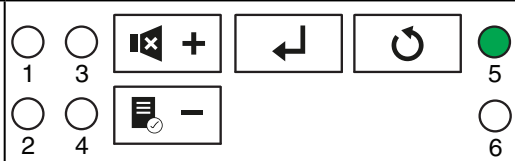
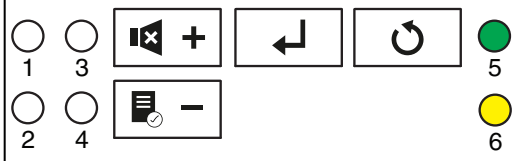
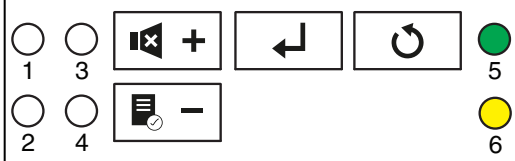
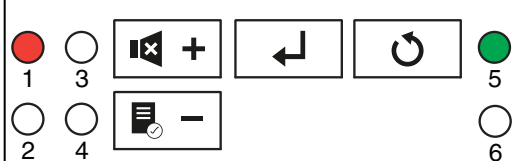
This command will not be available through a long press on RESET button if the GPI is configured to enter and exit the DISABLE procedure.

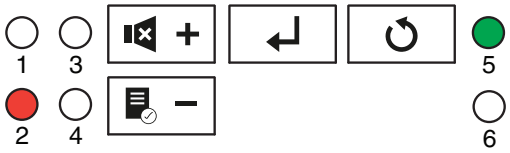
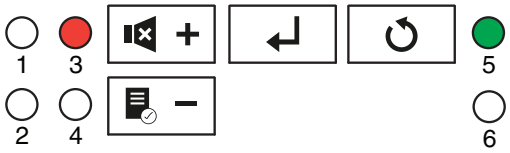
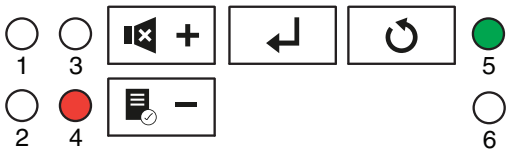
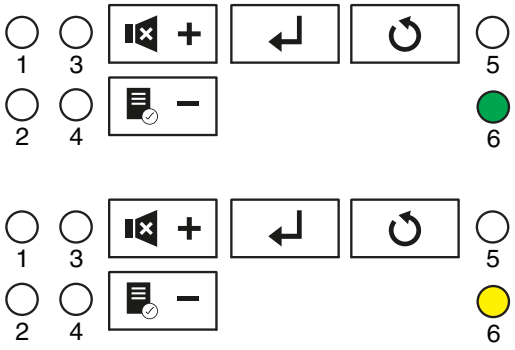
## 6.3.8 Test Mode

In TEST mode, the device will perform a self-test. As tests are executed the user must confirm each step of the test before it continues.

Follow these steps to enter TEST mode execute the self-test.

**Note:** If any of these steps do NOT complete correctly, press the SILENCE/+ button to indicate FAIL condition for the test step. If 30 seconds pass without pressing TEST, the test fails.

| Action | Button | Action(s) | Description |
|---|---|---|---|
| Short press the TEST button. /+ | Short Press |  | All LEDs will show red in the following sequence: 1, 3, 5, 6, 4, 2. |
| Press the TEST button to confirm test PASS or press Silence to enter test FAIL. | Short Press |  | All LEDs will show green in the following sequence: 1, 3, 5, 6, 4, 2. |
| Press the TEST button to confirm test PASS or press Silence to enter test FAIL. | Short Press |  | Buzzer will sound for 1 second and all LEDs will show yellow in the following sequence: 1, 3, 5, 6, 4, 2. |
| Press the TEST button to confirm test PASS or press Silence to enter test FAIL. | Short Press |  | LED 5 shows green, indicating normal condition (no alarms or faults). |
| Press the TEST button to confirm test PASS or press Silence to enter test FAIL. | Short Press |  | LED 5 shows green and LED 6 shows yellow to indicate Fault condition on Channel 1. General relay activation can be checked. |
| Press the TEST button to confirm test PASS or press Silence to enter test FAIL. | Short Press |  | LED 5 shows green and LED 6 shows yellow to indicate Fault condition on Channel 2. (Test step must be completed even on Single Channel units). Auxiliary relay activation can be checked. |
| Press the TEST button to confirm test PASS or press Silence to enter test FAIL. | Short Press |  | LED 1 shows red and LED 5 shows green to indicate Alarm condition on Channel 1. Alarm 1 relay activation can be checked. |

| Action | Button | Action(s) | Description |
|---|---|---|---|
| Press the TEST button to confirm test PASS or press Silence to enter test FAIL. | Short Press |  | LED 2 shows red and LED 5 shows green. GPO 1 relay activation can be checked. |
| Press the TEST button to confirm test PASS or press Silence to enter test FAIL. | Short Press |  | LED 3 shows red and LED 5 shows green to indicate Alarm condition on Channel 2. Alarm 2 relay activation can be checked (only for dual channel units). |
| Press the TEST button to confirm test PASS or press Silence to enter test FAIL. | Short Press |  | LED 4 shows red and LED 5 shows green. GPO 2 relay activation can be checked (only for dual channel units). |
| Press the TEST button to confirm test PASS or press Silence to enter test FAIL. | Short Press |  | LED 6 shows green if all tests PASS.<br><br>LED 6 shows yellow if any step FAILs. |
| Press the RESET button to exit TEST mode or Insert a USB drive and press the ENTER button to download test results. | Short Press<br><br>Short Press | | The results of the test will be written to the USB drive in the file DIAGTEST.txt and the device will beep to provide an audible confirmation that the process is complete. |

**DIAGTEST.TXT File Format**

The DIAGTEST.TXT file will contain the result of the test in the format shown below.

| 1CH | 2CH |
|---|---|
| Self inspection report<br>Date and time: 13/11/24 12:57:17<br>Serial number:30Ø 10 24 14 13 12 000<br>Red LEDs: passed<br>Green LEDs: passed<br>Yellow LEDs: passed<br>Normal state: passed<br>FAULT: passed<br>AUX FAULT: passed<br>CH1 alarm: passed<br>CH2 GPO: passed | Self inspection report<br>Date and time: 13/11/24 14:02:42<br>Serial number:31 07 24 10 28 06 000<br>Red LEDs: passed<br>Green LEDs: passed<br>Yellow LEDs: passed<br>Normal state: passed<br>FAULT: passed<br>AUX FAULT: passed<br>CH1 alarm: passed<br>CH1 GPO: passed<br>CH2 alarm: passed<br>CH2 GPO : passed |

## 6.4 PROTECTION Mode

The device enters PROTECTION mode in the event of power supply over-voltage or under-voltage.

In PROTECTION mode, the POWER LED is steady red. The device switches off all peripherals and communications and reports fault by activating General and Auxiliary fault relays (the unit reports fault through relays only). The only way to exit PROTECTION mode is to completely power off the device and then power it back up.

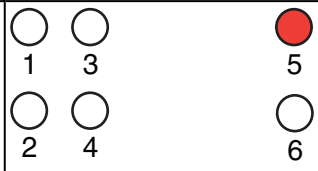
## 6.5 SERVICE (or STANDBY) Mode

If the cover is left open for more than 60 seconds the device enters SERVICE Mode and the POWER LED blinks red (fast blink). This condition will be reported via General and Auxiliary fault relays. During this working mode (also referred to as STANDBY Mode), the device switches off the aspirator, stops monitoring flows and sensing elements. No alarms or action will be shown on the LEDs, relays or buzzer.

Additionally, USB and buttons sensing are turned off while Bluetooth is enabled to report SERVICE mode only. In SERVICE mode, users can initiate 3 procedures: password recovery process, DATAFLASH factory reset and aspirator spare part replacement. The 3 procedures are explained in the following sections.

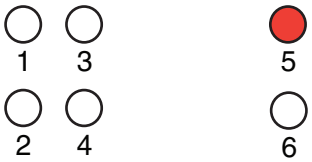
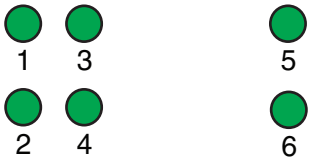
### 6.5.1 Passcode Recovery

In the event the passcode has been lost, perfom the following steps to recover the passcode .

| Action | Button | LED Display | Description |
|---|---|---|---|
| Open cover and allow device to enter SERVICE Mode (60 second wait). | |   | LED 5 will fast blink red when the device enters SERVICE Mode. |
| Plug a formatted USB drive into the port. | | | |
| Long press the ENTER button. | Long Press  | | LED 5 will go out and LEDs 1, 2, 3, and 4 will flash yellow, and the buzzer will sound to indicate that the reset file has been written to the USB drive. |
| Email the file from the USB drive to your device supplier. The passcode will be recovered by Morley Customer Support and will be communicated by the vendor back to you via email or telephone. | | | |

### 6.5.2 DATAFLASH Factory Reset

To perform a reset to the default DATAFLASH configuration, perform the following steps.

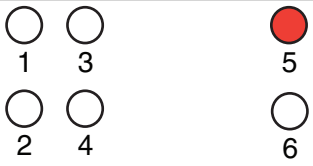
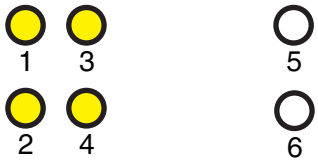
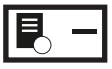
| Action | Button | LED Display | Description |
|---|---|---|---|
| Open cover and allow device to enter SERVICE Mode (60 second wait). | |   | LED 5 will fast blink red when the device enters SERVICE Mode. |
| Set all DIP Switches to ON position. | | | |
| Long press the RESET button. | Long Press  | | LED 5 will go out and LEDs 1, 2, 3, and 4 will flash yellow, and the buzzer will sound to indicate that the reset procedure has been started. |
| Enter the passcode. | | | Once the passcode is entered, the device will be reset to the EEPROM factory settings.<br>**Note:** The passcode is NOT changed. |
| | |   | All LEDs will show green for 2 seconds to indicate the reset was successful. |

If the LEDs show red, repeat the process by long pressing the RESET button again. This can happen in an undervoltage situation.

**Note:** If the reset procedure fails a second time the device is corrupted and must be replaced with a new unit.

### 6.5.3 Aspirator Replacement Procedure

In case of malfunctioning aspirator, the user can purchase a new one and replace it. Every aspirator has a correction parameter. This parameter is in the range from -6 to +6. This operation can be done via the Honeywell SmartConfig App or using buttons as follows:

| Action | Button | LED Display | Description |
|---|---|---|---|
| Open cover and allow device to enter SERVICE Mode (60 second wait). | |  | LED 5 will fast blink red when the device enters SERVICE Mode. |
| Long press the TEST button | Long Press  |  | Power LED will turn off and LEDs 1, 2, 3 and 4 will flash yellow. |
| Enter the passcode | | | Once the passcode is entered, the LEDs show the current value of the aspirator correction:<br>• If the value is 0, LED 1 will flash yellow.<br>• If the value is not 0 the device will light up the correspondent number of LEDs.<br>If the value is positive (eg. +3), the LEDs will flash green, if it is negative (eg. -3), the LEDs will flash red. |
| Short press the SILENCE button (to increase the correction value) or TEST button (to decrease the correction value) |  or  | | Change the aspirator correction value by either increasing or decreasing the current value one at a time.<br>The LEDs show the current value selected |
| Short press the ENTER button | Short Press  | | The new configuration is confirmed. |
| Short press the RESET button | Short Press  | | The Configuration change will be discarded, and the device restarts and performs INITIALIZATION. |
| To verify the aspirator configuration parameter, download the internal LOG. | | | |

# 7 Serial Loop Communication

The device communicates with the CIE (Fire Panel) via a proprietary loop protocol and must only be connected to a Morley control panel.

As a factory default, for each channel the unit will report smoke alarm and sensor information to a sensor address and general alerts and faults on a module address.

The address of module and associated sensor is set by means of rotary switches located close to the connectors of the unit. Use a screwdriver to rotate the wheels to the desired address.

The selected address refers to channel 1. On dual channel units, the device assigns the next (+1) module address to channel 2 automatically. Hence for a dual channel device, address 159 is not valid for channel 1. For control panels that use only 99 addresses, 99 is invalid for channel 1.

The sensors communicate with the fire panel through the loop connection whether the 24VDC power supply is On or OFF. While, the module address will only respond to a panel poll when the unit is in Normal mode with the 24 VDC power supply ON.

For each channel a single tri-colour LED on the unit indicates the status of the module. In normal conditions, the LED can be set by command from the control panel to blink green when the module is polled. If a fault is detected on the channel, the LED will blink yellow if enabled on the control panel.

When a short circuit is detected on the loop to either side of the unit, both module LEDs are switched to show a constant yellow light.

For each channel a single tri-colour LED on the unit indicates the status of the sensor. In normal conditions, the LED can be set by command from the control panel to blink green when the sensor is polled. In the case of a fire alarm, the LED is switched ON constant red by panel command.

The device is provided with short circuit monitoring and isolators on the addressable loop.

Please refer to the control panel manufacturers installation manual for detailed system information.

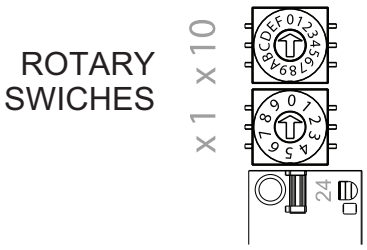



Figure 7-1: Rotary Switches

# 7.1 Remote Indicator

The device is equipped with an on-board remote indicator to signal its alarm or fault status (max 22.5V / 10.8mA @24V).

It is used as an indicator of the status of the device when it is segregated in a place that does not allow the on-board LEDs to be seen.

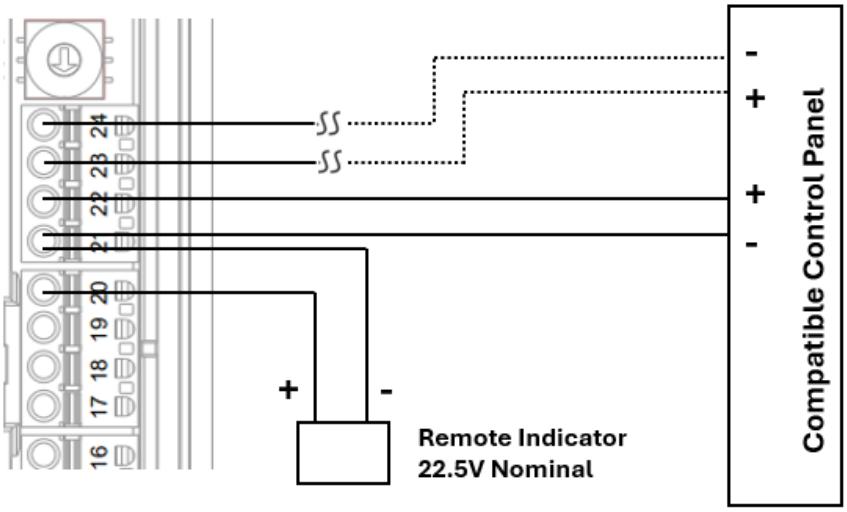



Figure 7-2: Remote Indicator Cabling (Terminals 21 and 20)

Table 7-1: Remote Indicator Behavior

| Conditions | Behaviors |
|---|---|
| Device in alarm state | Remote indicator steady on |
| Device in fault state | Continuously 1 second steady on, two seconds off |
| Device polled by the control panel | Remote indicator blink |
| None of above conditions | Remote indicator off |

# 8 Maintenance

## 8.1 Sensing Module Replacement (FLX-SP-01NG)

1. Remove cover (see Figure 3-4).

**Note:** The sensor cover and the rubber gasket may stick together when removing the sensor cover. Some effort may be required to pull the sensor cover off.

2. Using a small screwdriver, release six locking tabs, and remove Sensing Module Cover (see Figure 8-1).
3. Press two latches inward to release sensor, and remove Sensing Module.
4. Install the replacement Sensing Module.
5. While pressing down on Sensing Module, push two latches outward to lock it in place.
6. Replace Sensing Module Cover and press down to engage locking tabs.
7. Check and ensure that all six tabs are secured.
8. Replace cover.

**Notes:**
- Follow local codes and standards to recycle the old sensing module.
- The image shown below is for illustration purposes only and may not be an exact representation of the unit.

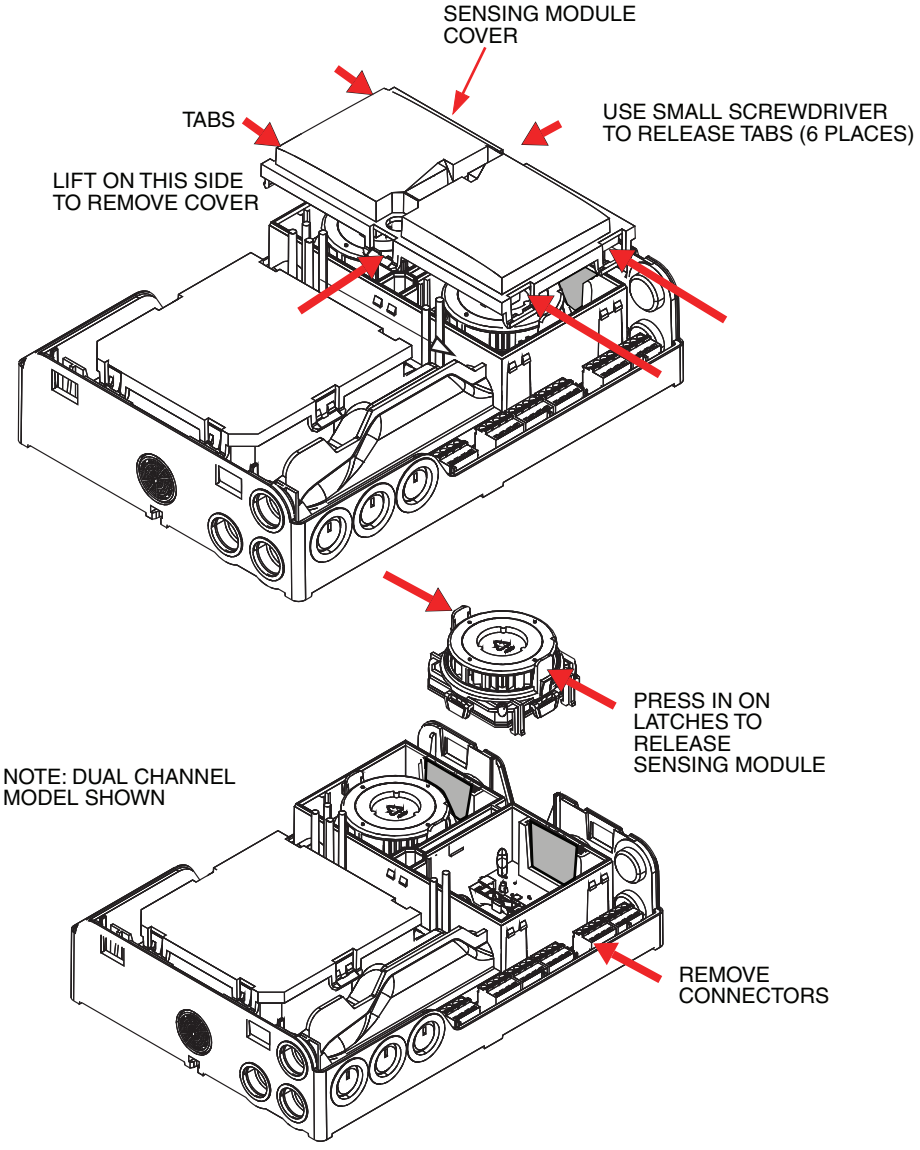



Figure 8-1: Sensing Module Replacement

## 8.2 Aspirator Replacement (FLX-SP-04)

**Caution:** Contact with the aspirator can cause a burn injury, wait until the aspirator has cooled down. To replace the aspirator, the detector should go in Service mode.

**Precaution:** Electrostatic precautions must be followed to prevent damage to the detector.

1. The aspirator cover and the rubber gasket may stick together when removing the cover. Apply pressure to pull the aspirator cover off.
2. Remove cover (see Figure 3-4).
3. Using a small screwdriver, release six locking tabs, and remove Aspirator Cover (see Figure 8-2).

**Note:** Take note of the orientation of the Aspirator and the cable when removing.

4. Pull out the Aspirator and disconnect the cables.
5. Connect aspirator connector to header, and install replacement Aspirator.
6. Replace Aspirator Cover and press down to engage locking tabs.
7. Check and ensure that all six tabs are secured.
8. Close the main cover. The device will automatically start a new intialization phase.

**Note:** The image shown below is for illustration purposes only and may not be an exact representation of the unit.

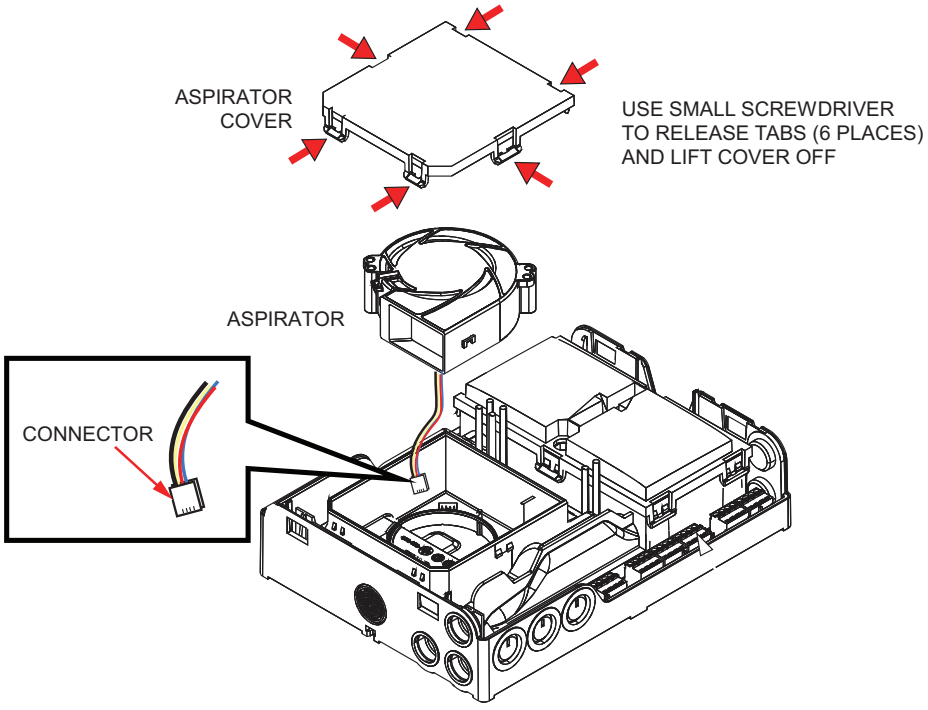



Figure 8-2: Aspirator Replacement

## 8.3 Filters Replacement (FLX-SP-02)

The Addressable FAAST FLEX has two filters to prevent dirt and debris from entering the Sensors, and a third filter on the air outlet. Filters should be replaced annually to ensure proper operation.

**Note:** In harsh operating environments (excessive dust, insects, exposure to chemicals) the filter screens may need to be replaced more frequently.

During maintenance, the sensors should be protected whenever the filters are removed. The shipping box is designed with four cardboard protection tabs that can be removed and inserted in place of the filters to provide protection. See Figure 8-3.

1. Remove cover (see Figure 3-4).
2. Using a small screwdriver, release six locking tabs, and remove Sensor Cover (see Figure 8-3). The filters cover and the rubber gasket may stick together when removing the cover. Apply pressure to pull the sensor cover off.
3. Using a small screwdriver, release six locking tabs, and remove Aspirator Cover.
4. Insert the two cardboard tabs to protect the detector from dust.
5. Remove Channel 1 Filter, Channel 2 Filter, and Outlet Filter.

**Note:** The filters can be cleaned using compressed air in case of grease water. Soap can be used to degrease it or replace with new filters.

6. Replace Aspirator Cover and press down to engage locking tabs.
7. Replace Sensor Cover and press down to engage locking tabs.
8. Replace the cover.

**Note:** The image shown below is for illustration purposes only and may not be an exact representation of the unit.

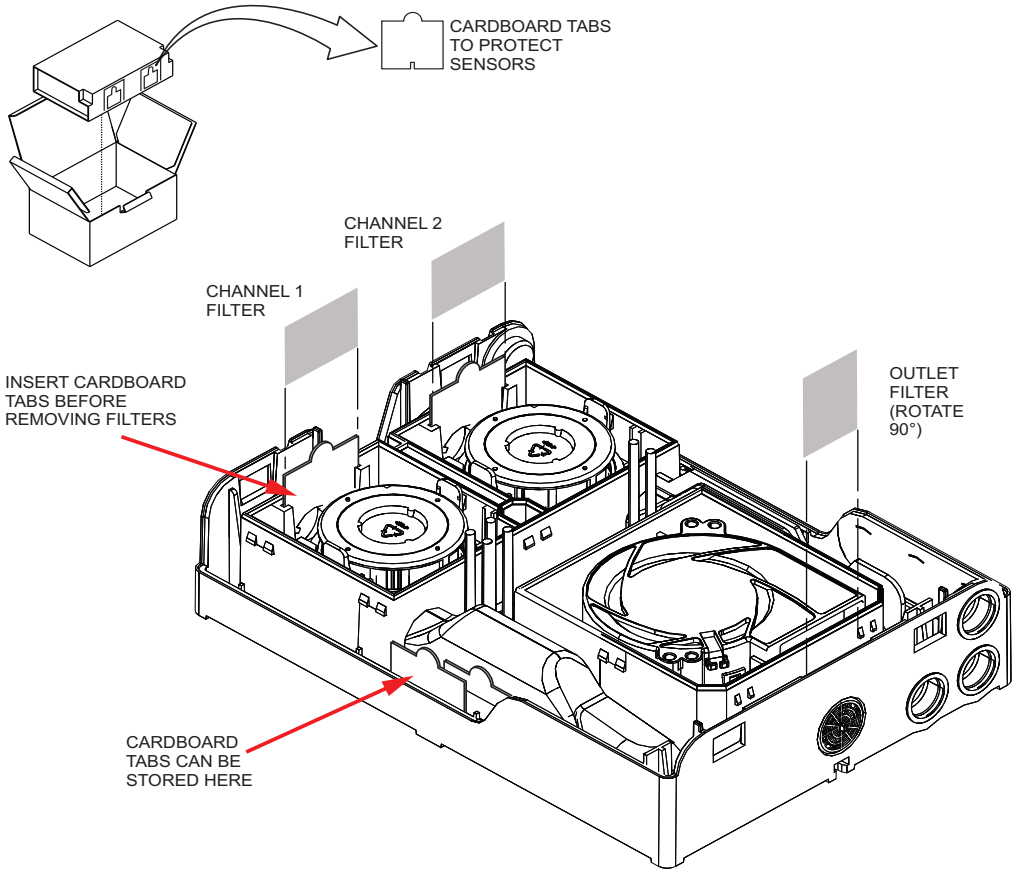



Figure 8-3: Filter Replacement

# 9 Piping Design Guidelines

Proper operation of the Addressable FAAST FLEX is highly dependent on proper design and installation of the inlet piping. For the detector to perform at maximum efficiency the inlet piping must collect ambient air from the protected space and deliver it to the detector with unobstructed airflow. The factors that impact this process include the following:

- Length and diameter of inlet piping
- Angle and location of bends in inlet piping
- Length of exhaust piping
- Location, diameter and spacing of air collection holes
- Aspirator speed
- Alarm Levels
- Presence/absence of filter

**Use ASPIRE software to achieve an optimum design of pipe networks.**

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