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ION SCIENCE INSTRUMENT GUIDE

ionscience.com

Pioneering Gas Sensing Technology.





ABOUT ION SCIENCE

UNRIVALLED GAS DETECTION

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 instruments and sensors provide you with unrivalled gas detection and monitoring capabilities within the harshest of environments.

Industries & Applications

Our instruments and sensors are designed for use across a wide number of industries and applications, wherever you have a need to detect gases and vapours;

Industries;

- Oil & gas
- Pharmaceutical and medical
- Food & beverage
- Universities
- Government & defence
- Manufacturing
- Semiconductors
- Construction
- Aerospace
- Water
- Power generation
- Consultant

Applications;

- Personal safety
- Industrial hygiene
- Soil contamination & remediation
- Fugitive emissions
- Leak detection & repair
- Arson investigation
- Air quality monitoring
- Fenceline monitoring
- Fertility lab
- Process control
- Decontamination
- Emergency response
- Plant shut down & turnaround

Our commitment to you

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

Pioneering Gas Sensing Technology.



WHAT GAS

ARE YOU LOOKING TO DETECT OR MONITOR?

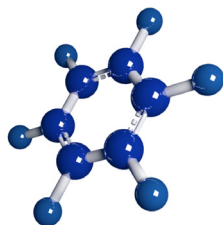
Gases and vapours surround us on a daily basis and are prevalent in industrial working environments. Some gases pose a hazard to health and must be monitored to ensure exposure limits are not exceeded.

Volatile Organic Compounds (VOCs) Gases

VOCs can be measured in air using a variety of principles, the more accurate method is the Photoionisation Detector (PID). Some VOCs include chemicals that can cause irritation to the nose, eyes, and throat. Other effects can include shortness of breath, dizziness and headaches. The advantage of the ION Science PID sensor is that it delivers a dynamic and dependable response to thousands of VOCs across many diverse applications.

ION Science provides a range of leading photoionisation detection (PID) sensors and instrumentation capable of detecting more than 900+ gases, including:

- **Benzene:** C_6H_6 | CAS: 71-43-2
- **Acetone:** C_3H_6O | CAS: 67-64-1
- **Styrene:** C_8H_8 | CAS: 100-42-5
- **Propene:** C_3H_6 | CAS: 115-07-1
- **Isopropanol:** C_3H_8O | CAS: 67-63-0
- **Methyl mercaptan:** CH_4S | CAS: 74-93-1
- **Sulfur hexafluoride:** SF_6 | CAS: 2551-62-4
- **Xylene:** C_8H_{10} | CAS: 1330-20-7
- **Dichlorobenzene:** $C_6H_4Cl_2$ | CAS: 541-73-1



To discover our full range of gases that can be detected, visit our online gas search www.ionscience.com/gas-search/



GAS DETECTION INSTRUMENTS

PRODUCT PORTFOLIO

ION Science manufactures a wide range of technological advanced gas and leak detectors for a wide variety of gases.

From ION Science's ever growing personal, portable, semi-portable and fixed portfolio of gas detection systems, find the right solution for your gas detection needs.

Factors to Consider:

- The source of the gases
- Whether the hazard is temporary or chronic
- Environment of the site
- Typical occupancy of the affected site
- Time required for workers to safely exit the affected area
- Training required to operate the detection system
- Expense

Product Portfolio:

- Cub Personal VOC Detector
- Cub^{TAC} Personal Benzene Detector
- ARA Single Gas Detectors (H₂S, CO, O₂, SO₂)
- Tiger VOC Detector
- Tiger^{LT} VOC Detector
- Tiger Select Benzene Detector
- GasCheck G Helium Leak Detector
- GasCheck Tesla Helium Leak Detector
- Mercury Vapour Indicator (MVI)
- SF₆ Leakmate
- GasClam 2 Soil / Ground Gas Monitor
- SF₆ LeakCheck P1:p Leak Detector
- Fire Investigation Kit
- Falco / Falco^{TAC} Diffused Detector
- Falco / Falco^{TAC} Pumped Detector
- Titan Fixed Benzene Detector
- TVOC 2 Fixed PID Detector
- SF₆ AreaCheck P2

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CUB

PERSONAL VOC GAS DETECTOR

Cub is the smallest, lightest personal VOC detector available for fast, accurate detection of volatile organic and total aromatic compounds keeping you safe within your working environment.

Features:

- Market leading ppb sensitivity
- Small, lightweight & unobtrusive to wear
- Widest detection range; 1 ppb to 5000 ppm
- Measures STELs & TWAs for 900 selectable compounds
- Longest battery life for extended run time
- PID independently verified as best performing
- Minimises the effects of humidity
- Anti-contamination design

Key applications include:

- Industrial hygiene
- Personal Safety
- Batteries
- Solar Farm
- Decontamination
- Emergency response
- Plant shut down & turnaround



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CUB^{TAC}

PERSONAL BENZENE GAS MONITOR

Cub^{TAC} is a personal benzene detector for the fast, accurate detection of total aromatic compounds (TACs), including benzene, keeping you safe within your working environment.

Features:

- Specifically designed for total aromatic compounds (TACs), including benzene
- Market leading ppb sensitivity
- Small, lightweight & unobtrusive to wear
- Widest detection range; 10 ppb to 5000 ppm
- Longest battery life for extended run time
- PID independently verified as best performing
- Virtually eliminates the effects of humidity
- Anti-contamination design

Key applications include:

- Industrial hygiene
- Personal Safety
- Decontamination
- Emergency response
- Plant shut down & turnaround



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HANDHELD VOC GAS DETECTOR

A revolutionary portable detector, Tiger provides rapid, accurate detection of volatile organic compounds (VOCs) with high resistance to humidity and contamination.

Features:

- Detection range 0 - 20,000 ppm, 1 ppb sensitivity
- Over 900 gases with STELs & TWAs held in memory
- Fast 2 second response
- Longest battery life for extended run time
- Easy to use - minimal training required
- Robust, rugged design
- Bright LED & vibration alarms
- Low running costs
- Easily upgradeable online
- PID sensor has been independently verified as best performing
- Virtually eliminates the effects of humidity
- Anti-contamination design

Key applications include:

- Industrial hygiene
- Personal safety
- Fenceline monitoring
- Leak detection & repair
- Arson investigation
- Air quality monitoring
- Decontamination
- Emergency response
- Plant shutdown & turnaround



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TIGER SELECT

PORTABLE BENZENE GAS DETECTOR



Tiger 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.

Features:

- Fast and accurate detection
- Instant read-out on start up
- Measures benzene with or without tube attachment
- Continuous readings displayed
- PID independently verified as best performing
- Longest battery life for extended run time
- Easy to use - minimal training required
- Robust, rugged design
- Low running costs
- Easily upgradeable online
- Market leading ppb sensitivity
- Virtually eliminates the effects of humidity
- Anti-contamination design

Key applications include:

- Industrial hygiene
- Personal safety
- Arson investigation
- Air quality monitoring
- Decontamination
- Emergency response
- Plant shutdown & turnaround



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TIGER^{LT}

PORTABLE VOC GAS DETECTOR

The leading technology of Tiger^{LT} makes it the most advanced, low-cost, handheld VOC detector giving the most accurate, reliable results whilst maximising field time.

Features:

- Fast and accurate detection across 0.1 - 5000 ppm range
- Patented humidity resistance for best accuracy
- Anti-contamination design
- Response factors for direct concentration readout
- Data logging 128 zones, 80,000 points
- 24 hour Li-ion battery run time
- ATEX and IECEx certified
- Verified as best performing PID sensor technology

Key applications include:

- Industrial hygiene
- Personal safety
- Fenceline monitoring
- Leak detection & repair
- Arson investigation
- Air quality monitoring
- Decontamination
- Emergency response
- Plant shutdown & turnaround



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GASCHECK TESLA

PORTABLE HELIUM LEAK DETECTOR

The GasCheck Tesla is designed specifically for use within high magnetic fields around Magnetic Resonance Imaging (MRI) scanners. A micro thermal conductivity sensor provides rapid, accurate measurement of leaks down to ultra-low levels.

Features:

- Reliable, stable & repeatable
- Ready to detect instantly
- Clear indication of leaks
- cc/sec, mg/m³ or ppm readings
- Robust, handheld, easy to use
- Additional diagnostics

Key applications include:

- MRI scanner maintenance





MVI

PORTABLE MERCURY VAPOUR INDICATOR

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

Features:

- No saturation, no regeneration, no downtime
- Range: 0.1 - 199 & 1 - 1999 microgram/cubic metre
- Fast indication and recovery
- 3 second response
- Highly accurate measurement
- Ready to detect in minutes
- Continuous readings
- Simple, one-handed operation
- Large digital display
- Audible alarm
- Robust and portable

Key applications include:

- Decontamination
- Emergency response
- Exploration
- Plant shut down & turnaround





SF₆ LEAKMATE

PORTABLE SF₆ LEAK MONITOR

The SF₆ Leakmate, portable SF₆ leak monitor is a great device for mobile SF₆ leak detection. In practical use, it has a detection threshold of $1 \times 10E-6$ mbar l/s, which 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.

Features:

- Battery test display
- Automatic zero
- Audible alarm
- LED bar graph display
- Selectable sensitivity

Key application:

- SF₆ Switchgear





SF₆ LEAKCHECK P1:p

GAS LEAK DETECTOR

The SF₆ LeakCheck P1:p is an award winning SF₆ leak detector ensuring incredibly fast detection at ultra sensitive levels.

Features:

- Award winning technology
- Highly sensitive, detects leaks down to 1×10^{-8} ml/sec
- 1 second rise and clear down
- Unaffected by large leaks and 100% SF₆
- Choice of display units
- Easy storage & transportation
- Low cost of ownership
- No delays between searches
- Easy navigation
- Low maintenance
- Data storage and printing for data analysis
- High sense option

Key applications include:

- Personal safety
- Industrial hygiene
- Fugitive emissions
- Air quality monitoring





GASCLAM 2

CONTINUOUS GROUND GAS DETECTOR

GasClam 2 is a unique semi-portable in-borehole gas monitoring system developed for unattended collection of long-term real-trend ground-data.

Features:

- Fits into a standard 50mm/2" borehole
- Continuous gas (methane, carbon dioxide, oxygen, hydrogen sulphide and total VOC) monitoring
- Continuous atmospheric/borehole pressure and water level monitoring
- Configurable logging intervals
- Battery powered deployment for up to 3 months
- External power option for longer deployment
- Simple PC software to download and analyse data

Key benefits:

- Optimised site management through continuous monitoring
- Reduced risk based upon improved site characterisation and event flagging
- Provides complete data for site assessments
- Demonstrates due diligence and regulatory compliance
- Supports industry best practice approach to ground-gas monitoring
- Aids selection of cost effective solutions



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FIRE INVESTIGATION KIT

FOR FIRE & ARSON INVESTIGATION

The Fire Investigation Kit (FIK) has been specifically designed to provide a convenient, easy to use solution for the detection of VOCs within Fire and Arson Investigation applications.

Included in the kit is:

- Tiger or Tiger^{LT} handheld VOC detector for rapid accurate response to VOCs
- 1m Flexi-probe
- Bump test pen
- AA Tiger battery pack – for an emergency power source when a charging point is not available
- Charging cradle & travel charge adaptor – for remote instrument charging
- Exhaust barb – to allow sample collection
- Quick Start Guide
- PTFE filters (pack of 10) – for quick and simple Tiger maintenance
- Rugged Carry Case – for easy, secure and robust transportation
- USB cable
- Mains adaptor for worldwide charging



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Pioneering Gas Sensing Technology.



FALCO / FALCO^{TAC}

DIFFUSED FIXED VOC GAS DETECTOR

Falco and Falco^{TAC} diffused fixed VOC detector continuously detects a range of VOCs using patented PID technology specifically designed for extreme weather and condensing atmospheres. Falco ensures reliability and confidence in even the harshest of environments.

The Falco and Falco^{TAC} diffused instruments are ideal for detecting VOCs and TACs in wide areas such as buildings and factories.

Features:

- Designed for extreme weather
- Typhoon Technology stops condensation forming within the PID sensor
- Sensor minimises drift and downtime
- Eliminates false readings found with other PIDs
- Multi-coloured status display seen from 20 meters
- Pumped model available
- Ex d approved
- 10.6 eV stack for normal models
- 10.0 eV stack for TACs (0-50.0 ppm)

Key applications include:

- Personal safety
- Industrial hygiene
- Fugitive emissions
- Fenceline monitoring
- Air quality monitoring
- Process control
- Plant shutdown & turnaround



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FALCO / FALCO^{TAC}

PUMPED FIXED VOC DETECTOR

The Falco and Falco^{TAC} pumped instruments are ideal for detecting VOCs and TACs in difficult locations such as underground or in confined spaces. The pumped model uses a sample line to draw a sample from a fixed location. The pumped variant can also be used to sample VOCs from industrial processes.

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

Outputs :

- RS 485 (Modbus®)
- 4 - 20 mA
- 2 x Configurable relays

Key applications include:

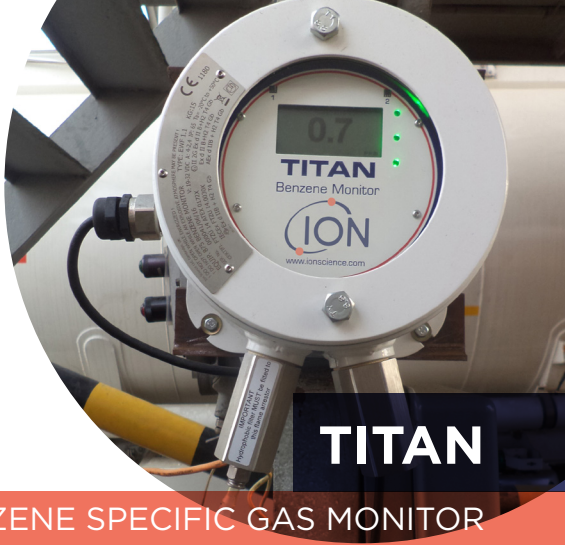
- Personal safety
- Industrial hygiene
- Fugitive emissions
- Fenceline monitoring
- Air quality monitoring
- Process control
- Plant shutdown & turnaround



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QPS



TITAN

BENZENE SPECIFIC GAS MONITOR

ION Science brings to market the world's first continuous, wall-mounted, benzene specific monitor set to change the game in refinery applications.

Features:

- Fast, accurate detection
- Minimum sensitivity 0.1 ppm benzene
- Detection range from 0 - 20 ppm
- Provides an immediate warning alarm system
- Continuous real-time readings
- Stable operation in extreme temperatures
- Modular design for easy install and service
- PID sensor technology verified as best performing
- Anti-contamination PID design

Key applications include:

- Personal safety
- Industrial hygiene
- Fugitive emissions
- Fenceline monitoring
- Air quality monitoring
- Process control
- Plant shut down & turnaround



IECEX

ATEX

QPS



TVOC 2

CONTINUOUS VOC GAS DETECTOR

TVOC 2 is a fixed VOC detector for fast, accurate detection of volatile organic compounds with multiple detection range from just one instrument.

Features:

- Accurately measures over three different ranges
- Diffusive monitoring - no pump required
- Robust, rugged design
- Simple to use - minimal training required
- Easy access PID sensor
- Simple service and calibration
- Minimises the effects of humidity
- Anti-contamination design
- Long-life ION Science MiniPID 6-pin sensor included

Key applications include:

- Personal safety
- Industrial hygiene
- Process control
- Fume cupboards
- HVAC
- Plant shut down & turnaround



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SF₆ AREACHECK P2

FIXED GAS DETECTOR

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.

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

Key applications include:

- 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





SINGLE GAS RANGE

DISPOSABLE SINGLE GAS DETECTORS

ION Science has launched a range of cost-effective, low maintenance, disposable ARA Single Gas Detectors for compliance monitoring and worker safety.

ARA Single Gas Detectors comprises six models including four gas types: Hydrogen Sulphide, Carbon Monoxide, Oxygen and Sulphur Dioxide.



ARA H₂S
ARA H₂S Hibernation



ARA CO
ARA CO Hibernation



ARA O₂



ARA SO₂

The personal, wearable instruments enable workers to monitor their exposure to toxic gases as well as oxygen enrichment and depletion, alerting them when safe levels are exceeded.

Industry sectors include:

- Oil & Gas
- Chemical
- Manufacturing
- Government & Defence
- Water
- Aerospace
- Power Generation

Applications include:

- Site-wide Safety
- Confined Space Entry
- Plant Shutdown Processes
- First Response Safety



SERVICE & SUPPORT

SUPPORTING YOU AND YOUR INSTRUMENT

Instrument Registration

Instruments can be registered online to increase your standard warranty by up to 5 years (on Tiger and Tiger Select) and up to 2 years on other ION Science instrument giving you peace of mind that it is covered by us for as long as possible.

Five years warranty:

- ✓ Tiger
- ✓ Tiger Select

Two years warranty:

- ✓ Tiger^{LT}
- ✓ GasCheck G
- ✓ GasCheck Tesla
- ✓ TVOC 2
- ✓ MVI
- ✓ Falco and Falco^{TAC} Pumped
- ✓ Falco and Falco^{TAC} Diffused
- ✓ Cub
- ✓ Cub^{TAC}
- ✓ GasClam 2
- ✓ Titan

To register your instrument, visit the ION Science website.

Servicing and re-calibration

Our skilled technicians are trained to the highest standard and will ensure that your instrument is back up and running and returned to you as quickly as possible.

We recommend your instrument is re-calibrated yearly to ensure it continues to provide you with accurate reliable results.

For more information, visit the ION Science website.

ION Science

Our head office and manufacturing plant is located just outside of Cambridge in the UK.



Distributors

We have additional offices in USA, India, Italy, France, Germany, China and an extensive network of distributors located throughout the world.



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