Section 6.2: Specialist Solutions

Honeywell Building Solutions recognises that one solution does not fit all applications and that the risk to life and property can hinge upon the specialist nature of particular areas of a building.

Honeywell Building Solutions is fully capable of delivering a solution tailored to the needs of almost any application:

High sensitivity applications

For installations that require products to function under potentially explosive atmospheres, Honeywell Building Solutions has the expertise to provide intrinsically safe systems, to ensure total coverage throughout, without detriment to the increased risk environment.

Harsh environment detection

The Filtrex detector can be used in conjunction with our TC800 or System Sensor protocol controllers to extend cover into areas of high ambient dust levels, which would ordinarily be limited to heat detection cover, reducing the risk to business by increasing the level of coverage.

Hazardous area detection and alarm indication

Early warning of a potential fire condition has rarely been as important as it is within areas of sensitive processes or business critical applications (e.g. a computer room) where by a business could be critically affected by the loss of important customer information and data back-up. Honeywell Building Solutions recognise this and can provide in-house and third party systems designed specifically to meet the needs of very early detection applications.

Laser Detector Overview

Honeywell

Section 6.2: Specialist Solutions

The most sensitive point detector in the world uses a laser instead of LEDs to sense smoke. This high sensitivity laser based intelligent smoke sensor from Honeywell Building Solutions provides ultimate protection by detecting the earliest particles of combustion.

This is achieved by combining a patented optical chamber with the latest in laser diode and precision optics technology, which enhances the sensitivity of the device. The chamber is also linked to sophisticated processing circuitry that incorporates smoothing filters to help eliminate transient environmental noise conditions, which can be the cause of unwanted alarms.

The result is a very sensitive but stable sensor that can achieve sensitivities of 0.006% to 0.6% per metre obscuration and provides up to 100 times more sensitivity than a standard photoelectric smoke sensor. With its quick response and pinpoint accuracy, this unique sensor is ideally suited to environmental applications where there is substantial cost for downtime or a significant investment in installed equipment has been made, e.g. Electronics Manufacturer Clean Rooms, Telecommunication Rooms, Computer Rooms.

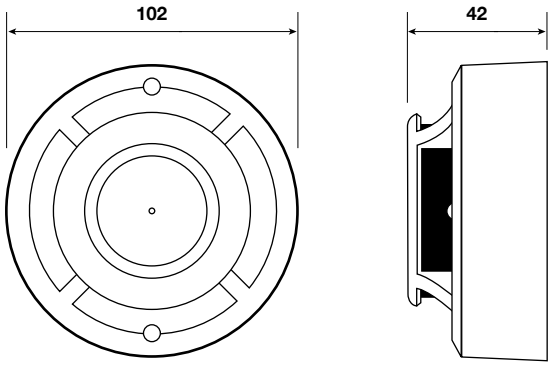
The sensor's performance is improved even further by the inclusion of special drift compensation algorithms, which compensate for the build up of contamination in the sensing chamber. There are three stages of drift compensation, 'low level alert', 'high level alert' and 'maintenance urgent'. The 'low and high level alert' signals are used to identify that the sensor has accumulated significant amounts of airborne particles and requires maintenance, whilst the 'maintenance urgent' signal indicates that the sensor has reached the end of its compensation range.

- Extremely high sensitivity 'laser' based smoke sensor
- Superior early warning performance
- Effective response to both fast flaming and slow smouldering fires
- Available in TC800 or System Sensor protocol
- When used with the aspirating module, it makes an ideal cost affective solution for an aspirating application (e.g. computer room)
- Automatic drift compensation
- Three levels of fault warning for contamination
- Stable communication with high noise immunity
- Nine sensitivity levels (0.07-6.56%/m)
- Twin LED indicators providing 360° visibility
- Rotary decade address switches
- Tamper resistant
- Built-in test switch

Laser Detector

TECHNICAL SPECIFICATION	
Operating Voltage Range	15 to 32V dc
Maximum Standby Current	230µA at 24V dc (no communications)
Maximum Average Standby Current	330µA (one flash every 99 Communications)
Application Temperature Range	-10° to +55°C
Relative Humidity	10 to 93% (non-condensing)
Weight	0.12 kg
Max Wire Gauge for Terminals	2.5mm^2
Colour	Pantone Warm Grey 1C
Material	Bayblend FR110
Relevant Standards	EN 54 Part 7
Approvals	LPCB

Dimensions (mm)



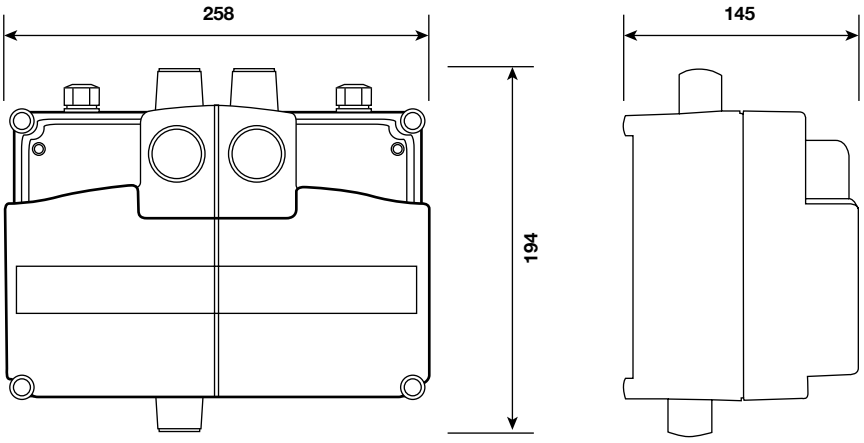
ORDER CODES	
TC800 Protocol	
Laser Detector	TC846A1005
System Sensor Protocol	
Laser Detector	7251
Bases – for both protocols	
Standard Sensor Base	14506414-007
Standard Sensor Base with Built-in Isolator	14506414-006

Section 6.2.1: Specialist Solutions – High Sensitivity Detection

Aspirating Detector

TECHNICAL SPECIFICATION		
Type	**Single Channel Aspirating Unit**	**Dual Channel Aspirating Unit**
Operating Voltage Range	18 to 30V dc	18 to 30V dc
Maximum Standby Current	100µA (no communications)	100µA (no communications)
Current Draw	80 to 500mA depending on pipe length and fan speed	80 to 500mA depending on pipe length and fan speed
Application Temperature Range	-10ºC to +55ºC	-10ºC to +55ºC
Humidity	10 to 93% (non condensing)	10 to 93% (non condensing)
Ingress Protection	IP50 (IP65 optional)	IP50 (IP65 optional)
Maximum Pipe Length	75m	50m per channel
Pipe Diameter	20mm to 26.7mm (3/4" BSP)	20mm to 26.7mm (3/4" BSP)
Pipe Hole Diameter	3mm at start & 6mm at end of pipe	3mm at start & 6mm at end of pipe
Pipe Hole Spacing	7.5m	7.5m
Max Wire Gauge for Terminals	0.4mm^2 to 2.0mm^2	0.4mm^2 to 2.0mm^2
Weight	1.9 kg	2.17 kg
Relevant Standards	PR EN 54-20, CEA4022	PR EN 54-20, CEA4022
Approvals	VdS	VdS

Dimensions (mm)



The aspirating system has been designed to take advantage of Honeywell's unique laser sensor to provide a compact, and cost effective aspirating solution. Available in a single or dual channel unit, the device is connected directly to the loop affording an effective way of providing very early warning detection for high value and enterprise critical areas. It is also an effective method of affording detection for large, open areas or areas that are inaccessible or difficult to reach such as under-floor cable voids in computer rooms.

- Integrated into the main fire detection system
- Can be used in a stand alone mode with volt-free outputs for fire and fault alarms
- Configurable sensitivity from 0.065% – 6.5% OBS/M
- Integral display with user programmable functions
- In-line air filter
- Local indication of airflow management status
- Adjustable airflow speed with visual monitor
- Optional IP65 waterproof enclosure
- Design application for configuring the pipework

ORDER CODES

TC800 Protocol

Single Channel Laser Aspiration Detector	**TC866E1001**
Dual Channel Laser Aspiration Detector	**TC866E2009**

System Sensor Protocol

Single Channel Laser Aspiration Detector	**A211E-LSR**
Dual Channel Laser Aspiration Detector	**A222E-LSR**

All models are inclusive of the laser sensor.

Section 6.2.2: Specialist Solutions – Harsh Environments

The Filtrex analogue optical detector from Honeywell Building Solutions is the only point smoke detector specifically designed for use in dusty environments.

The biggest drawback with all smoke detectors is that if the air entering the detection chamber contains significant amounts of dust or water mist, it is unable to differentiate between smoke and other particulate matter. It reacts to the dust particles or water droplets as though they were smoke, causing false alarms and adding to the overall life cost of the system, through maintenance and unplanned visits.

During extensive site testing, it was found that textile factories and paper mills were amongst some of those applications at the greatest risk of false alarms when using traditional point smoke detectors, leaving some building owners with the risk of disruption to their business. In buildings that would experience high levels of false alarms, building owners were forced into opting for a lower levels of automatic detection in the form of slower responding heat detectors – until now.

The new Filtrex analogue optical detector has been developed to address this particular specialised market. The detector is fitted with two 32 micron filters to prevent the ingress of dust and water particles. The inner filter is permanently installed during the manufacturing process, the external filter is removable for replacement by the user. The filters allow smoke particles through while excluding the much larger dust particles and water droplets.

- The only point smoke detector specifically designed for use in dusty environments
- Reduces false alarms caused by airborne particulates (e.g. dust and water)
- Reduces cost of maintenance
- User replaceable filter
- Filter monitored by monitoring air flow and alerting the control panel before it becomes blocked to smoke particulates
- Can be used in high air velocity applications (20m/s) as air flow is controlled by an integral fan

Maintenance intervals in dusty atmospheres should be much extended because, with no dust entering the chamber, false alarms due to settling dust are eliminated. The external filter is removed for cleaning with a simple tool and the system stays on line during the cleaning process, again ensuring that protection is maintained.

The Filtrex intelligent optical detector is the first model in the family to be released and great interest has been shown by the Industrial sector. The benefits of providing early detection in harsh environments at low cost are an attractive alternative to the more established products already serving this specialised, but widespread marketplace.

Section 6.2.2: Specialist Solutions – Harsh Environments

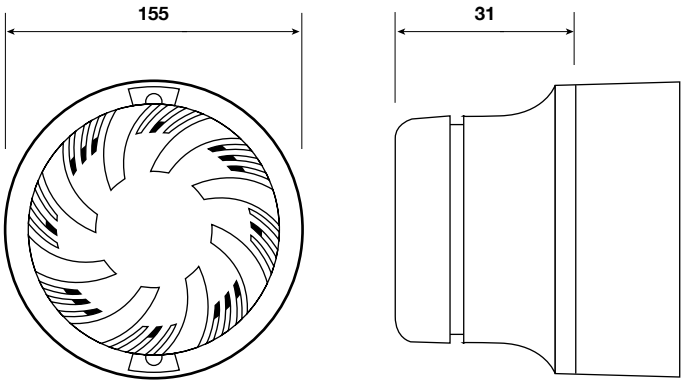
Filtrex Detector

TECHNICAL SPECIFICATION	
Operating Voltage Range (detector)	15 to 32V dc
Operating Voltage Range (fan)	15 to 30V dc
Current Consumption Detector	250µA at 24V dc (without communication)
Air Delivery System	6mA standby 123mA maximum 60mA typical when checking for smoke 27mA average 80mA typical when checking for proper airflow
Operating Temperature	-10ºC to +55ºC
Relative Humidity	10 to 93% (non-condensing)
Weight	214g
Relevant Standards	EN 54 Part 7
Approvals	CPD, LPCB

The Filtrex™ Smoke Detector provides early warning smoke detection in difficult environments where traditional smoke detectors are not practical. Using a small air intake fan and a high density replaceable filter, air and smoke are drawn into a photoelectric sensing chamber while dust is removed.

- High density filter removes particulate down to 34 microns
- Air delivery system is separately powered and fully supervised
- Filter is easily replaced
- Approved for use in high airflow (20m/s)
- Optional remote LED
- Rotary decade address switches
- Twin alarm LEDs provide 360º visibility
- Compatible with the XLS80e only

Dimensions (mm)



ORDER CODES

TC800 Protocol

Filtrex Detector	TC844A1015
Filtrex Sensor Base	14507371-008
Water Resistant Cover for FILTREX Sensor Base (14507371-008)	B524FTXE-WRC
Filtrex 1st stage Filter Mesh for (TC844A1015) (replaceable without removing detector)	RF-FTX
Filtrex 2nd stage Filter Mesh (32 UM) for (TC844A1015) (sensor has to be removed to replace this filter)	F37-04-01

Section 6.2.3: Specialist Solutions – Intrinsically Safe Hazardous Area Detection

Utilising our expertise in intrinsic safety and explosion proof engineering, Honeywell Building Solutions can offer you a solution comprising of intrinsically safe and explosion proof equipment integrated together to undertake the most demanding of fire alarm solutions.

Our systems have been designed for those who work in demanding environments, where precision, reliability and user-friendliness are of the utmost importance. Our solutions currently serve customers that work in potentially explosive environments especially in the chemical, pharmaceutical, petrochemical, oil and gas industries.

Intrinsically safe devices form an integral part of our life safety offering with a range of devices available in both Conventional and Analogue Addressable.