

# Xtralis Class C (XCC) Product Guide

XCC-011

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## Document Conventions

The following typographic conventions are used in this document:

Convention	Description
<b>Bold</b>	<b>Used to denote:</b> emphasis Used for names of menus, menu options, toolbar buttons
<i>Italics</i>	<b>Used to denote:</b> 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
	<b>Caution:</b> 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.
	<b>Warning:</b> This icon is used to indicate that there is a danger of electric shock. This may lead to death or permanent injury.
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## 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 The information below was correct at time of printing but may now be out of date, check with your local codes, standards and listings for the current restrictions.

### FCC Compliance Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, the user is encouraged to try to correct the interference by one or more of the following measures; re-orientate or relocate the receiving antenna, increase the separation between the equipment and receiver, connect the equipment to a power outlet which is on a different power circuit to the receiver or consult the dealer or an experienced radio/television technician for help.

### FDA

This Xtralis product incorporates a laser device and is classified as a Class 1 laser product that complies with FDA regulations 21 CFR 1040.10. The laser is housed in a sealed detector chamber and contains no serviceable parts. The laser emits invisible light and can be hazardous if viewed with the naked eye. Under no circumstances should the detector chamber be opened.

### EN54-20

The product must use a power supply conforming to EN54: Part 4.

This product is compliant with EN54-20 sensitivity requirements, provided that a pipe network conforming to the design parameters provided in Chapter 2 is used.

### Product Listings

- LPCB
- VdS
- CE - EMC and CPD
- EN54-20 : Class C - 18 Holes / Threshold I and the minor low and minor high air flow thresholds are set at 85% and 115% respectively
- EN61000-6-3
- EN50130-4

Regional approvals listings and regulatory compliance vary between Xtralis product models. Refer to [www.xtralis.com](http://www.xtralis.com) for the latest product approvals matrix.

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# 1 Introduction

The Xtralis Class C (XCC) detector is an Air-sampling Smoke Detector designed to protect commercial facilities of up to 1600m<sup>2</sup> to EN 54-20 Class C sensitivity levels.

The detector monitors the environment for conditions that indicate the presence or potential of a fire and annunciates via indicators and relay outputs.

This Product Guide provides you with comprehensive knowledge of the detector. It includes instructions on installing, cabling and powering up the XCC detector. It also provides information on the features, technical specifications and an understanding of the components and their function.

This guide is for anyone involved with the design, maintenance and purchasing of a system that includes the XCC detector. It is assumed that anyone using this guide has knowledge and the appropriate certification from the local fire and electrical authorities.



Figure 1-1: XCC Detector

## 1.1 Features

The XCC features make it an ideal smoke detection apparatus for protecting a wide range of Class C environments. The features include:

- The XCC-011 detector can cover an area of up to 1600m<sup>2</sup>
- Multiple Fire-Alarm threshold settings for specified pipe networks
- Fire-Alarm and Pre-Alarm outputs
- One pipe inlet that can be split into two pipes
- Option for inverted mounting
- High efficiency aspirator
- Air flow monitoring
- Easy cable termination
- Programmable general purpose input
- Configuration and maintenance via Xtralis VSC software

## 2 Pipe Networks

**Note:** To achieve EN 54-20 Class C compliance you must use the pre-engineered pipe networks described in this section.

These pre-engineered pipe networks provide installations which have a sensitivity better than 8.5% obscuration/m and predicted transport time of better than 70s. This ensures that they have a good margin of performance as a Class C detector and allow hole positions along the pipe to be varied from exact equal spacing while still achieving an acceptable system balance.

Wherever possible the hole sizes have been restricted to increments of 0.5mm and a maximum of two hole sizes on any one detector (e.g. 3mm holes with last hole 3.5mm). However, this is not always possible, particularly on the designs using capillary sampling. For these, more than two drills sizes are often needed on a particular design to accommodate the flexibility given for the length of capillary pipes – being from 0.25m to 4m long (Note: capillaries should be equal lengths for a particular detector).

### Fire-Alarm Threshold Settings:

There are 4 sensitivity thresholds provided on the XCC detector to accommodate different numbers of holes, pipe lengths and pipe arrangements. These are denoted I, II, III and IV (with I being the most sensitive).

### Pre-Alarm Threshold Settings:

The Pre-alarm condition on the XCC detector is signaled at 70% of Fire-Alarm Threshold Settings.

The tables in the following sections define the pre-engineered systems allowed.

Refer to Figure 2-1 and Figure 2-2 below for examples of single pipe and single branch (U-style) pipe networks.



Figure 2-1: Single pipe network

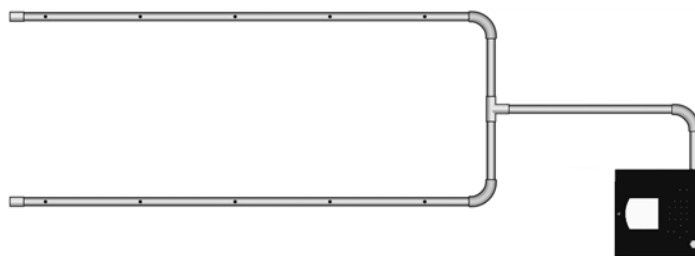


Figure 2-2: Branch Pipe network

## 2.1 XCC-011 with Drilled Holes

For the given pipe lengths and number of holes use a hole size in the indicated range shown in Table 2-1 or Table 2-2. All holes to be the same size and evenly spaced (+/- 20%). The final hole can be in the end-cap or in the pipe with a sealed end-cap.

Table 2-1: Pre-engineered pipe networks for XCC-011 with drilled holes - single pipe

Pipe Style	Length (m)	Number of Holes / Pipe											
		4 to 8	9	10	11	12	13	14	15	16	17	18	
Single Pipe	80 - 110	n/a	1-4=2.5mm 5-8=3mm 9=5mm	1-8=2.5mm 9=3mm 10=5mm	1-9=2.5mm 10=3mm 11=5mm	1-10=2.5mm 11=3mm 12=5mm	1-2=2mm 3-11=2.5mm 12=3mm 13=5mm	1-3=2mm 4-12=2.5mm 13=3mm 14=5mm	1-4=2mm 5-13=2.5mm 14=3mm 15=5mm	1-4=2mm 5-14=2.5mm 15=3mm 16=5mm	1-4=2mm 5-15=2.5mm 16=3mm 17=5mm	1-6=2mm 7-16=2.5mm 17=3mm 18=5mm	
		50 - 80	use XCC-010	1-8=3mm 9=4mm	1-9=3mm 10=4mm	1-9=2.5mm 10-11=3mm	1-10=2.5mm 11-12=3mm	1-11=2.5mm 12-13=3mm	1-12=2.5mm 13-14=3mm	1-13=2.5mm 14-15=3mm	1-13=2.5mm 14-16=3mm	1-14=2.5mm 15-17=3mm	1-7=2mm 8-17=2.5mm 18=3mm
		< 50	use XCC-010	all=3mm	all=3mm	all=3mm	all=2.5mm	all=2.5mm	all=2.5mm	all=2.5mm	all=2.5mm	all=2.5mm	all=2.5mm
Fire Alarm Threshold Setting		III	III	II	II	I	I	I	I	I	I	I	

Table 2-2: Pre-engineered pipe networks for XCC-011 with drilled holes - single branch

Pipe Style	Branch Length	Number of Holes / Branch					
		4	5	6	7	8	9
Single Branch	60 - 80	all=4.5mm	all=4mm	1-5=3mm 6=4mm	1-6=2.5mm 7=4mm	1-7=2.5mm 8=4mm	1-8=2.5mm 9=4mm
	40 - 60	all=4.5mm	all=4mm	all=3.5mm	all=3mm	1-8=2.5mm 9=3mm	1-8=2.5mm 9=3.5mm
	< 40	all=4.5mm	all=4mm	all=3.5mm	all=3mm	all=3mm	all=3mm
Fire Alarm Threshold Setting		IV	III	II	I	I	I

## 2.2 XCC-011 with Capillaries

For the given pipe lengths and number of capillary pipes use a hole size as indicated in Table 2-3 or Table 2-4 with a capillary length of between 0.5m and 4m.

All capillaries are to be the same length and evenly spaced (+/- 20%).

The end of the pipe is to be sealed with an end-cap.

Table 2-3: Pre-engineered pipe networks for XCC-011 with capillaries - single pipe

Pipe Style	Length (m)	Number of Capillaries / Pipe										
		4 to 8	9	10	11	12	13	14	15	16	17	18
Single Pipe	80 - 110	n/a	1-4=2.5mm 5-8=3mm 9=5mm	1-8=2.5mm 9=3mm 10=5mm	1-9=2.5mm 10=3mm 11=5mm	1-10=2.5mm 11=3mm 12=5mm	1-2=2mm 3-11=2.5mm 12=3mm 13=5mm	1-3=2mm 4-12=2.5mm 13=3mm 14=5mm	1-4=2mm 5-13=2.5mm 14=3mm 15=5mm	1-4=2mm 5-14=2.5mm 15=3mm 16=5mm	1-6=2mm 7-15=2.5mm 16=3mm 17=5mm	10-16=2mm 17=3mm 18=5mm
		use XCC-010	1-9=3mm 10=4mm	1-9=3mm 10=4mm	1-10=3mm 11=4mm	1-11=2.5mm 12=3mm	1-12=2.5mm 13=3mm	1-13=2.5mm 14=3mm	1-14=2.5mm 15=3mm	1-13=2.5mm 14-16=3mm	1-14=2.5mm 15-17=3mm	1-7=2mm 8-17=2.5mm 18=3mm
		use XCC-010	all=3mm	all=3mm	all=3mm	all=3mm	all=3mm	all=3mm	all=3mm	all=3mm	all=3mm	all=3mm
Fire Alarm Threshold Setting		II	II	II	II	I	I	I	I	I	I	I

Table 2-4: Pre-engineered pipe networks for XCC-011 with capillaries - single branch

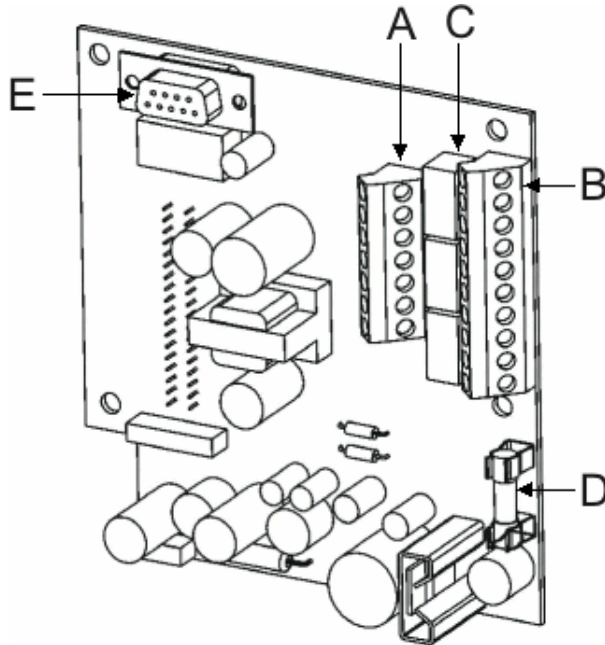
Pipe Style	Branch Length	Number of Capillaries / Branch					
		4	5	6	7	8	9
Single Branch	40 - 50	all=4.5mm	all=4mm	1-5=3mm 6=4mm	1-6=2.5mm 7=4mm	1-7=2.5mm 8=4mm	1-8=2.5mm 9=4mm
	30 - 40	all=4.5mm	all=4mm	all=3.5mm	all=3mm	1-8=2.5mm 9=3mm	1-8=2.5mm 9=3.5mm
	< 30	all=4.5mm	all=4mm	all=3.5mm	all=3mm	all=3mm	all=3mm
Fire Alarm Threshold Setting		IV	III	II	I	I	I

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### 3 Wiring Connections

#### 3.1 Termination Card

The Termination Card acts as the interface for PC configuration, Power Supply Terminals and Relay Terminals.



Terminal A		Terminal B	
1	FIRE-ALARM (NO)	1	Bias (-) (GND)
2	FIRE-ALARM (C)	2	Reset (-) (GPI)
3	PRE-ALARM (NO)	3	Reset (+) (GPI)
4	PRE-ALARM (C)	4	Bias (+)
5	FAULT (NO)	5	LED (-) (GND)
6	FAULT (C)	6	LED (+)
7	FAULT (NC)	7	Power (-)
		8	Power (+)
		9	Power (-)
		10	Power (+)

Legend					
A	Terminal A	C	Relays	E	Programming Socket
B	Terminal B	D	1.6A Fuse		

Figure 3-1: Termination Card

#### 3.2 Relay Terminals

There are three relays designated Fault, Pre-Alarm and Fire. The relays can be used to connect to the fire alarm control panel or to activate external devices. The Fire-Alarm and Pre-Alarm relay states are non-energized and the Fault relay set to energized on power up (de-energized on Fault).

#### 3.3 Relay settings and conditions to change states

Table 3-1: Default relay settings and conditions to change state

Relay #	Relay	Condition for relay to change state
1	<b>Fault</b>	This relay is de-energized when one of the following conditions occur: <ul style="list-style-type: none"> <li>• Fault found on detector</li> <li>• Air flow normalization is initiated</li> <li>• System isolation is initiated</li> </ul>
2	<b>Pre-Alarm</b>	This relay is energized when the unit detects a potential fire event.
3	<b>Fire</b>	This relay is energized once the unit detects a fire.

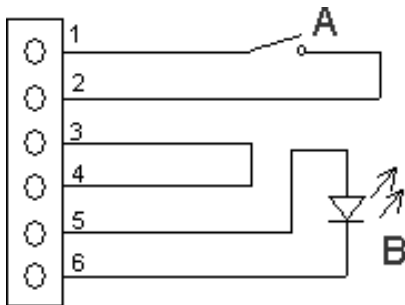
### 3.4 Auxiliary / GPI Terminals

The Reset (GPI) terminals are used for either Reset, Mains OK or Standby functions (refer to Table 3-2). Note that Xtralis VSC configuration is required to select the required GPI function. There are two connection methods available for the GPI input:

- **Method 1:** Use the Bias terminals which provide 10 VDC supply to initiate the required GPI function (Figure 3-2).
- **Method 2:** Use an external power supply (5-24 V). Connect the Reset (+) terminal to the positive output and the Reset (-) terminal to the ground output of the external power supply. Note the voltage input to Reset (+) and Reset (-) terminals is isolated from the system by an opto-coupler device.

The Bias, Reset (GPI) and LED terminals are located on the termination card (Figure 3-1).

The LED terminals provide a 5V, 15 mA DC supply via an internal 220 ohm resistor to power a remote LED.



Legend		Pins	
<b>A</b>	Switch	<b>1</b>	Bias (-)
<b>B</b>	LED	<b>2</b>	Reset (-)
		<b>3</b>	Reset (+)
<b>Switch</b>		<b>4</b>	Bias (+)
<b>Disable</b>	Close Position	<b>5</b>	LED (+)
<b>Reset</b>	Open Position	<b>6</b>	LED (-)

Figure 3-2: Wire connection for Auxiliary/GPI Terminals

Table 3-2: GPI Functions

Function	State Change	
<b>Mains OK</b>	The detector monitors the state of the external power supply and responds to the following conditions.  Mains OK $\geq 5$ VDC is at this terminal.  Mains Fail $\leq 2$ VDC is at this terminal.	
<b>Standby Mode</b>	The detector is Disabled and the aspirator turns OFF when $\geq 5$ VDC is at this terminal.  No Alarms can be generated in this state.	
<b>Reset / Disable</b>	While power is applied to the GPI the detector is disabled. In addition, the connection of power to the GPI resets the unit.  $\geq 5$ VDC Detector Disables.  $\leq 2$ VDC Detector Reset.	

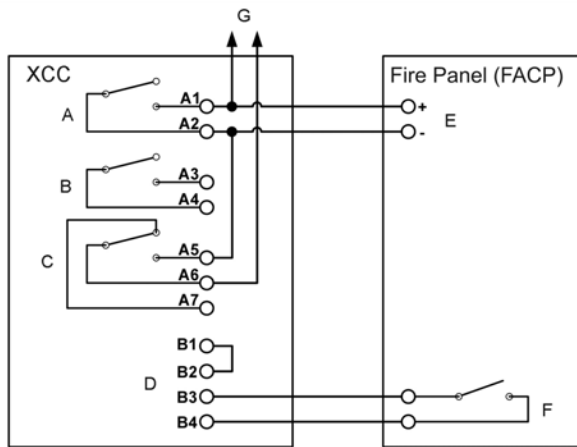


### 3.5 Programming Socket

The 9 pin programming socket on the termination card provides the communication interface between the detector and a PC running Xtralis VSC. Connect the PC to the detector using a RS232 data cable directly to the 9 pin programming socket.

### 3.6 Typical Wiring to a Fire Panel with an EOL Resistor

The diagram below shows the correct way to wire XCC detectors to a conventional fire alarm control panel (FACP). It also shows where an End Of Line (EOL) resistor is correctly installed.

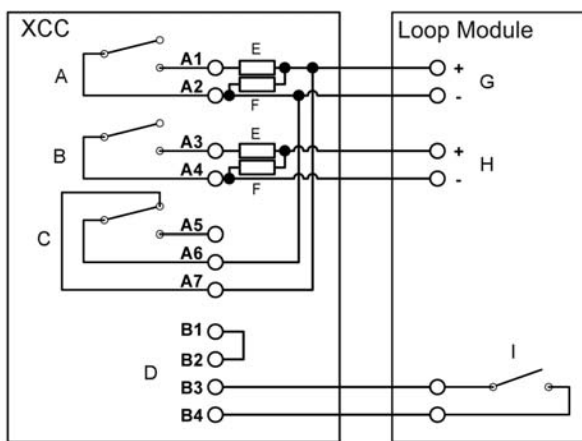


Legend		Line Impedance	
<b>A</b>	Fire Relay	<b>EOL</b>	Quiescent
<b>B</b>	Pre-Alarm Relay	<b>Short</b>	Fire Alarm
<b>C</b>	Fault Relay	<b>Open</b>	Fault
<b>D</b>	GPI Input		
<b>E</b>	Conventional Loop Input		
<b>F</b>	Reset Contact		
<b>G</b>	To next detector or EOL resistor		

Figure 3-3: Typical wiring to a fire panel with EOL resistor

### 3.7 Wiring to an Addressable Loop Module

This wiring example is for wiring XCC detectors to a typical Input/Output Loop module (3 input 1 output). These are example drawings. Refer to the appropriate product manual for the exact wiring details of the third party equipment.



Legend		Line Impedance	
<b>A</b>	Fire Relay	<b>EOL</b>	Quiescent
<b>B</b>	Pre-Alarm Relay	<b>Fire</b>	Fire Alarm
<b>C</b>	Fault Relay	<b>Open</b>	Wiring Fault
<b>D</b>	GPI Input	<b>Short</b>	Detector Fault
<b>E</b>	Fire		
<b>F</b>	EOL		
<b>G</b>	Input 1		
<b>H</b>	Input 2		
<b>I</b>	Output (configured on reset)		

Figure 3-4: Typical wiring to an input/output loop module

### 3.8 Power Source

The power terminals on the termination card connect to a 24VDC power supply. The four power terminals enable power to be brought into the detector and looped out to another device. The detector has reverse polarity protection to minimize the risk of reverse power connection to the detector.

**Note:** The XCC detector will not operate when the power supply is reversed.

**Note:** Operating the detector outside the DC supply voltage range of 18VDC and 30VDC may cause damage to the device.

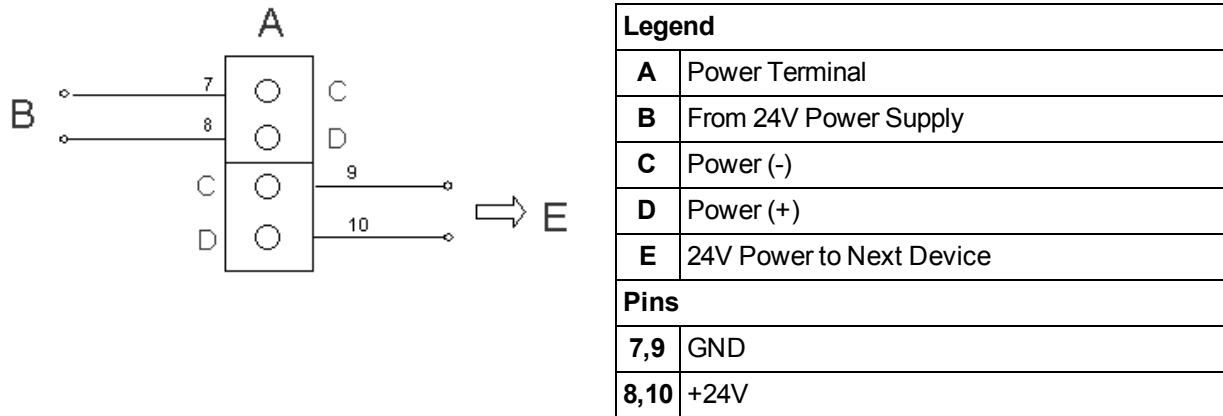


Figure 3-5: Wire connection details for power terminals on termination card

## 4 Installation

### 4.1 Mounting the Detector

The XCC detector can be mounted onto the wall using the mounting bracket on any suitable secure surface.

**Note:** The detector can only be mounted using the mounting bracket included with the packaging.

#### 4.1.1 Securing the mounting bracket

The mounting bracket for the XCC detector is always mounted in the UP direction. The mounting bracket is clearly marked with the word "UP" and an upward pointing arrow.

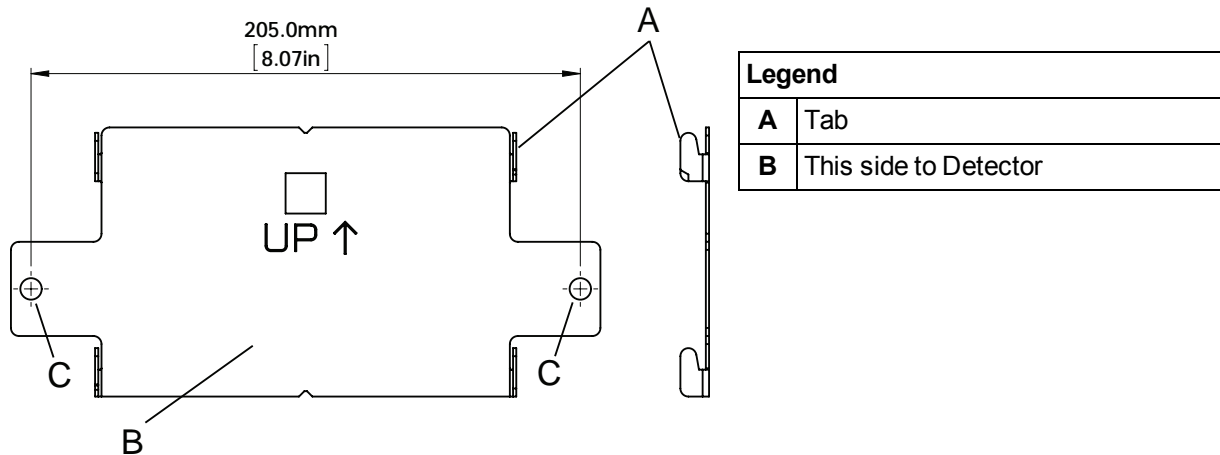


Figure 4-1: The mounting bracket for normal and inverted orientations

Secure the mounting bracket to the surface using appropriate fasteners, ensuring that the bracket is horizontally straight and sits flush on the surface.

Determine the ports for cable entry. Press out the tabs for the cable entry, air inlet and air exhaust ports.

#### 4.1.2 Installing the Detector

Determine the orientation for mounting the XCC detector. Remove the front cover and if necessary separate it from the enclosure box. The back of the enclosure box is slotted over the four mounting bracket tabs. Slide the detector downwards until it slides onto the tabs. Screw in the anti-tamper screw. Check to confirm that the detector does not slide off the mounting bracket.

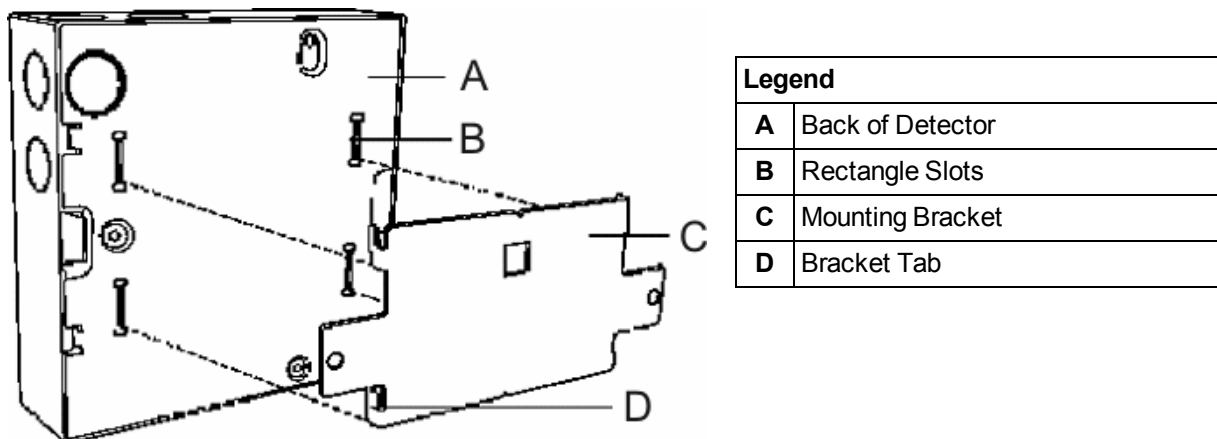


Figure 4-2: Mounting the detector onto the mounting bracket

## 4.2 Connection to Pipe Network

### 4.2.1 Inlet Pipes

To connect the detector to the Pipe Network:

1. Ensure a minimum length of 500 mm (20 in.) of straight pipe before terminating the pipe at the air inlet port of the detector.
2. Square off and de-burr the end of the sampling air pipe, ensuring the pipe is free from debris.
3. Insert the pipe into the inlet port ensuring a firm fit. DO NOT glue the inlet pipes to the Pipe Inlet Manifold.

### 4.2.2 Air Exhaust Pipe

Unplug the air exhaust port at the bottom of the detector. If necessary pipe the exhaust back to the protected area. The maximum suggested length for the exhaust pipe is 4 m (13 ft.).

**Note:** Refer to and fill in Installation Checklist on page 17.

## 4.3 Battery Backup

The power supply for the XCC detector may be switched to a back up battery in the event of the supply being disrupted. The size of the battery back up is determined by local standards and codes, the total power required by the system, back up time required, allowance for reduction in capacity with age and expected temperature variations.

**Note:** It is recommended that batteries be changed as per the battery manufacturer's specifications or as per your local codes and standards.

### 4.3.1 Backup Battery size calculation sheet

Table 4-1: Calculating the size of the backup battery

<b>XCC-011</b>	Normal Load @ 24 VDC			Full alarm load @ 24 VDC		
<b>Equipment</b>	Load mA	Number	Total	Load mA	Number	Total
<b>Detector</b>	235			255		
<b>Other 24 V loads</b>						
	Total mA			Total mA		
			X			X
	Standby hours			Alarm hours		
			=			
	Standby capacity			Alarm capacity		
	Total capacity = Standby + Alarm capacity					
	Divided by 1000 for standby capacity					
	Multiplied by battery factor (Normally 1.25)					

## 4.4 Startup

**Note:** An XCC detector must only be powered up by accredited personnel.

After installing the XCC detector it is necessary to power up the system. The system takes approximately 15 seconds to power up. If the system fails to power up, check all power wires are secured to its terminals and the polarities of the power wires are correctly terminated.

On power up:

- The aspirator starts up
- The LED indicators on the XCC front cover:
  - Will light up and cycle on and off
  - If a fault has been detected the FAULT LED indicator will remain illuminated
  - If the system is functioning normally the OK LED indicator will remain illuminated
  - If the detector does not behave normally on power up, contact your commissioning engineer or distributor to troubleshoot.

**Note:** It is normal for the detector to display troubles immediately after power up. Reset the detector by pressing the reset button on the front cover of the detector to unlatch the relays and fault LED. If the fault LED on the front cover continues to be illuminated, proceed with the preliminary systems check.

## 4.5 Commissioning

Commissioning follows installation and power-up of the detector and involves the following steps:

1. Use Xtralis VSC to:
  - Accept factory default configurations.
  - Check that the fire-alarm threshold setting is appropriate to the pre-engineered design used.
  - Select appropriate air flow threshold setting.
  - Normalize the air flow.
2. Functionally test the detector by introducing smoke into the last hole.
3. Record and confirm the transport time is less than 90 seconds.

## 4.6 Installation Checklist

<b>Site Name</b>	
<b>Address</b>	
<b>Detector Serial Number(s) and Date of Manufacture</b>	
<b>Name of Installer</b>	
<b>Signature</b>	
<b>Date</b>	

Perform the following checks listed below to ensure that all the necessary items are completed before handing over to a commissioning engineer.

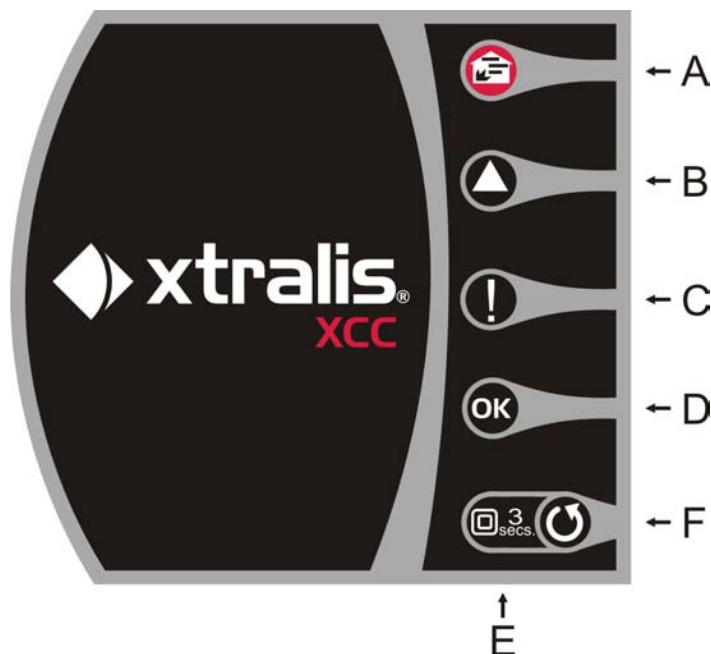
<b>Installation Checks</b>	<b>Yes</b>	<b>No</b>
Were the detector and the mounting bracket intact in the box?		
Is the detector securely locked onto its mounting bracket?		
Is the sampling air pipe firmly connected to the air inlet port? Ensure the pipe is <u>NOT</u> glued.		
Have the power wires been connected to the correct terminals on the detector?		
If required, has the end of line resistor been connected?		
Have the alarm signaling wires been terminated to the correct terminals of the detector?		
Has the plug at the exhaust port been removed and the exhaust pipe (if fitted) not glued?		
Has the front cover been replaced correctly?		
Is the air sampling pipework installed and checked as per the site plans?		

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## 5 Operation

### 5.1 Display



<b>A</b>	<b>Fire-Alarm</b>	This LED is illuminated when the unit detects a fire.
<b>B</b>	<b>Pre-Alarm</b>	This Pre-Alarm LED is illuminated when the unit detects a potential fire event developing.
<b>C</b>	<b>Fault</b>	This LED is illuminated when a fault is detected. It is also illuminated during airflow normalization.
<b>D</b>	<b>OK</b>	This LED stays illuminated during normal operation indicating the detector is functioning normally. This LED flashes twice repeatedly during air flow normalization.
<b>E</b>	<b>Reset / Disable</b>	This LED is illuminated when detector is disabled. While it remains disabled the Fault relay is de-energized (indicating a fault condition) and the Pre-Alarm and Fire-Alarm relays will not activate in the case of an alarm. <ul style="list-style-type: none"> <li>• To Reset the unit, press button once.</li> <li>• To Disable the unit, press and hold button for 3 seconds.</li> </ul>
<b>F</b>	<b>Reset / Disable Push Button</b>	<ul style="list-style-type: none"> <li>• To Enable the unit, press and hold button for 3 seconds.</li> <li>• While Disabled, faults may be cleared by pressing button once.</li> </ul> <p>The button will not operate:</p> <ul style="list-style-type: none"> <li>• if an external disable or standby command is activated using the GPI (refer to Auxiliary / GPI Terminals on page 10), or;</li> <li>• if the Reset/Disable button has been locked out in the programming.</li> </ul>

Figure 5-1: LED Indicators and the Reset/Disable button

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## 6 Maintenance and Servicing

To maintain the XCC detector at its peak performance the maintenance schedule given below should be followed. Maintenance can be conducted by the original installer, a distributor, or a service contractor.

Table 6-1: Maintenance schedule for the XCC detector

Maintenance Check	Quarterly	Six Monthly	Annual	Biennial
Power Supply	X			
Check Pipe Network		X		
Filter Inspection			X	
Pipe Integrity Smoke Test			X	
Check Pipe Flow			X	
Clean Sampling Point				X
Flush Pipe Network				X

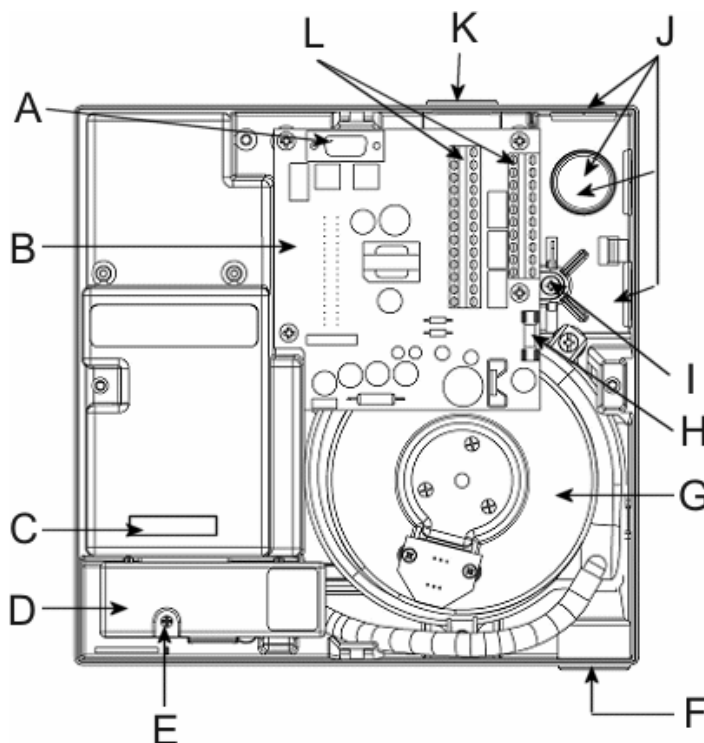


**Caution:** While a XCC detector is disabled, it will not report Fire events to the FACP.

**Note:** Prior to any maintenance or testing:

- Inform appropriate supervising authority about the risk associated with disabling a detector.
- Ensure that any ancillary devices dependent on the XCC detector is/are disabled before work is begun.

### 6.1 Internal Components



Legend	
A	9 pin programming socket
B	Termination card
C	Serial number
D	Air filter cartridge
E	Filter screw
F	Air exhaust port
G	Aspirator
H	1.6A fuse
I	Anti-tamper screw
J	Cable entry points
K	Air inlet port
L	Wire terminal strips

Figure 6-1: View of key components inside the XCC detector

## 6.2 Opening and Closing the Detector

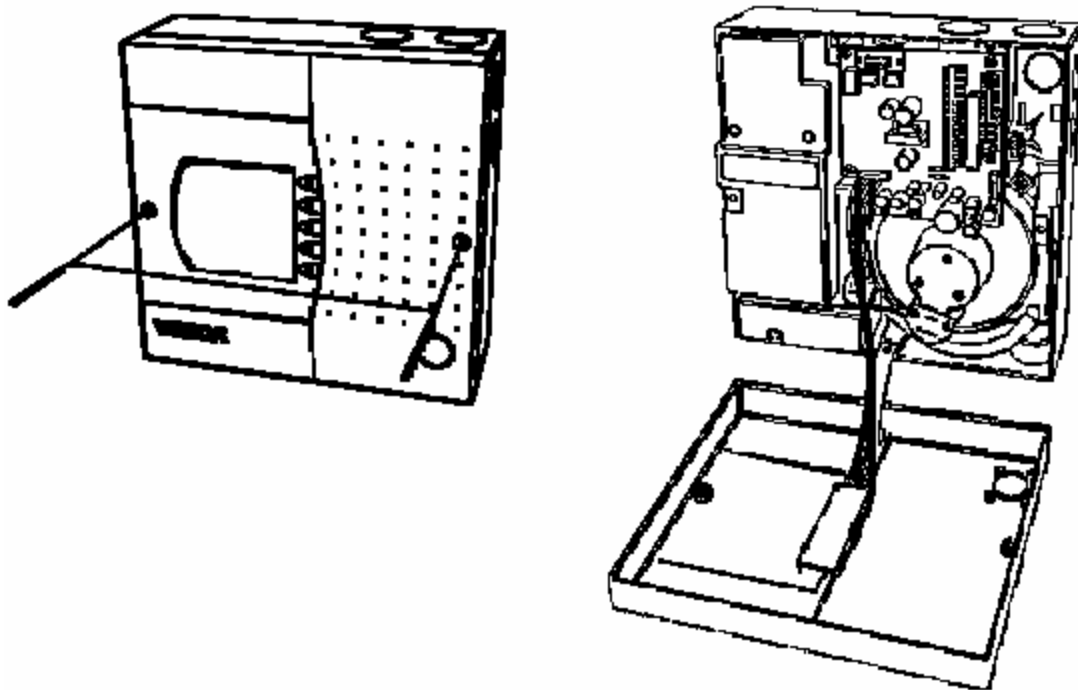


Figure 6-2: Opening and closing the detector

### 6.2.1 Opening

1. Undo the two screws on front cover.
2. Open the front cover and allow cover to hang by the attached plastic strap.

### 6.2.2 Closing

1. Replace the front cover over detector enclosure ensuring the plastic strap and cable loom are not wedged between the cover and enclosure.
2. Tighten the two screws.

## 6.3 Replacing the Filter Cartridge

The lifetime of an air filter depends on the environment. The system will generate a minor fault when the filter reaches 80% capacity and an urgent fault when it reaches 120% capacity. We recommend that the installation date and replacement date are written on the air filter cartridge label as a physical reminder of when the next service is expected.

**Note:** The detector must have the power turned on when the air filter cartridge is being replaced.

1. Open the front cover (Figure 6-2).
2. Locate the air filter cartridge (A), inside the detector compartment (refer to Figure 6-3).
3. Undo the recessed Phillips head filter screw (B).
4. Lift out the air filter cartridge.
5. Insert a new air filter cartridge.
6. Tighten the filter screw (B).
7. Connect to a PC with Xtralis VSC software to the programming socket via an RS232 cable.
8. Enter your user level and PIN number to log on to the detector.
9. Initiate the Reset Filter Settings command located under the Device menu.
10. Log off and remove the RS232 cable.
11. Close the detector (Figure 6-2).

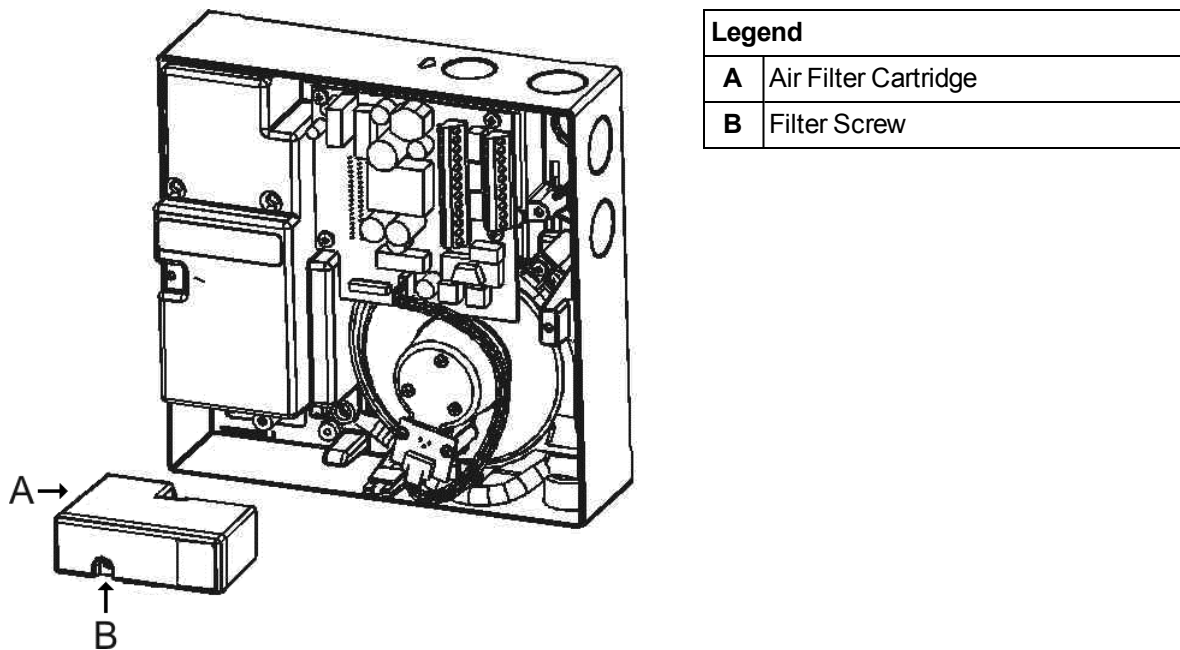
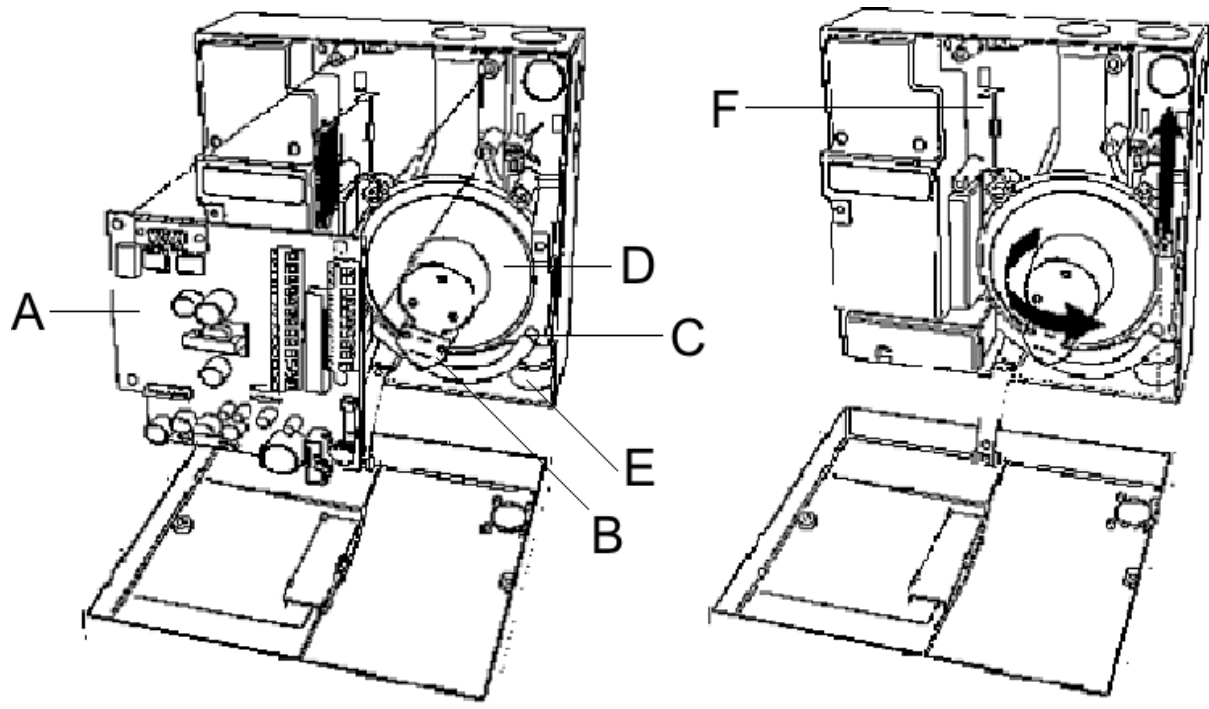


Figure 6-3: Replacing the air filter cartridge

## 6.4 Replacing the Aspirator

1. Remove the 4 screws securing the termination card (A).
2. Disconnect the wires on the aspirator (B).
3. Gently pull out termination card (A) from the interface card (You can't see the interface card, it is connected to the back of the termination card). Leave the termination card suspended by its wires.
4. Pull off the air hose from aspirator pipe (C).
5. Undo the (captive) screws securing aspirator (D).
6. Lift the aspirator out.



Legend					
<b>A</b>	Terminal Card	<b>C</b>	Aspirator Air Hose	<b>E</b>	Pipe Network Port
<b>B</b>	Aspirator Wire Loom	<b>D</b>	Aspirator	<b>F</b>	Interface Card Slot

Figure 6-4: Replacing the Aspirator

### 6.4.1 Assembly

1. Put the aspirator pipe inlet into the hole leading to the pipe network (E).
2. Tighten the screws securing the aspirator (D).
3. Connect the air hose to the aspirator pipe (C). Ensure a tight fit over the pipe.
4. Insert the termination card (A) into the interface card slot (F).
5. Tighten the termination card screws (A).
6. Reconnect the wires to the aspirator (B).
7. Put the front cover back on and tighten the screws.
8. Power ON the detector and check the aspirator is running.
9. Resolve all Fault conditions.

## 7 Product Information

### 7.1 Specifications

Table 7-1: XCC detector specifications

<b>Model</b>	XCC-011
Supply Voltage	18 to 30 VDC
Power Consumption	5.7 W quiescent, 6.2 W with alarm
Current Consumption	235 mA at 24 VDC normal operation, 255 mA with alarm
Fuse Rating	1.6A
Dimensions (WHD)	225 mm x 225 mm x 85 mm (8 7/8 in x 8 7/8 in x 3 3/8 in)
Weight	1.9kg (4.2 lbs)
Operating Conditions	<p>Tested to -10°C to 55°C (14°F to 131°F)</p> <p>Recommended Detector Ambient: 0° to 39° C (2° F to 103° F)</p> <p>Sampled Air: -20° to 60° C (-4° to 140° F)</p> <p>Humidity: 10-95% RH, non-condensing</p>
Sampling Pipe Network XCC-011	<p>Maximum Area of Coverage: 1600 m<sup>2</sup> (16000 sq. ft.)</p> <p>Maximum Single Pipe Length: 110 m (max. 18 holes)</p> <p>Maximum Branched (2) Pipe Lengths: 80 m each (max. 18 holes total)</p> <p>Pipe Design: Pre-engineered Pipe Networks (refer to page 6)</p>
Pipe Size	<p>ID: 15-21 mm (0.874 in)</p> <p>OD: 25 mm (1.050 in.)</p>
Relays	<p>3 relays, contacts rated 2A @ 30 VDC</p> <ul style="list-style-type: none"> <li>• Fire-Alarm (NO)</li> <li>• Pre-Alarm (NO)</li> <li>• Fault (Maintenance and disable) (NC/NO)</li> </ul> <p>Configurable as latching or non-latching</p>
IP Rating	IP30
Cable Access	4 x 25 mm (1 in.) cable entries
Cable Termination	Screw terminal blocks (0.2-2.5 sq mm, 30-12 AWG)
Threshold Setting Range	Refer to Pipe Networks on page 5.

# 7.2 Dimensions

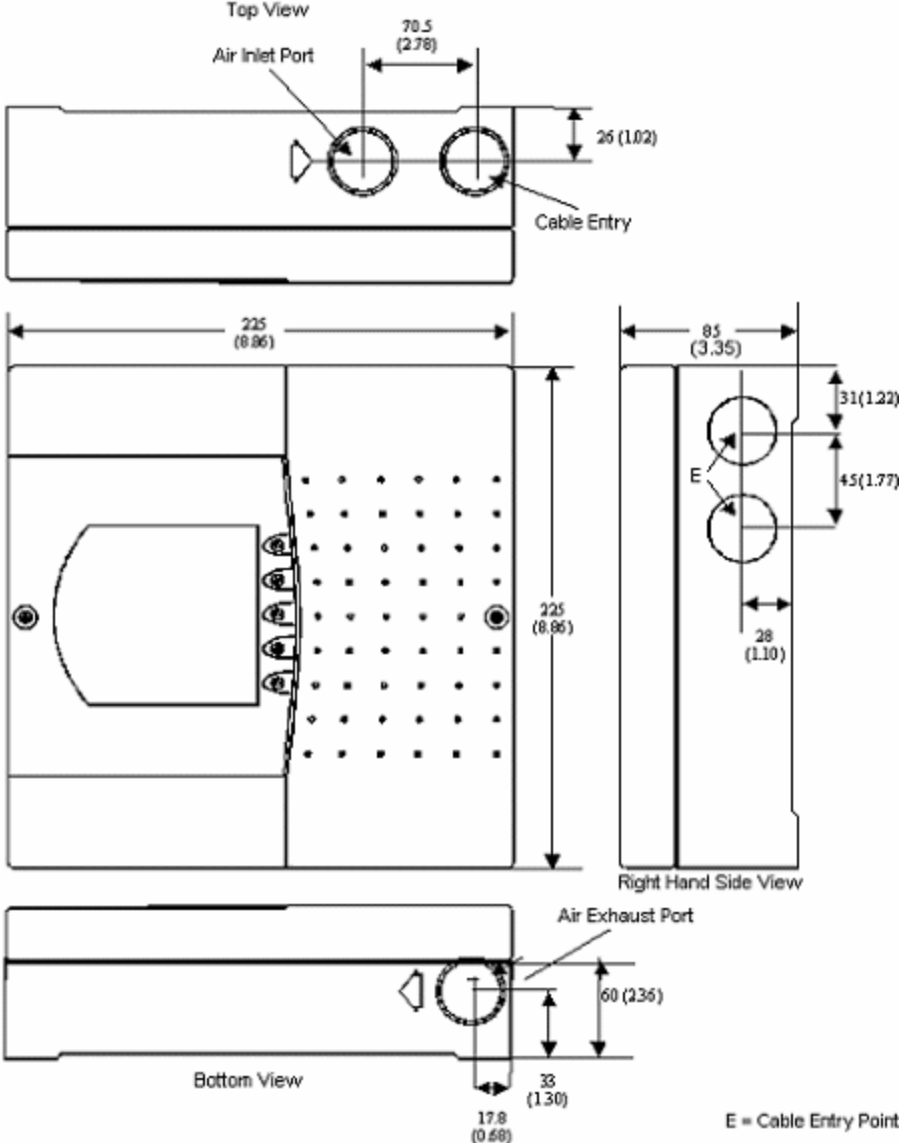


Figure 7-1: Dimensions of the XCC detector in mm. (in.)



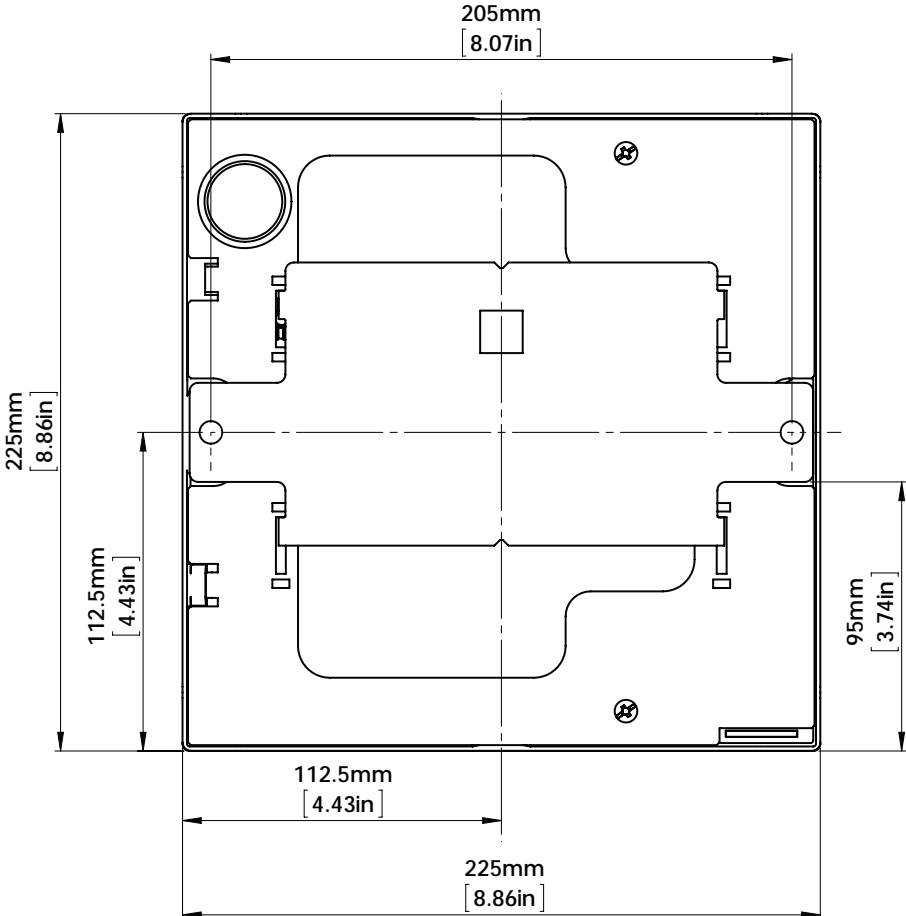


Figure 7-2: XCC detector dimensions - rear view

## 7.3 Default Settings

Table 7-2: Default values for the XCC detector

Parameter	Default Value	Range		Minimum Access
		Minimum	Maximum	
Fire-Alarm Threshold	Level II	Level I (highest sensitivity, lowest threshold)	Level IV (lowest sensitivity, highest threshold)	Adm
Simultaneous Alarm Delays	10 Seconds	0 Seconds	60 Seconds	Adm
Air flow Thresholds	Normal	Normal	Wide	
Faults Latched	Latched	n/a	n/a	Adm
Filter Service Interval	1825 days (5 years)	1 day (Dependent on environment)	1825 days (5 years)	Adm

## 7.4 Spare Parts

On larger sites having multiple detectors it is advisable to stock certain critical spare parts. A list of spare parts with quantities required is given below:

Table 7-3: Recommended spare parts stock

Part No.	Description	Number of detectors Installed to warrant ONE Spare Part	
		Normal Service	Mission Critical
VSP-005	Filter Cartridge	50	20
VSP-501	Aspirator	n/a	20

# Index

<b>A</b>		<b>E</b>	
Air		EN54-20	iii, 3, 5
Exhaust Pipe	14	end-cap	6-7
Exhaust Port	21	EOL	11
Filter Cartridge	21, 23, 28	Exhaust	13-14, 17
Hose	24	External Devices	9
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Battery	15	Service Interval	28
Battery Backup	15	Fire	3, 9, 19
Bias Terminals	10	Fire-Alarm	4, 9, 16, 19, 28
Bracket	13, 17	Flush pipe network	21
<b>C</b>		Fuse	9, 21, 25
Cable	4, 11, 13, 21-23, 25	<b>G</b>	
Cable entry points	21	GPI	4, 9-10, 19
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Check		Balance	5
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