



ION Science

Product Guide



About ION Science

What we do

ION Science is a leading UK manufacturer of technologically advanced gas detection instruments and sensors, distributed worldwide.

Our products

Our portfolio of gas detectors and sensing technologies provides you with unrivalled gas detection and monitoring capabilities even within the harshest of environments.

Personal

Personal gas detectors keep workers safe from atmospheric hazards by continuously monitoring the user's breathing zone, these detectors operate at close range to the user. Our range of personal gas detectors and monitors will allow you to operate in the toughest of industrial environments including hazardous areas.

Portable

Handheld devices are essential in many areas where gas hazards could occur, as the devices are continuously monitoring at close range to the operator, whilst stationary and moving.

Fixed

Fixed gas detectors are installed to provide continuous, area and personnel protection around the clock. The detection system is designed to alert workers of the potential danger of poisoning by toxic gas exposure. Fixed gas detectors are generally installed in small and large facilities and are used to both detect major leaks and as an early warning of gas leaking from a particular system.



Our commitment to you

ION Science are committed to develop the highest quality instruments and sensors that give you the most accurate, reliable results backed by an unrivalled level of customer service and support.

Our Mission

"To be the leader in gas sensing technology with relationships built on trust, pioneering products, responsiveness, and exceptional customer service".

Our Vision

"To protect lives and preserve the environment".

Our Values



Have
fun



Be
responsive



Be
respectful



Embrace
change



Challenge the
status quo



Be
committed



PERSONAL

ARA Single Gas Range

Wearable Clip Monitor



Overview:

Hydrogen Sulfide (H_2S) may desensitise and render the body unconscious in no time at high concentrations, therefore, reliable personal monitoring equipment is crucial. ARA H_2S portable alarm is a low cost, wearable clip monitor for the detection of dangerous level of H_2S . The detector alerts workers when gas concentrations exceed set safety levels. The ARA H_2S gas detector has a daily self-test feature that test the audio, visual and vibration alarms to give you confidence that workers are protected.



Carbon Monoxide (CO) is a colourless, odorless and tasteless gas, making it impossible for humans to detect without the aid of specialised equipment. The ARA Carbon Monoxide (CO) gas detector is a vital tool for ensuring personal safety, preventing poisoning incidents, and complying with safety standards and regulations.

Key Features:

- >> 24 month or 36 month battery life options
- >> Adjustable low & high alarms
- >> Light weight, it does not impede worker movement
- >> Easy to use with single button operation



Oxygen (O_2) gas detector is important in industrial and hazardous environments where oxygen levels can be a critical factor. In many applications, an oxygen gas detector is essential to safeguard workers who might need to enter these spaces. This wearable oxygen detector has one button, making it



In workplaces where SO_2 is produced or handled, a gas detector is essential to monitor the air quality and ensure the safety of employees and nearby residents. The ARA SO_2 gas detector is an essential tool for ensuring worker safety, protecting public health, and monitoring air quality.

ARA DOCK4



ARA DOCK4 is a bump test and calibration station that can test up to four ARA Single Gas Detectors simultaneously reducing gas usage and testing time. The ARA DOCK4 is simple to operate and records calibration and bump test readings along with the serial number, date and time.

- >> Lifetime remaining countdown helps users to plan for future projects and site shutdowns
- >> Event logging download
- >> Live readings & instantaneous alarms to protect a users workforce in hazardous environments
- >> User-configurable calibration and bump test reminders



PERSONAL Cub 10.6 eV

VOC Gas Detector

SGS

LVD

IECEX

ATEX

Overview:

Cub 10.6 eV personal VOC gas detector is worn within the breathing zone to detect volatile organic compound gases, keeping you safe within your working environment.

When worker exposure exceeds pre-set limits, the VOC detectors audible, vibrating, and flashing LED alarms alert you to the gases present. Readings are displayed on its bright, back-lit LCD display with selectable data logging time.

Key applications:

- >> Industrial hygiene
- >> Chemical and petrochemical plants
- >> Oil & gas
- >> Pharmaceuticals
- >> Health & safety
- >> Hazardous materials
- >> First response

Key Features:

- >> Market leading ppb sensitivity, widest detection range; 0.001 ppm - 5000 ppm
- >> Measures STELs & TWAs for 900 selectable compounds
- >> 16 hour battery life for extended run time
- >> Humidity resistant PID technology



PERSONAL Cub 11.7 eV

VOC Gas Detector

SGS

LVD

IECEX

ATEX

Overview:

Cub 11.7 eV is the world's smallest, lightest personal PID monitor for the accurate detection of volatile organic compounds and other gases that require a higher energy output such as acetylene, methanol and formaldehyde.

With market leading sub-ppm sensitivity, Cub 11.7 eV gives an early warning of hazardous gases before they reach levels which are harmful.

Key applications:

- >> Personnel safety
- >> Industrial hygiene
- >> Emergency response
- >> Plant shut downnnn & turnaround

Key Features:

- >> Wide detection range: 0.5 - 5000 ppm
- >> In-built humidity resistance with no need to compensate
- >> Unrivalled sensitivity detects down to sub-ppm levels
- >> Clear audio, visual and vibrating alarms



PERSONAL Cub 10.0 eV

VOC Gas Detector

SGS

LVD

IECEX

ATEX

Overview:

Cub TAC 10.0 eV is the world's smallest, lightest personal PID monitor for the accurate detection of volatile organic and total aromatic compounds. The market leading ppb sensitivity, Cub gives an early warning of hazardous gases, including benzene, before they reach levels which are harmful.

Small, compact and lightweight Cub TAC is robust yet comfortable and unobtrusive to wear. Cub TAC has a dynamic range of 0.01 to 5000 ppm, the widest on the market measuring over 480 selectable compounds.

The high capacity lithium-ion battery offers a continuous run time of up to 12 hours. Cub TAC offers three station options, charge only, charge and data download with calibration.

Typical Applications:

- >> Industrial hygiene
- >> Chemical and petrochemical plants
- >> Health & safety
- >> Hazardous materials
- >> First response
- >> Environmental

Key Features:

- >> Unrivalled sensitivity detects down to ppb levels
- >> Widest range detects gases 0.01 ppm - 5000 ppm
- >> Low cost of ownership
- >> Anti-contamination design



PORTABLE

Tiger XT Select

Benzene PID Gas Detector

ETL

IECEX

ATEX

Overview:

Tiger XT Select with two-mode operation rapidly detects benzene and Total Aromatic Compounds (TACs). The ION Science pre-filter tubes also offer the most accurate, reliable measurement you can count on. The Tiger XT Select displays real-time data, ensuring the final reading represents the full value of actual benzene gas present. Benzene gas concentrations are displayed down to parts-per-billion (ppb) levels, giving you accurate, reliable data you can count on.

Tiger XT Select can also be used in 'standard Tiger operational mode' without the use of a benzene pre-filter tube to deliver active indications of volatile organic compounds (VOCs), including benzene, at concentrations as low as 1 ppb benzene equivalent.

Typical Applications:

- >> Pre entry checks
- >> Plant Maintenance
- >> Marine Down-Stream Monitoring
- >> Hazardous Material Response
- >> TAC detection at loading docks and barge operations.

Key Features:

- >> Low cost of ownership
- >> Fast response time & clear down
- >> IP65 ingress protection
- >> Humidity resistant and anti-contamination design



PORTABLE

Tiger XT

Handheld VOC Detector

ETL

IECEX

ATEX

Overview:

Tiger XT's photoionisation detection (PID) technology has been independently verified as best performing on the market for speed, accuracy, resistance to humidity and contamination, thanks to its patented Fence Electrode Technology.

Its patented Fence Electrode Technology and anti-contamination design ensures optimal performance within humid and heavily contaminated atmospheres, extending run time in the field. The Tiger XT is the most advanced handheld VOC detector on the market with the widest measurement range, accurately detecting gases down to 1 part per billion (ppb) up to 20,000 part per million (ppm).

Tiger XT has the fastest response time on the market of just two seconds, and is as quick to clear down. The Tiger XT handheld VOC gas detector can detect over 750 VOCs and toxic compounds! Tiger XT has a much higher VOC detection range and is equipped with much more features than the Tiger XTL.

Key Features:

- >> Datalogging
- >> Fast response time & clear down
- >> IP65 ingress protection
- >> Compatible with 10.6 eV & 11.7 eV lamps



PORTABLE Tiger XTL

Portable VOC Detector

ETL

IECEX

ATEX

Overview:

Tiger XTL is a ground breaking low cost entry level VOC detector with all the essential functions you need to detect VOCs. The instrument has the lowest running costs on the market with inexpensive disposable parts, lamps and filters. This variant of the hugely popular Tiger XTL VOC detector is low on cost but high on performance.

Its revolutionary, patented PID sensor technology with resistance and anti-contamination design provides market leading accuracy and run time. Combined with 24 hour battery life, these features maximise field time by minimising erroneous readings in high humidity and drift in hard environments.

Typical Applications:

- >> Environmental monitoring
- >> Soil contamination detection
- >> VOCs in landfill
- >> Pre entry checks
- >> Emergency response
- >> Fumigation gases & medical gases

Key Features:

- >> 24 hour battery life
- >> Fast response time & clear down
- >> IP65 ingress protection
- >> Humidity resistant and anti-contamination design



PORTABLE **Panther**

Gas Leak Detector

Overview:

The Panther Gas Leak Detector utilises a micro thermal conductivity sensor which offers fast and sensitive detection for many gases including as Helium, Hydrogen, Ammonia and Refrigerants. The internal piezo pump offers extremely stable sample flow and makes it highly stable in draughty environments. The Panther has also demonstrated its relative immunity in high electro-magnetic field environments.

For customers with a smaller budget, the basic Panther model is available. This instrument has the same features as the PRO version but without data logging and Bluetooth capabilities. Both Panther and Panther PRO detectors can be registered online to extend the warranty to 2 years.

Typical Applications:

- >> Manufacturing
- >> Laboratory
- >> Medical
- >> Research

Key Features:

- >> Robust design withstanding harsh environment
- >> Highly resistant to magnetic fields
- >> Li-ion battery life of up to 20 hours
- >> Detection of over 35 gases



PORTABLE Panther PRO

Gas Leak Detector

Overview:

The Panther PRO allows users to zero the instrument in ambient air, providing visual, audible and vibration alarms when leaks are detected. A colour LCD display and a built-in Gas-Table enables the measurement of concentration and leak rates in a variety of user-selectable units.

Bluetooth Connectivity:

All measurements can be logged internally and downloaded via Bluetooth or USB. The Panther also features an integrated torch and a flexible probe, which help in low light and restricted areas.

Key Applications:

- >> 2 year extended warranty when registered
- >> Datalogging and Bluetooth capabilities allow for data to be seamlessly extracted via ION PC software
- >> ml/sec, cc/sec, g/yr, ppm, mg/m³, Vol measurements
- >> Internal library of gases



PORTABLE MVI

Mercury Vapour Indicator

Overview:

MVI accurately detects mercury vapours in just 3 seconds. MVI does not saturate or need regenerating, eliminating instrument downtime.

Fast and accurate, MVI gives a real time response and is ready to detect in minutes. MVI provides continuous readings and offers two detection ranges: 0.1 to 199 and 1 to 1999 microgram/cubic meter, ideal for time weighted average (TWA) monitoring.

The portable Mercury Vapour Indicator utilises a high-performance pump for fast mercury indication and recovery. The instrument's audible alarm and large digital display clearly indicate the levels of mercury present.

Ergonomically designed with simple, one-handed operation MVI is the ideal survey unit for rapid and accurate mercury detection.

Key Features:

- >> Continuous readings
- >> No saturation, no regeneration, no downtime
- >> Range: 0.1-199 & 1-1999 microgram/cubic metre
- >> 3 second response



PORTABLE

SF₆ Leakmate

Portable SF₆ Leak Detector

Overview:

SF₆ Leakmate, portable SF₆ leak monitor is a great device for mobile SF₆ leak detection. In practical use, the fast detection makes it perfectly suitable for simple leak detection applications on SF₆ switchgear.

The easy to use, processor controlled portable SF₆ leak monitor, features both an audible alarm and an LED bar graph display, allowing estimation if a small, medium or big leak is being detected.

The portable SF₆ leak detector automatically compensates all ambient influences like temperature changes or movement of air in the room. Intelligent control sets up the instrument appropriately for the ambient situation.

It then uses the present gas concentration as its zero line and begins to look for even higher gas concentrations, which by all means occur when a SF₆ leak is detected. This will again be indicated audibly and visually.

Key Features:

- >> Selectable sensitivity
- >> Battery test display
- >> Automatic zero
- >> LED bar graph display



FIXED

Falco Pumped

VOC Gas Monitor

QPS

IECEX

ATEX

Overview:

Falco pumped is a fixed VOC gas monitor that eliminates false readings found with other competing technology and continuously monitors Volatile Organic Compounds (VOCs) in hazardous areas. The Falco pumped, fixed VOC gas monitor uses a sample line to draw samples and is ideal for use in difficult locations such as underground or in confined spaces.

Falco pumped VOC detector gives you cutting-edge performance; reliability, accuracy and results you can trust so you can be sure your workforce and plant receive on-going maximum protection. With its humidity resistance and anti-contamination design, drift is minimised and run-time extended, saving both time and cost to your business.

FALCO with 10.6 eV lamp					FALCO 10.0 eV lamp	
Range (ppm)	0-10	0-50.0	0-1000	0-3000	Range (ppm)	0-50.0
Sensitivity	0.001	0.01	0.1	1	Sensitivity	0.01
Pumped	✓	✓	✓	✓	Pumped	✓

Falco Pumped Key Features:

- >> IP65 ingress protection
- >> Live Readings & instantaneous alarms
- >> OLED Screen
- >> Typhoon technology



FIXED

Falco Diffused

VOC Gas Monitor

QPS

IECEX

ATEX

Overview:

Falco fixed VOC Gas Detector, diffused model, is an intrinsically safe and ATEX certified instrument making it approved for use in ATEX-zoned hazardous areas. Our fixed gas monitor is designed with Typhoon technology, making it able to withstand exceptionally harsh environments, including 0-100% relative humidity, condensing humidity, and temperatures from -40 to +50 °C without any compromise in performance.

In addition, the diffusive model also has an externally located Intrinsically Safe sensor for quick and easy servicing without the need for a hot work permit and only requires annual maintenance. Dual certification allows your fixed VOC gas detector to be serviced and calibrated in a hazardous environment without having to remove power!

FALCO with 10.6 eV lamp					FALCO 10.0 eV lamp	
Range (ppm)	0-10	0-50.0	0-1000	0-3000	Range (ppm)	0-50.0
Sensitivity	0.001	0.01	0.1	1	Sensitivity	0.01
Diffused	✓	✓	✓	✓	Diffused	✓

Key Features:

- >> Eliminates false reading found with other PIDs
- >> Multi-coloured status display seen from 20 meters
- >> Sensor minimises drift and downtime
- >> Designed for extreme weather



FIXED

Titan 2

Benzene Gas Monitor

IECEX

ATEX

QPS

Overview:

Titan 2 offers a world-leading solution for the detection of benzene, capable of gas speciation and accurately detecting benzene down to as low as 0.02 ppm (20 ppb) and as high as 20 ppm within a span of 60 seconds. Titan 2 is designed to sample airbourne hazards for the safety of your workforce on site. It can also be used to assess the performance of purification or vapour recovery systems/ units (VRU).

The Modbus RTU communication protocol enables efficient data collection and analysis. Titan 2 offers improved sensitivity, reliability and overall performance. The unique sampling method eliminates interfering gases such as toluene, xylene and methane providing you with accurate benzene concentration readings you can rely on.

Key Features:

- >> IP65 ingress protection
- >> Highly sensitive - detecting benzene down to 0.02 ppm
- >> 4 - 20 mA & RS485 communication options
- >> Interchangeable service module

Benzene Legislation

Titan 2 offers a world-leading solution for the detection of benzene, capable of gas speciation and accurately detecting benzene down to as low as 0.02 ppm (20 ppb). Titan 2 service module is designed to be backwards compatible, so in conjunction with a simple firmware upgrade now provides existing Titan customers with a quick and convenient upgrade opportunity.

Benzene Response

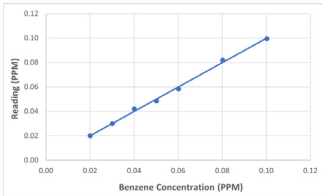


Figure 1 Benzene Linearity 0.02ppm to 0.1ppm

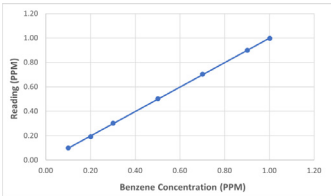


Figure 1b Benzene Linearity 0.1ppm to 1ppm

Table 1, shows response to petrol of the Titan 2. Under UK regulations petrol must contain $\leq 1\%$ benzene so it is assumed that 100ppm of petrol contains ≤ 1 ppm. E10 petrol was used during testing which contains 10% ethanol and clearly demonstrates the improvement in selectivity the 10.0eV PID gives when compared to a 10.6eV PID.

Applied Petrol (PPM)	Reading with 10.6eV PID (PPM)	Reading with 10.0eV PID (PPM)	Expected Benzene Reading (PPM)
2	0.03	0.02	≤ 0.02
4	0.06	0.04	≤ 0.04
6	0.09	0.06	≤ 0.06
8	0.13	0.08	≤ 0.08
10	0.17	0.09	≤ 0.10
100	2.40	0.81	≤ 1.00

Table 1 Titan 2 petrol response *assumed that the tested petrol contains $\leq 1\%$ benzene

Key Applications:

- >> Bulk storage facilities
- >> Chemical manufacturing and processing
- >> Asphalt production



FIXED

TVOC 2

VOC Gas Monitor

IECEx

ATEX

Overview:

TVOC 2 is a fixed photoionisation detector (PID) for the continuous measurement of total volatile organic compounds (VOCs). TVOC 2 can accurately measure three detection ranges of 0 – 10 ppm, 0 – 100 ppm or 0 – 1000 ppm and is ideal for use in manufacturing and process industries where VOCs are typically present.

TVOC 2 utilises a diffusive sample technique resulting in less contamination issues compared to pumped systems, reducing lamp cleaning and servicing requirements. The 4-20 mA analogue output enables TVOC to be integrated into a DCS control system to give warning or control of high VOC levels in the working environment.

Key Features:

- >> Accurately measures over three different ranges
- >> Diffusive monitoring - no pump required
- >> Anti-contamination design
- >> Minimises the effects of humidity



FIXED

SF₆ Areacheck P2

Fixed SF₆ Gas Detector

Overview:

This fixed SF₆ gas detector utilizes relay output for immediate awareness of detected leaks and presents no cross sensitivity with any other gas or moisture in the air. The SF₆ AreaCheck P2 has a built-in low flow alarm and self-diagnostic testing. AreaCheck P2 has no filter problems due to its minimum air intake (compared to pump operated systems).

Can be used on an RS485 network, it also outputs RS232 and has relay outputs for standalone functionality. The SF₆ AreaCheck P2 has a built-in low flow alarm and self-diagnostic testing.

Key Applications

- >> SF₆ leak testing and measurement in high voltage switchgear (GIS)
- >> Leak integrity testing on medical, refrigeration and air conditioning equipment containing SF₆ and (H)CFCs
- >> Breathing apparatus testing
- >> Medical device testing

Key Features:

- >> Fast, accurate detection down to highly sensitive levels
- >> No cross sensitivity with other gases or moisture in air
- >> Audio and visual alarms provide clear indication of SF₆ leaks
- >> Built in low flow alarm and diagnostics test



SEMI-PORTABLE

GasClam 2

Ground Gas Monitor

IECEX

ATEX

CSA

Overview:

GasClam 2 is a unique in-borehole gas monitoring system developed for unattended collection of long term, real-trend ground gas data. GasClam 2 continuously measures and collects ground gas concentration data as well as parameters that are known to control it - sub-surface pressure, atmospheric pressure, water level and temperature.

In combination, this data reduces uncertainty by providing the full picture of what is happening below ground. Also by observing the process controlling the ground gas regime you can predict how it will change in the future.

GasClam 2 not only reduces cost by reducing the number of site visits, it also offers a higher quality of data. Deploying multiple GasClam 2 can also offer insight into the dynamics of the ground gas regime.

The GasClam 2's robust stainless steel body is designed to resist the harsh underground environments. It has dual EXd and Intrinsically safe certification be used in hazardous areas.

Key Features:

- >> Battery powered deployment for up to 3 months
- >> External power option for longer deployment
- >> Continuous gas (methane, carbon dioxide, oxygen, hydrogen sulphide and total VOC) monitoring
- >> Continuous atmospheric/borehole pressure and water level monitoring



SEMI-PORTABLE **SF₆ Leak- Check P1P XTL**

SF₆ Leak Detector

Overview:

SF₆ LeakCheck P1P XTL is a truly portable, precise and highly sensitive instrument for determining SF₆ leaks built in a trolley style Peli Protector Case including a docking station for the Handgun.

Maximum reliability and ultimate ease of use were the main guidelines in the development of SF₆ LeakCheck P1P XTL. All vital parameters, such as the sample flow rate, are permanently monitored and regulated.

Normal operation is a matter of switch on and go. By default, the unit powers up in what is called the 'Search Mode', featuring a fast responding Bar Graph on the Handgun Display. This effectively prevents the operator to overlook smaller leaks, which would otherwise cause only a marginal response.

Key Features:

- >> High sensitivity for both leak rates and gas concentrations
- >> Immune to 100% SF₆
- >> Easily transportable
- >> Fast response time & clear down

Where to buy

Global Distribution Map

ION Science have offices in the UK, USA, India, Italy, France, Germany and China, with an extensive network of distributors located throughout the world.



Customer and Technical support

Our experienced technical and application support team at ION Science is readily available to provide assistance and ensure prompt responses to all customer inquiries, effectively minimizing instrument downtime.



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