



**GAS DETECTION  
EQUIPMENT  
& INSTRUMENTATION**

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PRODUCT CATALOGUE

  
**apctechsafe**

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**NZ Safety Blackwoods**

## SUPPLIER OF LEADING BRANDS:

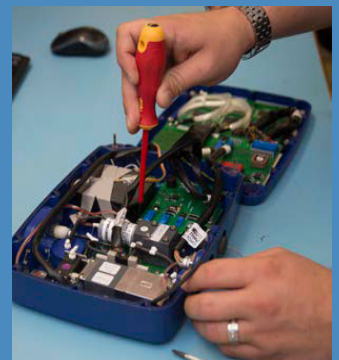


# EXPERTS IN INSTRUMENTATION

**APC Techsafe is the market leader in the supply, service, calibration, training and support of instrumentation & gas detection equipment in New Zealand with over 30 years experience bringing the latest technologies to market.**

APC Techsafe provides exclusive wireless gas detection technology solutions to monitor groups of workers in remote locations.

The APC Techsafe service offer includes calibration, repairs, inspection, commissioning, fault finding & instrument cleaning, fall protection equipment all carried out in our purpose built laboratory by our highly experienced technicians. APC Techsafe can also provide onsite services nationwide via a fleet of mobile service vehicles.



VISIT **APC.CO.NZ** OR CALL US ON **0800 832 732**

### Service & Calibration Nationwide

Gas detectors should be calibrated every six months to twelve months dependant on technology. APC Techsafe's service department offers on site routine calibration, repairs & commissioning of both fixed & portable Gas Detectors. We also offer inspection & servicing of height safety equipment such as harnesses, fall-arresters and retrieval winches. Work is carried out at either of our fully equipped workshops or in our service vehicles by our team of factory trained technicians.

### There's more to gas detection than simply owning equipment.

Every six months gas detectors should be calibrated and serviced. APC Techsafe's service department offers onsite routine calibration, repairs & commissioning of both fixed & portable Gas Detectors. We also offer servicing of height safety equipment such as fall-arresters and retrieval winches. Work is carried out at either of our fully equipped workshops or in our service vehicles by our team of factory trained technicians.

SALES ■ SERVICE ■ HIRE ■ SUPPORT

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# PORTABLE GAS DETECTION

## ↓ SINGLE GAS PERSONAL MONITORS

### BW CLIP MAINTENANCE FREE

The BW Clip is a maintenance free single-gas detector. Just turn on the device and it runs continuously – no need for calibration, sensor replacement, battery replacement or battery charging. That means great reliability and no downtime.

- Available in a two year version for O2, CO or H2S
- Optional Hibernation Case can extend the life to three years
- Real-time gas level display
- Automated internal test for improved safety
- Compatible with MicroDock II and IntelliDoX docking station
- Automatically logs the 35 most recent gas events for easy, accurate recordkeeping
- IP-66 ingress protection rating

Description	Product Code	Description	Product Code
H2S	482924	O2	482926
CO	482925		



### GASALERT EXTREME

The GasAlert Extreme is designed with durability and comfort in mind, this gas detector monitors for any single gas hazard within its wide range of available toxic gas models.

- Equipped with internal vibrating alarm for high noise areas
- Secure and accurate history with datalogging option
- Automated internal test for improved safety
- Replaceable 3V battery with up to 1.5 years life
- Compatible with MicroDock II automatic test and calibration station
- IP-66 ingress protection rating

Description	Product Code	Description	Product Code
H2S	814995	NH3	481665
CO	481686	Cl2	481664
O2	481662	HCN	481689



### TOXIRAE PRO EC

Compact, reliable and easy-to-use, the ToxiRAE Pro doesn't get in the way of workers doing their job and provides unmistakable five-way local and remote alarms if a threat is detected or a man is down. Plus, it offers the flexibility of easily swappable sensors to monitor for different gases in different situations.

- Over 20 intelligent interchangeable sensors that store calibration data and are field replaceable.
- Reliable, rugged, and intrinsically safe
- Rechargeable Li-ion battery with up to 30 hours run time
- Built in man down alarm
- Continuous datalogging
- IP-65 ingress protection rating
- Fully automated bump testing and calibration with AutoRAE 2
- Optional Wireless ability to monitor real-time instrument readings remotely

Description	Product Code	Description	Product Code
H2S	482895	NH3	481365
CO	482424	Cl2	481229
O2	482481	HCN	481874



### TOXIRAE PRO CO2

The ToxiRAE Pro CO2 is a small and smart solution for Carbon Dioxide monitoring. The unit offers continuous datalogging and is a great safety tool for industries such as food and beverage, wineries and breweries, and chemical manufacturing.

- Rechargeable Li-ion battery with up to 11 hours run time
- Built in man down alarm
- Continuous datalogging
- IP-65 ingress protection rating
- Fully automated bump testing and calibration with AutoRAE 2
- Optional Wireless ability to monitor real-time instrument readings remotely

Description	Product Code
CO2	481913



## BUMP TESTING AND CALIBRATION



It is recommended to bump test your gas detector before each use to confirm its ability to respond to gas. Bump testing your gas detection instrument with calibration/bump gas is the only way to ensure the gas detector is working correctly and that you can be confident with the units operation.

### CALIBRATION

Gas detectors should be calibrated at minimum of every six months. Calibrating your instrument compensates for factors such as temperature, humidity, length of service and gas exposure (which will affect the output of your sensor) and guarantees accurate readings.



→ CALIBRATION MUST BE CONDUCTED IF THE GAS DETECTOR FAILS A BUMP TEST.

# PORTABLE GAS DETECTION

## ↓ MULTI GAS PERSONAL MONITORS

### GASALERT MICROCLIP SERIES

The MicroClip's small size, reliability and easy one-button operation make it the most popular portable multi-gas detector on the market. With continuous monitoring of four gases the unit is ideal for a variety of applications such as personal protection and confined space entry.

- Rechargeable battery, up to 18 hours runtime
- Flashing green IntelliFlash™ light for compliance at a glance
- Equipped with standard datalogging and event logging
- Compatible with MicroDock II automatic test and calibration station
- IP-68 for maximum water and dust protection
- GasAlert MicroClip XL for standard operation with 2-year warranty
- GasAlert MicroClip X3 for extended reliability with 3-year warranty

Description	Product Code
MicroClip XL (O2, LEL, CO, H2S)	481684
MicroClip X3 (O2, LEL, CO, H2S)	482660



### BW CLIP4 MULTI-GAS DETECTOR IT'S ON

The simplicity of "always on." The safety and quality of Honeywell.

When you've got your hands full in the field, you need no-hassle gas detection you can count on: the BW Clip4 four-gas detector.

- No charging, no battery replacement
- Low cost of ownership (2 Year Life then replace)
- Calibration can be done every 6 months by APC Techsafe or using the IntelliDoX
- Note: The unit will be supplied Switched "ON" and Calibrated with a Certificate

Description	Product Code
BW Clip4 (O2, LEL, CO, H2S)	483110



### GASALERT QUATTRO

The Quattro is a rugged solution of four-gas monitor. Its one-button operation and large LCD display make it easy to use and clearly identify operational information. With the option of either rechargeable or alkaline batteries the unit is always ready and reliable. With continuous monitoring of four gases the unit is ideal for a variety of applications including confined space entry.

- Rechargeable or alkaline battery option (20 hours rechargeable, 14 hours alkaline)
- Enhanced resistance to common industrial cross sensitive gases such as methanol and ethanol (CO and H2S sensors)
- Comprehensive datalogging and event logging capacity
- Flashing green IntelliFlash™ light for compliance at a glance
- Compatible with MicroDock II automatic test and calibration station
- IP-66 ingress protection rating

Description	Product Code
Quattro (O2, LEL, CO, H2S)	481680



### GASALERT MAXXT II PUMPED

The GasAlert Max XT II utilises a robust motorized pump for remote sampling, combined with an easy one-button operation it is the simple and smart four-gas compliance monitor. The continuous monitoring of four gases means the unit is ideal for a variety of applications such as personal protection and confined space entry.

- Robust motorized pump can sample from up to 23 meters
- Rechargeable battery, up to 13 hours runtime
- Flashing green IntelliFlash™ light for compliance at a glance
- Full self-test of sensor, battery status, circuit integrity and audible/visual alarms on start up
- Equipped with standard datalogging and event logging
- Compatible with MicroDock II automatic test and calibration station
- IP-66 ingress protection rating

Description	Product Code
Max XT II (O2, LEL, CO, H2S)	403749



## ACCESSORIES



### AUXILIARY FILTER KITS

Description	Code
Filter Kit MicroClip	402657
Filter Kit Quattro	481681



### CARRY CASE FOR INSTRUMENTS

Description	Code
Nanuk 904	482685



### PROTECTIVE RUBBERBOOT

Description	Code
GasAlert Quattro	482685
GasAlert Max XT	481002



### 5 BAY CHARGERS

Description	Code
GasAlert MicroClip	481067
GasAlert Quattro	481998
GasAlert Max XT	481509



### VEHICLE CHARGERS

Description	Code
MicroClip, Quattro And Max XT	481667

# PORTABLE GAS DETECTION

## ▼ MULTI GAS PERSONAL MONITORS

### MICRORAE

The MicroRAE™ is a wireless multi-gas diffusion monitor that simultaneously measures up to four gases, including hydrogen sulfide, carbon monoxide, oxygen and combustibles (LEL). With its multiple wireless connectivity options the MicroRAE can deliver real-time instrument readings location and alarm status to other wireless solutions such as ConneXt Plus, ConneXt Pro, ConneXt Loneworker and Safety Communicator.

- Honeywell ConneXt compatible with Mesh and Wi-Fi wireless configurations
- Real-time gas concentration reading, location, alarm and status enabled by state-of-the-art wireless technology
- Bluetooth® low energy connection to a Smart Phone device for uplink data communication and device configuration
- Compact and lightweight design
- IP-67 water- and dust-resistant case
- Strong, protective, concussion-proof design
- Unmistakable five-way local and remote wireless notification of alarm conditions
- Short bump test and calibration time
- Filtered LEL sensor options to inhibit sensor poisoning

#### Description

#### Product Code

MicroRAE Bluetooth (O2, LEL, CO, H2S) 482933



### QRAE 3 PUMPED

The QRAE 3 is a versatile, rugged, two to four sensor pumped gas monitor that provides continuous exposure monitoring of oxygen (O2), combustibles, and toxic gases, including hydrogen sulphide (H2S), carbon monoxide (CO), sulphur dioxide (SO2) and hydrogen cyanide (HCN) for workers and responders in hazardous environments.

- Pumped or diffusion models available
- Robust motorized pump can sample from up to 30 meters
- Rechargeable battery, up to 12 hours runtime
- Man Down Alarm
- Optional real-time wireless technology
- Full Continuous datalogging complete with software and cables
- Fully automated bump testing and calibration with AutoRAE 2 docking station
- 3 year warranty on LEL, O2, CO, H2S sensors

#### Description

#### Product Code

QRAE 3 Pumped

482648



### BW ULTRA

The Honeywell BW™ Ultra is a five-gas detector from Honeywell that is designed specifically for sampling and monitoring confined spaces, before and after entry. It benefits from unmatched sensor technology, visibility on gas readings, comfort, and connectivity – even in most extreme working conditions. The Honeywell BW™ Ultra simultaneously detects the four gases you're required to monitor in confined spaces. Plus there is a fifth sensor for the gas of your choice. This way you can add a fifth level of protection for your confined-space entries.

- Large, easy-to-view screen
- Enhanced situational awareness for the whole watch
- The new 1-Series sensor for enhanced reliability
- Honeywell TouchConnect™ Technology for quick instrument management
- Remote monitoring for an additional layer of protection
- Expected life time for sensors: up to five years



### MULTIRAE LITE PUMPED

This multi-gas monitor provides versatile, customizable detection and monitoring of up to six gases, available in both pumped and diffused air models. With more than 25 sensors to choose from — the broadest selection in its class — it can test for VOCs, combustibles, and a range of toxic threats, as well as monitor sufficient oxygen levels, making it an excellent choice for personal protection and leak detection in a range of industries and applications.

- Multi-gas monitor for 1-6 gases
- Pumped and diffusion models available
- Man down alarm with Optional real-time wireless technology
- Fully automatic bump testing and calibration
- 5-way local and remote wireless alarm



# BUMP TESTING - CALIBRATION SYSTEMS

## ↓ CONFINED SPACE KITS

### GAS DETECTOR AND BUMP TEST KITS

Our Confined space kits are supplied calibrated, certified and ready to use.

- Gas detector with four sensors (H2S, CO, O2 and CH4) (options below)
- Hard carry case
- Battery and charger
- Regulator, adaptor and tube
- 34L bump test gas cylinder

Description	Product Code
GasAlert MicroClip XL Confined Space Kit	482178
GasAlert MicroClip X3 Confined Space Kit	482671
GasAlert Quattro Confined Space Kit	482179
GasAlert Max XT II Confined Space Kit	482180
Bump Test Kit 34L No instrument	482238
Bump Test Kit 65L No instrument	482239



## ↓ CALIBRATION SYSTEMS

### MICRODOCK II CALIBRATION STATION

The MicroDock II is the most cost effective way to manage the calibration and bump testing of your BW portable gas detectors. Automated test and calibration, fully portable and easily expandable, the MicroDock II requires no computer and provides simultaneous management of up to six modules. Minimize expenses and maximize productivity with the MicroDock II.

- Quick and easy compliance - automatically maintain accurate records
- Automatic bump testing, calibration, record keeping and charging
- One base station with one AC outlet supports up to six modules to suit your application
- Verifies proper performance of detectors
- Battery powered
- \*Gas & Regulator required - Enquire for options

#### Quick Specs

- Size 8.3 x 10.4 x 3.2 in. / 21.2 x 26.3 x 8.2 cm (base station plus one docking module)
- Power supply 6V wall adaptor or four C-cell batteries
- Real-time clock Provides time and date stamp for
- "last calibration" and "last bump test" data
- Data storage Automatic (instrument and base station)
- MultiMediaCard data storage system

Description	Product Code
MicroDock II Control Module (Required)	481216
GasAlert MicroClip XT, XL, X3 Cradle	481217
GasAlert Quattro Cradle	481221
GasAlert Max XT II Cradle	481616
Carry case	482247



## CARE AND STORAGE

### MAINTAIN DETECTORS WITH CARE TO ENSURE SAFE OPERATION

- Service and calibrate at least every 6 months
- Do not clean with anything other than a warm damp cloth
- Do not use or store near silicone-based products
- Keep sensor screens clean and free of debris or obstructions
- Do not poke holes in sensor screens
- Do not store in direct sunlight
- Replace inlet filters
- Do not poke holes in sensor screens
- Do not store in direct sunlight
- Replace inlet filters



→ USE PROTECTIVE FILTERS TO KEEP SENSORS CLEAN AND FUNCTIONING CORRECTLY

# BUMP TESTING - CALIBRATION SYSTEMS

## ↓ CALIBRATION SYSTEMS

### INTELLIDOX

The IntelliDoX system combines smart docking modules and Fleet Manager II software to provide automated instrument management for BW Clip Series, GasAlertMicroClip Series and ConneX1 gas detectors - helping you drive productivity, reliability and efficiency.

#### Features & Benefits

- Enables bump test tracking, email notices and easy recordkeeping for improved compliance
- Performs the quickest bump test in the industry for increased uptime and no wasted calibration gas
- Enables the ability to change alarm set points, set a noncompliance indicator when a bump test is due, and adjust other parameters for maximum flexibility

#### Quick specs

- Easy setup with a network or USB drive — no tools required
  - Expandable to five docking modules that can operate independently, while sharing power, network connection and calibration gas
  - Easy data transfer — by Ethernet or USB — from docking module to computer
- \*Gas & Regulator required – enquire for options



### AUTORAE 2 DOCK

The AutoRAE 2 Automatic Test and Calibration System makes compliance with gas monitor test and calibration requirements as easy as pressing a button. Simply cradle the monitor and the system will take care of all calibration, testing, recharging, and calibration record keeping. The AutoRAE 2 is a flexible modular system that can be configured to meet your requirements effectively and efficiently.

An AutoRAE 2 system can be as simple as a single cradle deployed in a standalone mode to calibrate one instrument at a time using up to two different gas cylinders, or as powerful as a controller-based system supporting 10 instruments and 5 gas cylinders.

- Easy, one touch bump testing, calibration, charging and records management
  - Supports a wide variety of gases, including exotics
  - Optimised for field use - does not require a computer to operate
  - Deployable as a standalone cradle or a controller-based system with up to 10 cradles
  - Networking capability - Data storage on a standard SD card
- \*Gas & Regulator required – enquire for options

#### Description

#### Product Code

AutoRAE 2 Controller	482702
ToxiRAE Pro Cradle	482703
MicroRAE Cradle	483112
QRAE 3 Cradle	482286
MultiRAE Pumped Cradle	482398
MiniRAE/ppbRAE Cradle	482929





# CALIBRATION & BUMP TEST GAS

## ↓ GAS CYLINDERS

### QUAD GAS MIXTURES

For calibrating or bump testing multi-gas instruments with H2S, CO, O2 and LEL sensors, Ideal for use with automated bump test and calibration stations with the demand flow regulator. Alternatively for manual bump test and calibrations use with a fixed flow regulator and your instruments calibration cap.

Non-refillable cylinders are available for most gas mixtures, sizes available are 34L, 65L and 112L.



#### Description

Gas 34L 4-Gas Mix with Methane in N2 (100ppm CO, 25ppm H2S, 50% LEL, 18% O2)  
 Gas 34L 4-Gas MSA mix with Methane (60ppm CO, 20ppm H2S, 1.45% CH4, 15% O2)  
 Gas 65L 4-Gas Mix with Methane in N2 (100ppm CO, 25ppm H2S, 50% LEL, 18% O2)  
 Gas 112L 4-Gas Mix with Methane in N2 (100ppm CO, 25ppm H2S, 50% LEL, 18% O2)  
 Gas 65L 4-Gas Mix with Pentane in N2 (100ppm CO, 25ppm H2S, 25% LEL, 18% O2)  
 Gas 65L 4-Gas Mix with Propane in N2 (100ppm CO, 25ppm H2S, 50% LEL, 18% O2)

#### Product Code

481331  
 482675  
 481015  
 481106  
 481510  
 481108

### SINGLE GAS MIXTURES

Non-refillable cylinders are available for most gas mixtures, whether it is a single gas or a complex blend.

The 103DS non-refillable cylinder is available for non-corrosive gas mixtures such as hydrocarbons, CO, CO2, N2, O2, refrigerants and many others whether it is a single gas or a complex blend.

The 112DA aluminium cylinder can be used for all gas types including corrosive gases such as H2S, HCN, HCL, NH3, NO, NO2, SO2 and many others.

#### Description

Gas 112L Ammonia in Air (50ppm NH3)  
 Gas 112L Hydrogen Sulphide in Air (25ppm H2S)  
 Gas 112L Nitrogen Dioxide in Air (5ppm NO2)  
 Gas 112L Sulphur Dioxide in Air (10ppm SO2)  
 Gas 103L Carbon Dioxide in Air (1.0% Vol CO2)  
 Gas 103L Carbon Monoxide in Air (1000ppm CO)  
 Gas 34L Isobutylene in Air (100ppm Isobutylene)  
 Gas 103L Isobutylene in Air (100ppm Isobutylene)  
 Gas 103L Methane in Air (50% LEL)  
 Gas 103L Pentane in Air (50% LEL)  
 Gas 103L Propane in Air (50% LEL)  
 Gas 103L Nitrogen (100% Nitrogen)  
 Gas 103L Synthetic Zero Air

#### Product Code

481298  
 481297  
 481631  
 481017  
 481358  
 481856  
 482047  
 481105  
 481442  
 481018  
 481019  
 481299  
 481295



### HARD CARRY CASE

Hard Carry Case for your Gas Cylinders & Regulators.

- Impact Resistant Hard Sided Cases
- Holds 1-3 cylinders
- Waterproof – IP67 Rated
- L424mm x W340mm x H173mm

#### Description

CARRY CASE, for Cylinders  
 [For all 34/65/103/112L Cylinders]

#### Product Code

482718



## CARE AND STORAGE

### YOU NEED TO BUMP TEST EVERY DAY

A bump test prior to each day's use assures you that the sensors and alarms of your unit will function properly before entering a hazardous area.

A daily bump test should be part of the standard operating procedures when using a gas detector.



### ALWAYS BUMP TEST BEFORE STARTING WORK, DON'T ASSUME YOUR DETECTOR IS FUNCTIONING CORRECTLY.

- Other events that should prompt a bump test may include:
- If there is doubt whether the gas detector sensors are functioning properly
- If a sensor has been subjected to a concentration of gas that exceeds the measuring range
- If a combustible gas sensor has been exposed to a known poison or inhibitor (e.g. silicone sprays, brake cleaners, high sulphide levels)
- If a detector has been subjected to abnormal physical shock or damage

# REGULATORS & GASTEC TUBES

## ↓ REGULATORS & TUBING

### REGULATOR AND ACCESSORIES

Regulators for non-refillable cylinders are available in a variety of styles and materials to provide the highest accuracy and greatest reliability when calibrating and testing gas monitoring instruments. The Fixed Flow Series regulators and the Demand Flow Series regulators are available in both Nickel Plated Brass and Stainless Steel. Stainless Steel is highly recommended for corrosive applications such as Ammonia.

The Variable Flow regulator provides flexibility for those requiring multiple flow rates for different instruments. Tubing and carrying cases are available to provide a complete calibration gas solution.

### FIXED FLOW REGULATOR

Designed to manually bump test or calibrate gas detectors.

Description	Product Code
0.3L/min for Aluminium and Steel Cylinders	481124
0.5L/min for Aluminium and Steel Cylinders	481125
1.0L/min for Aluminium and Steel Cylinders	482215
0.5L/min Stainless Steel for Aluminium Cylinders	481621
1.0L/min Stainless Steel for Aluminium Cylinders	481622



### DEMAND FLOW REGULATOR

Designed for use with instruments fitted with a sample pump or automatic calibration stations.

Description	Product Code
Demand Flow for Aluminium and Steel Cylinders	481566
Demand Flow Stainless Steel for Aluminium Cylinders	481620



### VARIABLE FLOW REGULATOR

Variable flow regulator which can be set between 0.5 L-5L/min to match your instruments flow rate.

Description	Product Code
0.5 - 5L/min for Aluminium and Steel Cylinders	481422



### TYGON TUBING

Tygon Tubing Corrosive Resistant tube Tygon SE-200 FEP Lining Tube (3/16"ID x 5/16"OD)

Description	Product Code
Per meter (not for use with PID/CL2)	481873
Per meter (FEP Lining)	482935



## ↓ GASTEC SAMPLING KITS

### GASTEC SAMPLING PUMP KITS

- Quick and easy sampling
- Built in tip breaker
- Supplied with case, lubricant and instructions
- Available with automatic sampling stroke counter

Description	Product Code
Pump GV-100S (standard)	480122
Pump GV-110S (with counter)	480123



### GASTEC TUBES

Gastec gas detector tubes are thin glass tubes with calibration scales so you can directly read concentrations of the gases and vapours to be measured. Each tube contains detection reagent(s) that are sensitive to the target substance and quickly produce a distinct layer of colour change.

- Over 500 different tubes are available
- On-site measurements can be performed quickly and easily
- Easy to check direct reading system
- Use with the Gastec sampling pump 480122 or 480123



Description	Product Code	Description	Product Code
75L Butyl Mercaptan	480318	2H Carbon Dioxide	480261
4H Hydrogen Sulphide	480282	4LT Hydrogen Sulphide	480290
70L Total Mercaptans	480311	1LC Carbon Monoxide	480247
2LC Carbon Dioxide	480264	4LL Hydrogen Sulphide	480289
3L Ammonia	480275	6L Water Vapour	480307

# PHOTOIONIZATION DETECTORS (PID)

## ↓ PID DETECTORS

### MINIRAE LITE

### MINIRAE 3000

### PPBRAE 3000

The 3000 series of PID are the most reliable handheld volatile organic compound (VOC) monitors available. The different models make them the ideal instruments for applications ranging from environmental monitoring, construction, Hazmat, homeland security, industrial hygiene, indoor air quality and military applications.

- Proven PID technology with patented sensor
- Large graphic displays
- Three second response time, ranges of ppb and ppm with improved linearity and humidity compensation
- Field interchangeable battery pack
- Integrated RAE Systems Corrections Factors list more than 200 compounds
- Sensor and lamp auto-cleaning
- Loud 95dB audible alarm

#### Description

MiniRAE Lite – (0.0-2,000 PPM)  
 MiniRAE 3000 – (0.0-15,000 PPM)  
 ppbRAE 3000 – (0-10,000 ppb)



#### Product Code

482087  
 481584

### TOXIRAE PRO PID

The ToxiRAE Pro PID is a small and smart solution for monitoring Volatile organic Compounds (VOCs). The unit offers continuous datalogging and can be used for applications such as environmental monitoring and industrial hygiene and safety.

- World's smallest PID with wireless access elevating worker protection to the next level
- Cutting edge PID with 0.1 to 2,000ppm range and 190 built-in correction factors
- Rechargeable Li-ion battery with up to 12 hours run time
- Available in Industrial Hygiene (advanced) or Safety (standard) configurations
- Wireless access to real-time instrument readings and alarm status from any location
- Reliable, rugged and intrinsically safe
- Continuous datalogging
- IP-54 ingress protection rating

#### Description

ToxiRAE Pro PID (Hygiene)

#### Product Code

481309



### ULTRARAE 3000

The UltraRAE 3000 is the most advanced compound-specific monitor on the market and one of the few monitors that deliver accurate measurement of benzene from 50 ppb to 200 ppm and other VOCs up to 10,000 ppm. A 60-second response for a benzene measurement snapshot and a unique 15-minute benzene STEL measurement provide excellent versatility for entry pre-screening, marine spill response, and refinery down-stream monitoring.

- 60-second snapshot measurement option and unique 15-minute STEL measurement
- Correction factors for more than 350 compounds
- 9.8eV UV lamp for benzene and TVOC and 10.6 and 11.7 lamps for TVOC
- RAEsep benzene tube for compound-specific measurement
- Sample pump draws from up to 100 feet
- Large display reports gas type, correction factor, concentration
- Rugged housing for harsh environments
- Sensor and lamp auto-cleaning

#### Description

UltraRAE 3000 – (Benzene, 0.05 to 10,000 ppm)

#### Product Code

481876



### MEASURING VOLATILE ORGANIC COMPOUNDS (VOC'S)

Many explosive hazardous substances are toxic for humans, at levels markedly below the Lower Explosive Limit (LEL) and cannot be detected at these levels by using only catalytic sensors.

Reliable detection of such substances in the ppm range can be accomplished using photoionization detectors (PIDs).



**A PID IS A VERY SENSITIVE BROAD-SPECTRUM MONITOR HOWEVER A PID IS NOT A SELECTIVE MONITOR AND HAS VERY LITTLE ABILITY TO DIFFERENTIATE BETWEEN CHEMICALS.**



PHOTOIONIZATION DETECTORS (PID)

# MULTI GAS PHOTOIONIZATION DETECTORS (PID)

## ↓ MULTI GAS SURVEY MONITORS

### MULTIRAE SERIES MULTI GAS DETECTOR

Elevate the safety of workers and first responders, and reduce downtime with the MultiRAE family of monitors that combine best-in-class gas and radiation detection capabilities with wireless connectivity and alarms. MultiRAE instruments can be configured with 20+ sensor options, including ppb and ppm, PID, NDIR, and exotics to match the monitoring needs of multiple applications. MultiRAE monitors provide protection in the most hazardous conditions.

### MULTIRAE LITE / MULTIRAE

This multi-gas monitor provides versatile, customizable detection and monitoring of up to six gases, available in both pumped and diffused air models. With more than 25 sensors to choose from — the broadest selection in its class — it can test for VOCs, combustibles, and a range of toxic threats, as well as monitor sufficient oxygen levels, making it an excellent choice for personal protection and leak detection in a range of industries and applications. The wireless connection sends threat and alarm data in real time to a central command, providing superior awareness for fast incident response. And its replaceable sensors, alarm, and battery, large screen, and automated bump testing and calibration make it easy to use and maintain.

#### Features & Benefits

- Multi-gas monitor for 1-6 gases
- Man down alarm
- More than 25 different chemical sensors
- Fully automatic bump testing and calibration
- Real-time access to readings at central command Swap out sensors as needed
- Simple maintenance with replaceable sensors, pump, and battery
- 5-way local and remote wireless alarm
- MultiRAE Lite – 0.1ppm-1000ppm range 10.6eV lamp
- MultiRAE – 0.1ppm-5000ppm range 10.6eV lamp
- IR CO2 Sensor – 0 to 50,000 ppm range

#### Description

MultiRAE Lite – Pumped (O2, LEL CO, H2S, CO2)  
MultiRAE Lite – Pumped (O2, LEL CO, H2S, PID)

#### Product Code

482138  
481978



### MULTIRAE PRO / MULTIRAE BENZENE

The MultiRAE Pro is an industry-leading wireless device which monitors both chemical threats and gamma radiation and is the only multi-threat monitor with parts per billion precision. The MultiRAE Benzene monitor combines the ability to make quick benzene-specific assessment ("snapshot") measurements.

Its optional wireless capability with the ability to wirelessly transmit threat and alarm data in real time to a central command station, the MultiRAE Pro/Benzene offers improved visibility and awareness. They also give you the flexibility to swap out over 20 different sensors for a range of threats, including VOCs, toxic gases, combustibles, oxygen levels, as well as gamma radiation detection. The large display and replaceable sensors, pump, and battery make it easy to use and maintain, while five different alarms, including man down, provide the versatility you need to respond appropriately and quickly to incidents.

#### Features & Benefits

- PID sensor range of 0 to 5000ppm for detection of VOC's,
- PID ppb sensor range of 0 to 2000ppm with 10ppb resolution
- Industry-leading wireless multi-threat device
- Simultaneous monitoring of chemical threats and gamma radiation
- Real-time data access from central command
- More than 25 different chemical sensors
- Man down alarm
- Simple maintenance with replaceable sensors, pump, and battery
- Fully automatic bump testing and calibration with AutoRAE 2
- 5-way local and remote wireless alarm

#### Features & Benefits MultiRAE Benzene

- VOC 9.8eV lamp 0.1 to 2,000 ppm
- Optional integrated wireless
- Snapshot Benzene specific measurement capability
- 20 field-interchangeable sensor options, including PID, LEL, and exotics
- Five local and remote alarms, including man down
- Continuous data logging — six months for five sensors 24/7
- Fully automated bump testing and calibration with AutoRAE 2



# WIRELESS SOLUTIONS & WIRELESS GAS DETECTION

## ↓ WIRELESS FOUR GAS PORTABLE DETECTION

### MICRORAE

The MicroRAE™ is a wireless multi-gas diffusion monitor that simultaneously measures up to four gases, including hydrogen sulphide, carbon monoxide, oxygen and combustibles (LEL). With its multiple wireless connectivity options the MicroRAE can deliver real-time instrument readings, location and alarm status to other wireless solutions such as ConneXt Plus, ConneXt Pro, ConneXt Loneworker and Safety Communicator.

- Real-time gas concentration reading, location, alarm and status enabled by state-of-the-art wireless technology
- Bluetooth low energy connection to a Smart Phone device for uplink data communication and device configuration
- Rechargeable battery up to 15 hours continuous runtime
- Man Down Alarm with real-time remote wireless notification
- GPS module for location
- Full Continuous datalogging complete with software and cables
- Fully automated bump testing and calibration with AutoRAE 2 docking station
- IP-67 water- and dust-resistant case

#### Description

MicroRAE Bluetooth (O2, LEL, CO, H2S)  
 MicroRAE Bluetooth, Wireless 900MHz + GPS (O2, LEL, CO, H2S)  
 MicroRAE Bluetooth, Wireless, WIFI + GPS (O2, LEL, CO, H2S)

#### Product Code

482933  
 482833  
 482934



## ↓ CLOSED-LOOP WIRELESS SYSTEM

### ECHOVIEW HOST MINI-CONTROLLER

A rugged handheld device that can establish a self-contained wireless network with up to eight supported RAE Systems portable monitors and display their readings and alarm status in real time on an easy-to-read screen.

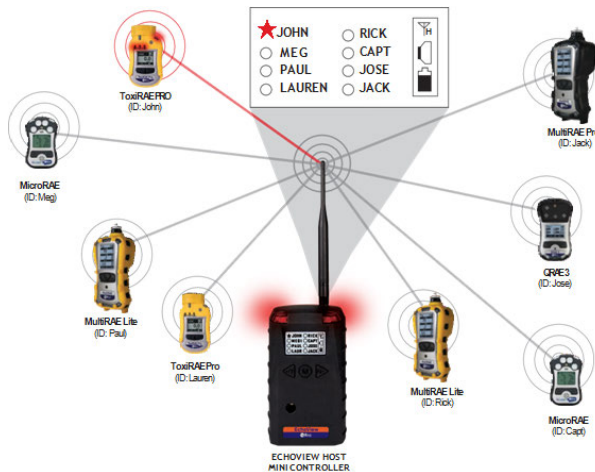
- Establishes a closed-loop wireless network with and displays real-time readings and alarm status of up to eight portable gas monitors at the same time
- Communication range extendable to 0.6 mi (1 km) with Mesh Routers
- Field-replaceable battery with a 10-day runtime
- Loud audible alarm, 90dB @ 30cm, red high-visibility alarm lights
- Highly-resistant to electromagnetic and radio interference
- IP-65 water and dust ingress protection rating
- Enquire for more information

#### Description

Echoview Host 900Hz

#### Product Code

482284



The Echoview Closed-Loop Wireless Solution provide you real-time access to the readings and alarm status of the worker's gas monitors to enable visibility for faster incident response.

WIRELESS SOLUTIONS & WIRELESS GAS DETECTION

# WIRELESS SOLUTIONS & LOCAL AREA MONITORING

## ↓ WIRELESS LOCAL AREA MONITOR

### AREARAE PLUS / AREARAE PRO

#### Remote visibility on more threats than ever for a new level of real-time situational awareness

AreaRAE Pro is a wireless, transportable area monitor that can simultaneously detect toxic and combustible gases, volatile organic chemicals, radiation and meteorological factors. Whether you're carrying it into a hazmat response, setting up a perimeter at a fire or protecting a public venue, the AreaRAE Pro works with Honeywell's remote monitoring software to give you a real-time view of threat readings, so you can ensure the safety of your teams and the general public. In addition to supporting long-distance remote monitoring, AreaRAE Pro comes with a built-in mesh modem to facilitate short-range monitoring. AreaRAE Pro has a strong 108-decibel alarm, audible even in noisy environments. The monitor also has wraparound LEDs for maximum visibility, even in sunlight.

- Six 4R+ sensors slots for toxic and combustible gas, choose from more than 20 sensors based on your needs
- New 7R+ photoionization detector, Monitor VOCs at parts per billion, with built-in compensation for temperature and humidity
- New meteorological sensor for tracking toxic plumes. Use the RAEMet, a 5-inch-tall sensor on top of the AreaRAE Pro, to measure wind speed, direction and other factors
- Optional gamma sensor for radiation detection, The gamma sensor has its own dedicated slot.
- Enhanced wireless connectivity, Primary (Long Range) – ISM, Wi-Fi network option
- Easy to use and deploy, so emergency response can be expedited and adapt to changing needs
- IP 65 Rating Ingress Protection



*AreaRAE Plus & AreaRAE Pro Multiple gas threats. One easy-to-use transportable area detector AreaRAE Pro & AreaRAE Plus are wireless, transportable area monitors that can simultaneously detect toxic and combustible gases, volatile organic compounds, radiation and meteorological factors*



# WIRELESS SOLUTIONS & LOCAL AREA MONITORING

## ↓ SEMI-TRANSPORTABLE WIRELESS GAS DETECTION SOLUTION

### MESHGUARD WIRELESS GAS DETECTION SOLUTION

The RAE Systems by Honeywell MeshGuard gas detection monitor is a key building block of the MeshGuard intelligent network of connected sensors for gas detection in industrial safety and oil and gas applications. The MeshGuard system is designed for quick deployment in areas where low cost/high ROI solutions are required. MeshGuard is available with field-replaceable precision sensors specifically designed to sense toxic and flammable gases. MeshGuard wireless gas detectors are designed for use in the harshest outdoor environments such as drilling rigs and in other industrial applications.

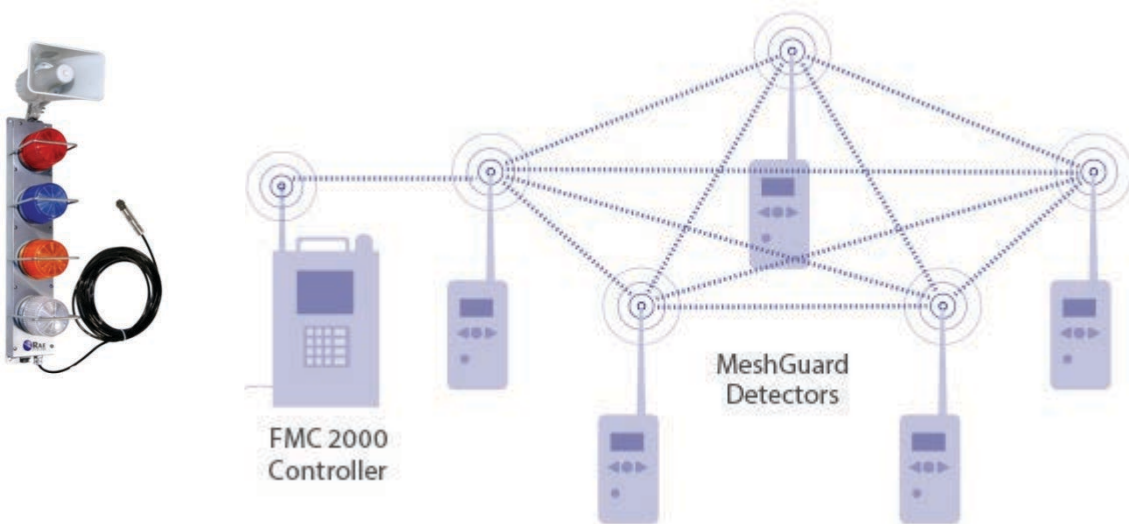
The FMC 2000 is a multi-channel controller with a built-in wireless modem. The FMC 2000 is the command-and-control element of the MeshGuard system that gathers data and monitors alarms from MeshGuard toxic and flammable gas monitors. The built-in wireless modem automatically links with MeshGuard monitors and the controller has built-in security safeguards to resist tampering. Wirelessly gather sensor and alarm data from up to 24 monitors with this multi-channel controller.

The command and control centre of the MeshGuard intelligent, self-healing network, this fixed device features five programmable relays to trigger alarms or process controls, a large LCD display, and digital or Ethernet outputs. With DC power input it provides quick installation with magnets, and intuitive operation.

- Wireless multi-channel controller
- Self-forming wireless network units come online automatically
- Runs off DC power, with battery back-up for up to 15 hours of operation
- Command & control centre for a MeshGuard network Manages up to 24 wireless sensors
- Quick, easy installation with Rugged housing
- 5 programmable SPOT relay outputs
- RS-485, Modbus, and Ethernet interfaces
- Compatible with ProRAE Guardian Software
- Optional SolarPak provides 24/7 uptime
- Optional wireless or hard-wired alarm bar(s)
- IP-65 rated weather resistant
- Enquire for more information



The FMC 2000 Controller Supports up to 24 MeshGuard Detectors Wirelessly



#### Description

FMC 2000 2.4GHZ Controller Kit  
 MeshGuard Detector, H2S 0-100ppm  
 MeshGuard Detector, Methane IR 0-100% LEL  
 MeshGuard Detector, CO 0-2000ppm  
 MeshGuard Detector, CO2 IR 0-5% Vol  
 Wired Alarm bar, 4 visual & 1 audible alarm, Atex  
 Wireless Alarm bar, DC 2 visual & 1 audible alarm, Atex  
 Magnet Mount, SS for MeshGuard  
 Carry Case

#### Product Code

482932  
 482936  
 482937  
 482938  
 482939  
 482940  
 482941  
 482942  
 482842

# WIRELESS INFRASTRUCTURE

## MOBILE COMMAND CENTRE AND DEVICE FLEET MANAGER

### PRORAE GUARDIAN

The ProRAE Guardian System wirelessly delivers real-time personal and point threat-detection data on toxic gases and radiation, worker/responders' location and physiological condition. It provides situational awareness, tracks and identifies toxic chemicals, radiation, and plumes, and enables faster data-driven decision making to protect workers and the public and reduces incident response times.

ProRAE Guardian integrates instrument data and alarm status from up to 512 RAE Systems toxic gas and radiation monitors and select third-party devices on a single dynamic map, and allows the information to be shared by multiple plant managers or responder teams through a secure Internet connection. The real-time data can be viewed remotely on a PC, Smartphone or tablet.

#### ProRAE Guardian Care Centre

ProRAE Guardian Care Centre provides advanced device management that enables managers to oversee their fleet of monitors and track worker device assignments. Care Centre can automate common tasks and create custom alerts which improve worker productivity.

#### Features & Benefits

Real-time display of device status, sensor readings, and alarms

- Integrated Google Maps show precise instrument locations with alarm status
- Data logging in text and graphical formats, and includes boolean filters
- Supports all RAE Systems wireless enabled products
- Supports up to 512 instruments simultaneously
- Dashboard for overall system status
- Fleet management for instruments
- Activity automation for calibration, bump test and report generation
- Custom rules for alarm notifications
- Remote notifications via email and text messages
- Worker-instrument association
- Security features for data protection and networking
- Software Development Kit for integration with external systems



Area Monitor with Personal Monitors

**ProRAE Guardian Real-Time Wireless Safety System**

COMMAND CENTER RAE CENTER

Data Options Add-Ons License Status LogView  
System Google Map

Map Satellite Hybrid  
Lat: 37.39987, Lng: -121.88216

SN	Location	Update Time	Spd	Dir	Temp	Solar	HT	CO	VOC	H2S
0100	WL NM	09:56:13			0.0					0.0
43F0	MeshGuard	13:55:43			0.0					0.0
D0127022L		13:55:31			0.0					0.0
002C	WUNM	10:38:40			0.0					0.0
0045	WL NM	13:55:43			76.3					0.0

Device Information

Time	Humidity	Temp	HT
13:55:30	1.4	248	83.8
13:55:32	1.4	248	83.8
13:55:34	1.4	248	83.8
13:55:37	1.4	248	83.8
13:55:38	1.4	298	83.6
13:55:40	1.4	298	83.6
13:55:42	1.4	298	83.6
13:55:44	1.4	298	83.6
13:55:46	1.4	298	83.6
13:55:48	1.4	298	83.6

Sensor Status: Ok Ok Ok

Data Records Data Graph Dev

System Information

239-000001

03/09/2010 09:55:41: Listen on TCP port 5723  
03/09/2010 09:55:41: Connect to 66.220.13.146:9726  
03/09/2010 10:05:32: Disconnect from 66.220.13.146:9726  
03/09/2010 10:05:44: Connect to 66.220.13.146:9726

Notice Warnings Alarms





# GAS LEAK DETECTION

## ↓ GAS DISTRIBUTION

### GOLIATH - Detect - Warn - Measure - Analyse

The GOLIATH is perfectly suited for use in a troubleshooting service. In addition to the typical application of a reported odour of gas, a large proportion of uses are based on the statement 'no gas present'. In such case, the fitter will have to determine the cause and has been informed of the pressure measurement in the gas installation. The GOLIATH is perfectly suited to this task as well, with its measurement range of 0 to 2,000 hPa (optional pressure sensor).

Measuring carbon monoxide concentrations in addition to monitoring flammable gases is a time-tested practice at many gas supply companies. For this reason, the 'Building inspection' application also indicates the CO concentration and triggers an alarm if it exceeds 10 ppm. This keeps the operator informed of potential problems with the exhaust gas routing.

- Time-tested Esders operation concept
- Flammable, PPM, LEL, VOL
- Very quick initial break-in phase after being switched on or changing application.
- Extremely short reaction times when measuring CH<sub>4</sub> and CO<sub>2</sub> in all concentrations.
- Oxygen and up to 3 toxic gas sensors are available as an option.
- Ethane analysis with automatic measurement result assessment can be integrated.
- Optional pressure measuring up to 2,000 hPa.



### BLUETOOTH MODULE - GOLIATH

Infra-red Bluetooth module for the remote transmission of device measurement data - directly from the construction site to the office.

Logging and evaluating measurement data is essential for the acceptance of installations and pipes by the client. But we are faced with the problem of making the measurement data available in the office for processing. Until now, the devices themselves or storage media had to be physically transported for this. Esders GmbH has therefore developed the "Esders Bluetooth Module" to read out this data via the device interface following the measurement process and to forward the data to a recipient for further processing via an Android App.

In addition to the time savings afforded by no longer having to bring the devices into the factory and read out the data, there is the added advantage that the data can be processed sooner and spread out over the week.

- Remote transmission of measurement data via Bluetooth connection of an Android-enabled end device
- Transfer of the latest measurement data from the construction site directly to the office for evaluation and acceptance by the customer
- Quicker invoicing for construction sites
- Increased safety through constant data back-up
- Simple and problem-free handling through one button operation and Android App
- Operating time of over one month (during frequent use) without charging
- Robust design in ergonomic aluminum housing
- Can be used with any number of Android end devices
- Can be used with any number of Esders devices



### ESDERS Pi NOTE SOFTWARE

The software enables easy and low-cost documentation of work when carrying out inspections on gas pipes. In contrast to GIS solutions, which require a high-quality PC and involve the time-consuming import of pipeline data, Pi Note is a GPS datalogger for Android terminal devices, that enables easy logging of damage, defects and photos. Continuous recording of gas concentrations is possible via a Bluetooth data connection to the Esders measurement devices ELLI, GOLIATH and HUNTER. Positions where a specified alarm threshold was exceeded are recorded and registered separately. The route and the positions of data recordings and alarm thresholds being exceeded are marked in a map.

- Saving the route and gas readings, GPS location
- Recording points of interest (defects, faults and damage)
- Photos of POIs
- Classification of defects and damage
- Can be used with ELLI, HUNTER and GOLIATH



# GAS LEAK DETECTION

## ↓ GAS DISTRIBUTION

### GAS TEST DELTA3

Thanks to our long-standing experience in the field of pressure and leak measurements, we are now offering the third generation of our tried-and-tested measurement technology. The GasTest delta3 has significantly improved options for measurements on indoor gas installations. It also offers the option of service line tests via external pressure sensors.

- Usability test in accordance with G5952 or Esders express procedure
- Leak detection via external, digital hand sensor with integrated calibration and vibration alarm
- Automatic and manual test on controllers and safety valves
- Leak test with 150 mbar, strength test with 1 bar
- Pressure measurement up to 25 bar via external sensors
- Large display with touch function for inputting address data, meter or controller number, etc.
- Extensive setting options for demand-based adjustment of the device
- Customer-specific data recording via checkboxes, selection list and text fields
- Bluetooth function for fast transfer of the measurement data to thermal printers and PC
- Compact transport cases with integrated gas reservoir and the option of storing accessories
- Optional thermal printer for quick documentation on-site
- Optional PC software for documenting and preparing the measured data



### GASCAM® SG METHANE LEAK DETECTOR

Visualization of Methane

The new GasCam® SG model offers you a significantly lighter and more compact system. As a highly specialised system for the detection of methane, it is the ideal choice for the detection of leaks in biogas and natural gas systems. Methane can be detected reliably even from distances of up to 100 metres, and is displayed against the background as a coloured gas cloud in real time.

Inspect natural gas and biogas plants for tightness and methane emissions more quickly. The question of whether natural gas or biogas plants are safe or not largely depends on whether they are leakproof. Unknown and undiscovered gas escapes in natural gas and biogas plants thus pose a great danger. The methane contained in these gases can not only turn into an ignition hazardous mixture with the ambient air, but is also a greenhouse gas which is 22 times stronger than CO<sub>2</sub>. Therefore, leaks in gas-containing plants must be determined quickly and precisely in order to ensure the plant's safe operation. Up to now, it has been very troublesome and above all time-consuming and cost-intensive to down gas escapes by using conventional flame ionisation or semiconductor gas detectors. The search for leaks can now be conducted much more quickly. This is enabled by the GasCam® SG from Esders, a mobile infrared detector measuring unit, which diagnoses gas clouds at gas containing plants in real time and immediately provides the user with a colour moving images of the escaping methane cloud. GasCam® SG can be up to 100 metres away from the object being measured. The measurement system's big benefit: leaks are discovered immediately and the point of escape is located.



### ELLI PORTABLE LASER METHANE LEAK DETECTOR

ELLI is an innovative, portable laser methane (CH<sub>4</sub>) measuring device that can be easily monitor difficult or impossible to reach areas and hazardous areas from a distance.

By the TDLAS (Tunable Diode Laser Absorption Spectroscopy) detection technology, it is possible for the user to determine methane safe from a distance. For this purpose, the laser beam must be directed only to the post to be checked. This detection technology therefore provides a high added value for the user who does not have to enter a potential hazardous area for the inspection of pipelines. Only in the event of a gas leak properly trained staff must be employed by an Identified leak check and seal. Previously it was very difficult and especially time-consuming and costly to detect gas leaks using conventional flame ionization or semiconductor gas detectors. By this significantly reduced verification effort the review of gas leading systems or pipelines is very cost effective compared to conventional verification methods.

- Colored LCD touch screen
- Selective detection of methane
- Integrated GPS and bluetooth functionality
- User-defined alarm threshold
- Rugged housing design IP54
- Very fast reaction for the detection of smallest amounts of methane
- Detection of methane also by multiple insulating glazing
- Simple, intuitive operation via function keys and touch screen
- No cross sensitivity to other hydrocarbons
- Green laser marker "CLASS 2M" for optimum visibility measuring range, even in direct sunlight
- Choice of graphical or numerical display of the measured values
- Monitoring of reflection quality by appropriate optical and acoustic indication
- Rechargeable Li-ion Battery for 8 hours working time



# AIR QUALITY MONITORING

## ▼ PORTABLE CO2 ANALYSER & INDOOR AIR QUALITY MONITORS

### G100

The G100 provides the user with a fast, simple to use and accurate piece of laboratory kit. The key benefit of using the G100 is the ability to take simultaneous CO2, O2, relative humidity and temperature readings.

- The G100 enables quick verification and validation of CO2 levels in incubators
- Used and distributed globally to the medical and research industries
- CO2 measurement levels between 0-20%
- Improved accuracy on CO2 readings
- Optional extra gases: measures O2 (0-100%); dual temperature probe (0-50 degrees C); humidity sensor (0-100%)
- Large data storage and data download available for all your readings
- Accessories available enables you to make more of your unit by allowing further measuring options

#### CODE

**481225** G100 Incubator Analyser (CO2,O2)

Complete with Internal Pump, Battery Charger and Sample Tube / Filters.



### G110

The G110 CO2 analyser designed to monitor CO2 for multiple applications, including brewing industry. This unit has been developed to incorporate the latest technology and specification requirements, that provide the user with a fast, simple to use analyser.

- Measures CO2 0-100%
- Built in gas moisture removal
- Measure O2 0-100%
- Dual temperature probes
- Humidity sensor 0-100%
- Data download and storage
- Accurate CO2 readings
- Quick verification of CO2 levels
- Time saving with dual temperature probes
- Large data storage and user friendly software for download
- Built in gas moisture removal



### G150

This unit has been developed to incorporate the latest technology and specification requirements to provide you with a fast, simple to use and accurate piece of environmental field kit.

- Measure CO2 0-10000ppm
- Optional extra gases: measures O2 (0-100%); dual temperature probe (0-50 degrees C); humidity sensor (0-100%)
- Built in gas moisture removal
- Quick verification of CO2 levels for site audits
- Improved accuracy on CO2 readings
- Large data storage and data download available for all your readings
- Accessories available enables you to make more of your unit by allowing further measuring options

#### CODE

**480442** G150 IAQ Analyser (CO2) Complete with Internal Pump, Battery Charger and Sample Tube / Filters.



### G210

Geotech's portable and lightweight G210 has been developed to measure piped hospital gas and leak detection in hospitals.

- Measures 0-100% N2O
- Measures 0-2000ppm CO2
- Optional: 0-100% O2; 0-500ppm CO
- Data storage with site and ID input
- User alarms
- Easy user calibration
- Quick verification of gas quality – 4 gases measured in one analyser
- Enables user to enter specific site and IDs for monitoring points
- Identifies contaminants CO and CO2



# LANDFILL/BIOGAS MONITORING

## ↓ LANDFILL / BIOGAS MONITORS

### GA5000

The ProRAE Guardian System wirelessly delivers real-time personal and point threat-detection data on toxic gases and radiation, worker/responders' location and The GA5000 is an ATEX certified portable gas analyser for the landfill gas market. Easy to use and calibrate, the GA5000 benefits from our market leading reliability and helping you to standardise monitoring routines, whilst supporting environmental legislation compliance. The GA5000 is built for the landfill gas market and measures critical gases within landfill applications % CH<sub>4</sub>, CO<sub>2</sub> and O<sub>2</sub>.

- Optional gases & ranges available including H<sub>2</sub>S (up to 10000ppm), NH<sub>3</sub>, H<sub>2</sub> and CO (H<sub>2</sub> compensated)
- Measures accuracy of +/-0.5% after calibration for CH<sub>4</sub> and CO<sub>2</sub> (+/- 1% O<sub>2</sub>)
- On board context-sensitive help to guide you through every step of using the analyser
- Optional Gas Analyser Manager Software (GAM) for ID set up and data download
- Increased functionality with a range of accessories available including
- ATEX certified anemometer

#### CODE

**482148** GA5000 (CH<sub>4</sub>,CO<sub>2</sub>,O<sub>2</sub>,CO,H<sub>2</sub>S + GPS with H<sub>2</sub> Compensated CO Sensor)  
Complete with internal flow, sample tube kit with In-Line Water Trap, charger & hard carry case.

**481497** Temp Probe for 5000 series

**481496** Anemometer for 5000 series

**481085** GAM Software for 5000 series complete with USB Lead

**481638** Soft Carry Case for 5000 series



### BIOGAS 5000

Easy to use, calibrate and configure, the BIOGAS 5000 enables you to collect consistent data for improved analysis and accurate reporting, whilst helping to check the digester process is running efficiently.

The BIOGAS 5000 has a robust, high quality design fit for the most hazardous anaerobic digestion sites.

- Reliably measures gas levels of CH<sub>4</sub> (0-100%); CO<sub>2</sub> (0-100%); O<sub>2</sub> (0-25%)
- Optional measurable gases include H<sub>2</sub> (0-1000ppm); NH<sub>3</sub> (0-1000ppm); H<sub>2</sub>S (0-50, 200, 500, 1,000, 5,000 or 10,000ppm)
- Optional Gas Analyser Manager Software (GAM) for ID set up and data download
- No need for self-certification of anemometer: certified analyser validates results
- Geotech configures the BIOGAS 5000 specifically for your company's unique specification
- Supports the efficiency of your digestion process: provides you with insight so you can change gas levels for optimum performance
- Provides peace of mind that your desulphurization process is working correctly by measuring pre and post desulphurisation levels



### GEM5000

The GEM5000 is an easy to use portable gas analyser designed to aid balancing the gas field, maximise power output and ultimately maximise revenue from CH<sub>4</sub> extraction.

- Measures % CH<sub>4</sub>, CO<sub>2</sub> and O<sub>2</sub>
- Choice of additional gases including H<sub>2</sub>S to 10,000ppm & H<sub>2</sub> compensated CO
- CH<sub>4</sub> and CO<sub>2</sub> accuracy +/-0.5% after calibration
- Modular and upgradeable
- Records static and differential pressure
- Aids balancing of gas field
- Maximise power output from site / Maximise revenue from CH<sub>4</sub>
- External gas flow devices: anemometer (ATEX) / pitot tubes
- Optional Gas Analyser Manager Software (GAM) for ID set up and data download
- GPS / field navigator

#### CODE

**481408** GEM5000 (CH<sub>4</sub>,CO<sub>2</sub>,O<sub>2</sub>,CO,H<sub>2</sub>S + GPS with H<sub>2</sub> Compensated CO Sensor)  
Complete with sample tube kit with In-Line Water Trap, charger & hard carry case.

**481497** Temp Probe for 5000 series

**481496** Anemometer for 5000 series

**481085** GAM Software for 5000 series complete with USB Lead

**481638** Soft Carry Case for 5000 series



# LANDFILL/BIOGAS MONITORING

## ↓ FIXED LANDFILL / BIOGAS MONITORS

### BIOGAS 3000

The new ATEX certified BIOGAS 3000 builds on field-proven, robust gas analysis technology to offer cost effective online monitoring with local data outputs

- CH4 CO2 and O2 – standard measurements
- H2S, H2 and CO – choice of up to two optional measurements
- Modular design enabling hot-swap for serviceability and onsite maintenance
- User calibration function to maintain accuracy & ensure data reliability in extreme temperatures
- ATEX and IECEx certified for use in potentially explosive gas atmospheres – zone 2
- ISO / IEC 17025 calibration for optimal accuracy
- Ability to monitor the gas control process before and after desulphurisation
- Continuous monitoring option
- Up to 4 sample points to monitor the complete gas control process
- IP65 rated for weather proofing
- Built in liquid level monitoring with a dedicated alarm to inform the user that the contents of the catchpot requires emptying or an optional automated moisture removal drain
- Gas alarms and fault notifications
- 6 x 4-20mA outputs
- Modbus RTU communication
- Optional Profibus and Profinet communication
- Clear, visual and informative colour display
- Optional heater to extend operating temperature range to -20°C



→ VISIT [APC.CO.NZ](http://APC.CO.NZ) OR CALL US ON 0800 832 732

# LOW LEVEL GAS ANALYSERS

## ↓ LOW LEVEL GAS DETECTION

### JEROME J505

#### Hand-held Atomic Fluorescence Spectroscopy Mercury Vapour Analyzer

The Jerome® J505 Mercury Vapour Analyzer is a portable fluorescence spectroscopy analyzer, which allows the detection cell to be simpler, smaller, lighter weight and more durable than competing spectroscopy instruments. The highly efficient optical cell requires less flow to purge the system, allowing the J505 to run at a lower flow rate minimizing sample dilution as found in competing spectroscopy instruments.

Atomic Fluorescence Spectroscopy: The advanced technology of the Jerome J505 eliminates nearly all interferences, ensuring you get accurate and repeatable results in the field or in the lab.

- Detection Range: 0.05 µg/m<sup>3</sup> to 500 µg/m<sup>3</sup>
- Accuracy: ±15% at 0.3 µg/m<sup>3</sup>
- Quick Mode: 16 seconds
- Quick Mode: 0.1µg/m<sup>3</sup> (100 ng/m<sup>3</sup>)
- Search Mode: 0.1µg/m<sup>3</sup> (100 ng/m<sup>3</sup>)
- Flow Rate: 1 liter/minute
- Result Units: ng/m<sup>3</sup>, µg/m<sup>3</sup>, and mg/m<sup>3</sup>
- Stores up to 10,000 test results and up to 100 test sites
- Rechargeable NiMH 10+ hour life, charges in 3 hours or less
- Operating Temperature 5°C to 45°C, non-condensing, non-explosive



### JEROME J405

#### Gold Film Mercury Vapour Analyzer

The Jerome® J405 portable mercury vapour monitor is redefining the portable mercury vapor analyzer market. Significant performance enhancements and modern communications capabilities have been combined to create a new option for mercury spill detection and clean-up analysis. The J405 utilizes the industry-proven, inherently stable and reliable gold film sensor technology and simple, one-button operation. The ergonomically-designed handle, lighter exterior case and significantly lower detection capabilities (0.5 µg/m<sup>3</sup>) make it a portable, easy to use, low-level mercury detection instrument.

- Battery Powered Sensor Regeneration
- Rechargeable nickel metal hydride (NiMH 24 Hour Battery Life)
- On-board Data Logging (20,000 data points) (communications option)
- Auto Time/Date Stamp
- SCADA Interface Capabilities via 4-20ma
- Resolution: 0.01 µg/m<sup>3</sup> (0.00001 mg/m<sup>3</sup>)
- Detection Range: 0.5 µg/m<sup>3</sup> - 999 µg/m<sup>3</sup> (0.0005 mg/m<sup>3</sup> to 0.999 mg/m<sup>3</sup>)
- Operating Environment: 0 - 45°C non-condensing, non-explosive
- Accuracy: 1.0 µg/m<sup>3</sup>, ±10%
- Flow Rate: 750 ± 50 cc/min (0.75 ± 0.05 litres/min)



### JEROME J605

#### Gold Film Hydrogen Sulphide Analyzer

The newest H<sub>2</sub>S analyzer from Arizona Instrument LLC is the Jerome® J605 Hydrogen Sulphide Analyzer. The Jerome® J605 can read as low as 3ppb with an incredible resolution of 20ppt. The J605 is housed in a light and ergonomically designed case, setting a new precedent for low-level, portable monitors. The industry-proven, gold film sensor has been upgraded and improved from previous models, resulting in longer life expectancies.

- Detection Range: 3 ppb (0.003 ppm) - 10 ppm
- Resolution: 20 ppt (0.02 ppb) \*range dependent
- Accuracy: ±1 ppb at 5 ppb
- Response Time: Survey Mode: 12-27 seconds
- Flow Rate: 150 ml/min (0.15 litres/min)
- Integrated Data Storage: 20,000 samples; retains date, time and location
- Battery: Rechargeable NiMH 1.8 hour life, charges in 3 hours
- Operating Environment: 0°C to 40°C non-condensing, non-explosive



# LOW LEVEL GAS ANALYSERS

## ↓ LOW LEVEL GAS DETECTION

### SPM FLEX

Improve safety and productivity with the most flexible, user-friendly tape-based gas detector for low-level (ppb) toxics.

Extreme Accuracy for Extreme Gases The SPM Flex, the next evolution of our SPM and TLD gas detectors with Chemcassette tape technology, is capable of working as both a fixed and a portable unit.

The monitor detects the ultrasensitive gases inherent in your operations, including:

- Hydrides
- Mineral acids
- Oxidizers
- Amines

Our Chemcassette tape technology shows the presence of gas — quickly and definitively with a physical record. So you can prevent costly downtime from false alarms.

- Fixed & Portable Versions available
- No dynamic calibration required
- Flow System Automatic flow control with bypass system, 250 or 500 cc/min at tape, higher flow at inlet to reduce sample time (internal bypass system); sample up to 100 ft
- Power supply Universal Line powered (90-260 VAC 50/60 Hz) for battery charger & non-classified use. Battery: 6+ hours under typical conditions – acts as battery back-up in fixed applications
- Weight 9.1 lbs. (4.1 kg)
- No ChemKeys™ required
- Intuitive LCD menu
- Communication: Relays: Alarm 1, Alarm 2, Fault (user configurable for normally open/closed) 4-20mA Ethernet (with Modbus TCP/IP and web server) USB port (for memory stick configuration/data transfer) Communications connector and optional communications cable: 60 V, 5 A maximum



### VERTEX M

Provides a flexible 8 to 24 points of monitoring using colorimetric Chemcassette®, the industry's most reliable gas monitoring technology.

Vertex M is the industry's most flexible, advanced toxic gas monitoring system offering parts per billion detection levels and physical evidence of a gas leak. Vertex M ensures productivity as well as life safety.

- Longer monitoring life with extended tapes (90 days)
- Touch screen for easy data access
- Sample lines ¼ in. (6.35 mm) O.D. Sampling Distance: Up to 400 ft. maximum
- No dynamic calibration required
- Power requirements: 110 or 230 VAC
- Operating temperature: 59° to 95°F (15° to 35°C)
- Operating humidity: 20-65% RH
- Detect More Than 40 Toxic Gases
- Communication: Relays: Alarm 1, Alarm 2, Fault (user configurable for normally open/closed) 4-20mA Ethernet (DeviceNet, ControlNet, Profibus - DP, LonWorks, DF1, Modbus/TCP, ModBus Plus, Ethernet/CIP)



### ODALOG LOW RANGE H2S LOGGER

For odour complaint monitoring, short term scrubber performance testing, odour surveys and environmental odour management.

- Measurement Range 0.01 to 2.00ppm H2S
- Accuracy ±10% of reading 0.10ppm to 2.00ppm
- Sample Flow Rate Evaluation Phase Sample Flow Rate - 100 to 150ccm
- Logging / sampling interval 10 minutes to 1 hour
- Memory capacity 30,000 data points
- Battery life (and type) CPU battery: 2 Months (2/3AA size Lithium cell)
- Pump battery: 7 Days (C size Alkaline cell)



# WATER QUALITY ANALYSERS

## ↓ WATER PROBES

### MANTA

The Manta family offers up to 12 sensors in one integrated package. Each Manta comes standard with a weighted sensor guard, storage and calibration cups, temperature sensor, embedded memory for internal logging, marine connector, electronic manual, MantaManager software and standard 3 year warranty.

#### Manta Family

The Manta Series by Eureka includes 5 sensors, each with varying specifications and measurement capabilities.

Manta+ 20 water probe measures:

- temperature
- pH
- conductivity
- optical DO (optional)
- depth (optional)
- ORP (optional)

The Manta+ 25 water probe measures:

- temperature
- pH
- conductivity
- turbidity (or any medium sensor) depth (optional)
- ORP (optional)

Manta+ 30 water probe measures: temperature

- pH
- conductivity
- DO (optional)
- turbidity (or any medium sensor)
- depth (optional)
- ORP (optional)

Manta+ 35 & Manta+ 40 water probe measures:

- temperature
- pH
- conductivity
- optical DO
- universal wiper
- turbidity



Both models can also be configured to include any of the following small and medium sensor options:

Small Sensor Options:

Sodium, ammonium, nitrate, chloride, TDG.

Medium Sensor Options,

PAR, chlorophyll, blue-green algae, rhodamine, crude oil, refined oil, CDOM/FDOM, fluorescein dye, optical brighteners, tryptophan.



### LEAPFROG BLUETOOTH MODULE

Eureka's Bluetooth Module is the new, easy and versatile way to capture streaming water-quality data from the Manta2 sonde.

What is the Bluetooth Module?

Eureka's Leapfrog™ is simply a unit that powers the Manta2 sonde and provides wireless communication to any Bluetooth-enabled display running Manta2 control software (Android, Windows™ for PC, or Windows™ Mobile). Since the Leapfrog™ connects to the end of the underwater cable, it is a great solution for a variety of monitoring projects. It works on up to 200 meters of cable, for wireless connection to a Manta2 sonde under water.

### BLUETOOTH-ENABLED DISPLAY OPTIONS

Android™ Devices (Tablets, Smartphones)

Windows™ for PC/Laptop

Windows™ Mobile for PDA's

Amphibian2™ Handheld PC

Physical

- Durable Delrin shock-resistant design

Bluetooth Specs

- UART Bluetooth 2.0
- 2.4 GHz transceiver
- 2 dBm output typical
- -80 dBm sensitivity
- Up to 10m range

Includes

- 2-year warranty





# NOISE AND VIBRATION MONITORS

## ↓ NOISE MONITORS

### OPTIMUS RED - SOUND LEVEL METERS FOR NOISE AT WORK & OCCUPATIONAL NOISE MEASUREMENTS

For Occupational Noise and Industrial Hygiene, measuring the noise exposure of employees quickly and reliably is essential.

The optimus red sound level meters are the ideal instrument for these applications with a clear, high resolution OLED colour screen, a wide 120dB measurement span (up to 140dB(A) and 143dB(C) Peak) and simultaneous measurement of all available parameters. There's no setup or complicated configuration needed. Just switch on, calibrate and press start. It's that simple.

#### VoiceTag Audio Recording

Before each measurement is made, you can record a VoiceTag by simply speaking into the microphone.

You can record notes about the measurement location, describe what is being measured or simply store information that may be useful at a later date.

#### The Ideal Instrument for any Application

With two additional "virtual" noise meters running at the same time, you can meet any noise regulation, guideline or standard. Whether you need to meet the UK and EU Regulations, measure to OSHA HC & PEL, MSHA, ACGIH or any other regulation, an optimus red is the ideal instrument.

#### Key Features

- Simultaneous measurement of all workplace noise parameters with additional two "virtual" noise meters
- 4 x AA Alkaline - Typically 12 hours with Alkaline AA
- 20dB to 140dB RMS Single Range
- 4GB (B, C & D Versions), 32GB factory fit option
- NoiseTools Download, Configuration & Analysis software supplied as standard. Compatible with Microsoft Windows (32bit & 64bit)



### OPTIMUS GREEN - SOUND LEVEL METERS FOR ENVIRONMENTAL & OCCUPATIONAL NOISE MEASUREMENTS

The optimus green sound level meters have been designed with ease of use as the most important feature, which lets you get on with measuring and controlling the noise. The instruments use the very latest in digital technology and industrial design techniques to make everything as clear and simple as possible. All of the functions of the instrument are measured at the same time so there's no risk of choosing the wrong setting, and with a wide 120dB measurement span you don't need to worry about choosing the right range.

Featuring a high resolution colour OLED screen and a keypad that will illuminate automatically in low light, the optimus instruments are ideal for any noise application. The measurement data is displayed in a clear and simple format along with a real-time noise chart so that you can see how the noise varies with time.

A standard optimus can measure up to 140dB(A) and 143dB(C) Peak with the standard microphone and preamplifier, and up to 170dB using the optional MV:200EH High Level Noise microphone system.

#### Key Features

- Simultaneous measurement & data logging of all available parameters
- Tonal noise analysis (C Versions)
- Single 120dB measurement range
- Acoustic Fingerprint™ audio triggering, recording & alerts during measurements for replay and analysis
- VoiceTag™ audio note recording & AuditStore™ measurement verification
- 4GB memory capable of storing over 10,000 measurements (expandable up to 32GB)
- Compatible with CK:670 & CK:680 outdoor noise measurement kits



# NOISE AND VIBRATION MONITORS

## ↓ NOISE MONITORS

### PERSONAL NOISE DOSIMETER - 110A doseBadge

Everything you need for Noise at Work. The doseBadge is the original wireless personal noise dosimeter and is the ideal instrument for personal noise exposure measurements.

The doseBadge will measure, store and calculate the parameters essential for compliance with the Noise at Work Regulations including LAeq, LCPeak & LEP,d. Along with these overall values, the doseBadge will store a Time History, or Noise Profile, throughout the measurement.

#### Key Features

- Measures & stores the essential Noise at Work noise parameters
- 70dB(A) to 130dB(A) RMS, 120dB(C) to 140dB(C) Peak
- Compact, rugged design weighs only 51g
- Time history data stored as standard
- Robust metal case prevents damage & servicing costs
- No external controls, cables or displays reduces damage, tampering or misuse
- NoiseTools Analysis & Reporting software with licence-free installation & freelifetime updates
- 90 minute (typical) charge time with 30 hours (typical) battery life
- Intrinsically safe version available with ATEX, EEx, IECEx & FM Certification for hazardous atmospheres



### PERSONAL NOISE DOSIMETER - 120A doseBadge5

The doseBadge5 is a high performance wireless noise dosimeter that allows you to make compliant occupational noise exposure measurements, put into place effective control measures and ensure that workers are not exposed to noise levels which will put their hearing at risk.

The doseBadge5 is powerful yet simple-to-use ensuring that you can gather robust, reliable information that can be used effectively for the assessment of occupational noise exposures and includes all of the unique features of the original doseBadge such as no controls, cables or displays with a range of new functions and features.

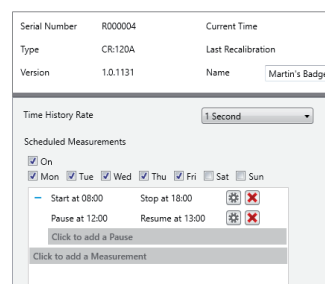
#### Key Features

- 1 second data logging of all integrators & peak channels
- Schedule automatic timed measurements with daily timers
- Remote Bluetooth communication to the dBLink App (Android & iOS) and the doseBadge5 Wand
- View measurements & configure the doseBadge5 with the dBLink App for mobile devices
- No controls, cables or display for secure, reliable measurements
- NoiseTools™ software supplied as standard for reporting & data analysis
- 60dB to 143dB measurement rang



All the data you need The doseBadge5 provides all of the measurement data needed to meet the Noise at Work Regulations as well as any occupational noise standards worldwide.

Remote connectivity Configure your instruments, view measurement data and control the doseBadge5 with the dBLink App for Android & iOS. Use the doseBadge5 Wand to review mid-shift readings and control the instrument, giving you the flexibility to make effective noise measurements.



Control your measurements Use the scheduled timers to automatically start & stop measurements every day, giving you control over when the instrument gathers data without the need for user intervention. Start, stop & pause measurements from NoiseTools, the dBLink App or the doseBadge5 Wand.



Download & charge the doseBadge5 Dock allows 5 individual doseBadge5 instruments to be charged and downloaded at the same time.

# NOISE AND VIBRATION MONITORS

## ↓ NOISE MONITORS

### NOISE SENSOR MK:427

The MK:427 Noise Sensor is an outdoor noise measurement instrument that has been specifically designed for integration with other data logging and monitoring systems.

Unlike a conventional Sound Level Meter, the MK:427 Noise Sensor converts the noise level in decibels into an industry standard 4-20mA output which can be connected to standard DCS/SCADA based systems to add a noise measurement capability.

The analogue electronics are highly reliable and operate without any user intervention. No specialist acoustic knowledge is required – simply power-up the Noise Sensor and the measured noise level is continuously fed to the output.

The industry standard 4-20mA output allows very long cable lengths to be used without reducing the accuracy of noise levels, making the MK:427 Noise Sensor ideal for systems integration.

#### Key Features

- Robust, fully weather protected Class 1 outdoor microphone
- Straight forward integration with Industry standard 4-20mA current loop systems
- Eliminates the need for third party software
- 30 to 100dB(A) standard range ideal for most applications
- Proven long term reliability in harsh outdoor environments
- Verification through regular scheduling for remote calibration using integrated electrostatic actuation system
- Outdoor Windshield and bird spikes to protect the microphone
- Entire length of the MK:427 NoiseSensor is 1m
- Simple mounting and installation for quick deployment



## ↓ VIBRATION MONITORS

### REVO VIBRATION METER - 31A

The CV:31A Revo™ Vibration Meter provides a simple and convenient way to measure, analyse and assess vibration data in accordance with standards such as ISO 5349 and European Directive 2002/44/EC.

Capable of measuring four channels simultaneously, the CV:31A meets the requirements of ISO 8041:2005 and is ideal for assessing handarm and whole-body vibration exposure.

The instrument can be used to measure whole-body vibration to ISO 2631, as well as vibration on passenger and merchant ships to ISO 6954. In addition to the measurement of vibration for human exposure, the CV:31A can also measure three channels of FFT data that can be used to analyse vibration in machinery, vehicles and other vibrating structures.

The CV:31A is typically supplied as part of a complete measurement kit, the CK:31HA, which includes the accessories required to carry out Hand-Arm vibration measurements, including handle mounts for the Triaxial accelerometer. A range of accessories is available including the KD:103 Triaxial Whole Body Seat Accelerometer allowing the CV:31A to be used in a wide range of additional applications.

#### Key Features

- Supplied as a complete Hand-Arm vibration kit with Triaxial Accelerometer
- Four independent measuring channels with IEPE inputs & TEDS support
- Measurement of acceleration for Hand-Arm & velocity/displacement for Machine Vibration
- Display of interval and running RMS, maximum RMS (MTVV) estimated Vibration Dose Value (eVDV), Vector Sum, Peak and Maximum Peak values
- 3-channel FFT for the detection of main frequencies
- Stores up to 10,000 measurement and up to 1000 FFT measurements
- Very compact design with colour OLED display
- 10-14 hours operation with 3 x AAA batteries
- USB interface for data transfer to a PC



# COMBUSTION AND EMISSIONS ANALYSERS

## ↓ COMBUSTION & EMISSIONS ANALYSERS

### PCA® 400 PORTABLE COMBUSTION & EMISSION ANALYSER

Bacharach's PCA® 400 offers everything you and your technicians need to commission, tune, maintain and certify any boiler. It is perfect for spot-checking and tuning your engines with the high-range CO sensor and available sample conditioner. Whether it's boiler combustion or emissions testing of your natural gas, stationary gen-set or mobile fleet vehicles, monitoring your emissions is fast, easy and accurate.

- Exclusive B-Smart™ pre-calibrated sensors with NFC technology
- Measure up to 4 gases simultaneously
- 4.3 inch color touch screen with enhanced viewing options to easily see readings
- Bluetooth® wireless technology allows for live streaming of data to any phone, PC or tablet
- Rugged all-in-one probe connection for durability and easy setup
- Optional NOx and SO2 sensors with Viton probe tubing for emissions testing
- Dilution mode protects sensors and allows for use in harsh conditions
- Runs on rechargeable Lithium-Ion battery pack or 4 'AA' batteries



### FYRITE INSIGHT PLUS COMBUSTION ANALYSER BY TUNE-RITE

The Fyrite® Insight® Plus is the perfect tool for busy residential/light-commercial technicians who need to ensure safe operating conditions and determine combustion efficiency. Powered by innovative Tune-Rite® software (patent pending), the industry's first-ever on-demand HVAC "assistant," the Insight® Plus helps both new and seasoned technicians save money by making more thorough and efficient service calls.

- Industry-exclusive Tune Rite® on-demand HVAC "assistant"
- Measures O2, CO (w/NOx filter), stack/air temperature and draft/pressure
- Exclusive B-Smart™ pre-calibrated CO sensor for easy field replacement
- Standard 3 year O2 sensor
- Compatible with the Bacharach Reporting App and iManifold Cloud



### FYRITE INTECH

The Fyrite® InTech® is the perfect tool for entry-level and residential technicians who need to ensure safe operating conditions and determine combustion efficiency. The InTech® features 6 fuels in the North American configuration to suit a wide variety of applications.

The InTech® includes sensors for O2 and CO, with an option for an external NOx filter. The CO sensor can be replaced in the field without down time using B-Smart™ pre-calibrated sensors. The InTech® calculates values like efficiency, CO2 and CO air-free to help monitor combustion processes effectively and accurately.

- Measures O2, CO, stack and air temperature for complete combustion analysis
- Exclusive B-Smart™ pre-calibrated CO sensor for easy field replacement
- Compatible with the Bacharach Reporting App



### MONOXOR® PLUS

The Monoxor® Plus is the perfect tool for home/safety inspectors, maintenance personnel and HVAC contractors who need to monitor CO in ambient air or stack gases. It has many advanced features, including a trending graph with real-time value displayed, minimum and maximum measured values, and ability to log a 15-minute CO ambient test.

- Fast, accurate measurement of CO for both ambient air and flue gas applications
- Exclusive B-Smart™ pre-calibrated CO sensor for easy field replacement
- Advanced features like trending display and a 15-minute CO ambient test
- Available accessories for appliance testing, differential temperature testing, NOx filtering, etc.



# FIXED GAS DETECTION

## ↓ REFRIGERANT GAS DETECTORS

### MVR 300 REFRIGERANT DETECTOR FOR OCCUPIED SPACES

The MVR-300™ detector is specifically designed to provide continuous monitoring for refrigerants associated with high-efficiency, high volume refrigerant cooling and heating systems, such as VRF/VRV (Variable Refrigerant Flow/Variable Refrigerant Volume) systems. Typical applications include hotels, dormitories, hospitals, office buildings, and apartment buildings.

The MVR-300™ audible and visual alarms alert occupants and simultaneously communicate to Building Management Systems/Building Automation Systems (BMS/BAS). Two on-board relays can be used to close valves, activate alarm devices and exhaust fans or initiate emergency calls to rescue teams.

The on-board Modbus RTU interface provides real-time information about concentrations, status and settings. It also enables custom configuration of the MVR-300™ to any application specific requirements using multiple Modbus registers.

- Fits in standard electrical boxes for easy installation
- Low profile / flush mount for aesthetically non-intrusive appearance
- Two relays and Modbus Communications for notifying building management & initiate counter measures
- Alarm options (LED, buzzer, two levels, configurable delay and fail-safe) to alert occupants and remotely inform building management of alarm location for rapid response as required
- Refrigerant specific sensors for enhanced safety



### MULTI-ZONE HIGH PRECISION REFRIDGERANT LEAK DETECTOR

Bacharach's Multi-Zone delivers the best refrigerant leak detection available, with industry-leading MDL of 1ppm for halogenated gases, the fastest sampling frequency and the widest range of refrigerants accurately detected. The large graphic LCD display and LED status indicators provide a system-wide overview at a glance.

The Multi-Zone enhances effective refrigerant management, detecting leaks early to enable cost savings by reducing refrigerant recharge, enhancing energy efficiency and reducing risk of refrigeration failure and produce loss. A variety of communication interfaces are available including Modbus, BACnet and LonWorks, allowing easy integration into BMS/BAS systems and remote monitoring solutions.

- Detects leaks that other instruments can't
- 1ppm Minimum Detectable Level for refrigerants – the lowest MDL in the industry
- High-performance detection of halogenated refrigerants, CO2 and NH3
- Identify leaks early to mitigate refrigerant loss, protect produce, enhance energy efficiency
- Ideal solution for grocery store refrigerant monitoring
- Over 50 different refrigerants accurately detected
- Monitors up to 16 remote areas, expandable to 48 monitoring points
- Proprietary infrared (NDIR) sensor technology delivers precision and stability
- Industry-leading sampling times with high performance pump
- Long sampling distances (up to 1,200 ft / 365 m)
- No calibration required, minimal maintenance



### SINGLE-ZONE HIGH PRECISION REFRIDGERANT LEAK DETECTOR

Bacharach's Single-Zone delivers the best refrigerant leak detection available, with industry-leading MDL of 1ppm for halogenated gases, the fastest sampling frequency and the widest range of refrigerants accurately detected. The Single-Zone is the ideal tool for early detection of leaks from specific target areas such as chiller rooms and mechanical rooms. The low MDL enables detection of leaks that other instruments can't find, enhances effective refrigerant management and delivers cost savings through reduced refrigerant recharge and enhanced energy efficiency.

- Detects leaks that other instruments can't
- 1ppm Minimum Detectable Level for refrigerants – the lowest MDL in the industry
- High-performance detection of halogenated refrigerants, CO2 and NH3
- Identify leaks early to mitigate refrigerant loss, enhance energy efficiency
- Ideal solution for chiller room and machinery room monitoring
- Over 50 different refrigerants accurately detected
- Proprietary infrared (NDIR) sensor technology delivers precision and stability
- No calibration required, minimal maintenance



# FIXED GAS DETECTION

## ↓ REFRIGERANT GAS DETECTORS

### MANNING AIRSCAN IR SENSOR / TRANSMITTER

The Manning AirScan™ iR infrared sensor is an affordable microprocessor-based sensor that is selective to refrigerants and, because of its stabilized design platform, will provide years of service and will maintain the highest level of accuracy and reliability. This highly versatile sensor features SensorCheck™, a unique technology that continuously monitors sensor performance that enables it to provide worry-free performance throughout the life of the sensor.

- Rapid response to refrigerants including R-404a, R-22, R-507 or R-134a
- Internal monitoring of 4/20 mA loop circuitry continuously
- 24 Volts DC regulated
- Standard range of 0-3,000 ppm, can be rescaled for lower trip points
- Provides a linear output of 4/20 mA as a function of refrigerant concentration
- Simple, real-time calibration eliminates maintenance downtime
- Automatically adapts to fluctuating temperatures
- Unique internal reference channel compensates for dust particles, source degradation, humidity and temperature fluctuation, food odors, chemical cleaners, etc.
- Allows for operation down to -60°F and in condensing humidity environments or during wash down
- Tests the sensor every 24 hours for electrical viability



### MGS-550 INDUSTRIAL REFRIGERANT GAS DETECTOR

The MGS-550 can easily be connected to any central control system using the current and volt analog output or the Modbus RTU interface. With three user assignable relays, it can also function as a stand-alone unit without the need to wire alarm devices back to a central system.

- One user-interface platform for all sensor types
- Two analog outputs and Modbus RTU interface
- Three fully configurable, user-assignable relays
- Magnetic wand enables easy, non-intrusive configuration/calibration
- IP66 ABS or aluminium enclosure options
- 19.5 to 28.5 VDC or 24 VAC
- Temperature -40 to +120 °F
- Refrigerants 1,000 / 10,00 ppm



### MGS-250

Bacharach's MGS-250 Infrared Refrigerant Gas Detector is the leader in performance and flexibility. It can be configured as either a broadband sensor used for gross leak detection, or as a gas-specific version that's pre-calibrated and characterized for precision response to individual refrigerants. The MGS-250 is the economical solution for detecting refrigerants without the limitations posed by solid-state sensor technologies.

- Infrared Refrigerant Gas Detector
- Long-life, proprietary infrared (NDIR) sensor
- Detects CFCs, HFCs, HCFCs and new HFO refrigerants
- No cross interference to other gases, humidity or temperature
- Modbus RTU interface, analog output, BAS/BMS system connectivity, 1 alarm relay, SPDT
- Set all parameters and outputs without opening the unit
- Power Supply 24 VDC or 24 VAC
- Measuring Range 0 to 3,500 ppm
- Temperature -22 to +104 °F



# FIXED GAS DETECTION

## INDUSTRIAL SENSORS & TRANSMITTERS GAS DETECTION

### SENSEPOINT XCD

Transmitter provides comprehensive monitoring of combustible, toxic and Oxygen gas hazards in potentially explosive atmospheres - indoors and outdoors.

- All-in-one gas monitoring solution, 3 Relay outputs, analogue output
- Proven Surecell electrochemical sensors (wide range)
- IR & Catalytic available for Flammable Gases & CO<sub>2</sub>
- Input voltage range: 16 to 32 VDC
- Optional Communication RS485, MODBUS RTU
- Certified temperature range: 40° to +149°F (-40° to +65°C)

#### CODE

**480476** Sensepoint XCD Catalytic LEL

**480479** Sensepoint XCD IR CH<sub>4</sub> LEL

**480482** Sensepoint XCD Oxygen

**480477** Sensepoint XCD Hydrogen Sulphide

**481458** Sensepoint XCD Carbon Monoxide

**480480** Sensepoint XCD IR CO<sub>2</sub> 0-2%

**482125** Sensepoint XCD IR CO<sub>2</sub> 0-5%



### SENSEPOINT XCD RFD

Remote Flammable Detector. Your most flexible, practical choice for remote flammable gas monitoring in Class 1, Div 1 areas.

- Accurate detection with fast response
- Mount sensor up to 30m from transmitter
- Compatible with Honeywell Analytics' proven Sensepoint Flammable sensors
- Easy to read tri-colour backlit display
- Input voltage range: 16 to 32 VDC (24 VDC nominal)
- Communication: RS485, MODBUS RTU
- Mounting: Pole or wall



### SENSEPOINT XCD RTD

Remotely monitor toxic gases in Class 1, Div 2 areas while reducing the maintenance, training and overall cost of gas monitoring.

- Common transmitter platform cuts stocking and procurement costs
- Obtain maximum coverage in areas not easily accessible
- Mount sensor up to 30m from transmitter
- Compatible with Honeywell Analytics' proven Sensepoint toxic and Oxygen gas sensors
- Prevent false alarms with auto-inhibit during maintenance
- Input voltage range: 16 to 32 VDC (24 VDC nominal)
- Communication: RS485, MODBUS RTU
- Certified temperature range: 40° to +149°F (-40° to +65°C)



### SERIES 3000 MKII AND MKIII TRANSMITTERS WITH SENSOR

2-wire loop powered toxic and Oxygen gas detector for use in potentially explosive atmospheres - explosion proof and intrinsically safe versions

- Wide range of toxic sensors available
- Reduced commissioning costs
- Sensor recognition feature auto configures transmitter
- Non-intrusive configuration
- Plug and play factory configured sensors Reduced maintenance costs
- IS sensor connection permits hot swap, reducing downtime
- Reliable detection
- Reduced installation costs
- Reduced commissioning costs
- Input voltage range 16 to 24 VDC
- Operating humidity continuous 20-90% RH (non-condensing)
- Operating pressure 90-110kPa



# FIXED GAS DETECTION

## INDUSTRIAL SENSORS & TRANSMITTERS GAS DETECTION

### SENSEPOINT FLAMMABLE AND TOXIC GAS DETECTOR

The Sensepoint range of flammable, toxic and Oxygen gas detectors offer users a high quality, low cost solution to their industrial gas monitoring needs. Installation in potentially explosive atmospheres is made by the use of a suitable Ex d or Ex e approved junction box. The industry standard outputs from Sensepoint are connected to either a choice of Honeywell Analytics' controllers or 3rd party DCS/ PLC systems. Both flammable and toxic versions are certified to the latest ATEX/ IECEx safety and performance standards.

- Proven Surecell™ electrochemical sensors
- Fast and reliable
- M20, M25 or ¾ NPT Threads
- Industry standard 2 wire 4-20mA loop output
- Flammable, toxic and Oxygen versions available
- Suitable for indoor or outdoor use
- IP65 as standard
- Optional Junction Box with continuity plate 1 X 25mm - 3 X 20mm entries
- IECEx / ATEX approved



### MANNING EC-FX-NH3

Now one tough sensor can work in three harsh environments. With the stability you can count on and low cost you want, the EC-FX-NH3 is the new gold standard in ammonia detection.

- Responds quickly to ammonia concentrations in low parts per million (PPM)
- Rugged construction for long-term reliability
- ATMOSTM Technology for environmental flexibility
- Stainless steel enclosure with LCD options
- All-new ammonia sensor with a proprietary electrolyte
- 3-year warranty—twice the warranty of most sensors



### SEARCHPOINT OPTIMA PLUS POINT INFRARED GAS DETECTOR

Infrared point hydrocarbon gas detector certified for use in potentially explosive atmospheres

- Over 100,000 units installed worldwide
- Improved reliability
- Fast speed of response
- Optional HART® over 4-20mA output
- Can detect a wide range of hydrocarbon gases including solvents
- Material: 316 stainless steel
- Response time: T50 < 3 seconds, T90 < 4 seconds (methane)
- Operational and certified: -40° to + 65°C temperature range



### SEARCHLINE EXCEL OPEN PATH INFRARED GAS DETECTOR

World-renowned infrared open path flammable gas detector offering unrivalled performance and sensitivity.

- Fast speed of response provides earliest warning
- High sensitivity allows low alarm set points
- Short Range 5m to 40m, Medium Range 40m to 120m and Long Range 120m to 200m
- Available for Methane, Ethane, Propane, Butane, Pentane, Ethylene, Propylene, Butadiene
- Double band pass filters that fully compensate for all types of fog, rain and/mist interference
- 100% Solar Immune
- Correct operation under partial obscuration conditions
- High vibration resilience
- Radially symmetrical and bonded window heating delivers good low temperature performance
- Coaxial optics delivers best in class performance and resilience to partial obscuration
- Optional Modbus RS485 multi drop output
- Response speed: T90 less than 3 seconds (under normal operating conditions)
- Range: 0 to 5 LEL m.
- Operating temperature: -40° to +65°C (-40° to 150°F)





# FIXED GAS DETECTION

## INDUSTRIAL SENSORS & TRANSMITTERS GAS DETECTION

### SENSEPOINT XCL

Sensepoint XCL is a fixed gas detector that delivers the safety and compliance you expect — plus the affordability and ease of use that you don't. It was designed especially for commercial and light industrial applications, delivering just the right amount of functionality to protect people on your premises and ensure compliance with regulations. Sensepoint XCL combines a simple yet robust mechanical housing with a gas detector app, so you can use everyday technology to set up and maintain your gas detector — and quickly get back to business. Sensepoint XCL is available as a flammable gas detector for the detection of potentially explosive gases, or as a toxic gas detector for the detection of a range of toxic gas hazards commonly found in commercial premises.

- Manage installation, commissioning and maintenance from the gas detector app on your Smartphone
- Aesthetic design blends in to the environment
- Simple, robust housing with our easiest ever installation and maintenance
- Integral gassing port for hard-to-reach locations
- Compatible with Touchpoint Plus and other industry-standard controllers
- mA loop or Modbus RTU output with optional relays
- Multi-colour LED status indicator
- Operating temperature -20 to 50°C, ingress protection IP65
- Choice of toxic, oxygen or flammable sensors



### SENSEPOINT XRL

Sensepoint XRL is a fixed point gas leak detector that is designed to meet the needs of commercial and light industrial applications. Honeywell innovation enables customers to pair the gas detector with their mobile phone, and then use an app to perform many tasks related to installation, commissioning and maintenance.

- Read gas concentrations in real-time
- Flammable, Toxic & Oxygen versions available
- Yellow or Black housings available
- Reconfigure settings easily using the APP
- Check unit histories using the APP
- Duct mount kit for round or flat profile ducts
- mA loop analog output
- Modbus RTU output
- 18 to 32 Vdc



### OELD - OPTIMA EXCEL LOCAL DISPLAY

The Optima Excel Local Display (OELD) is a smart junction box for the Searchpoint Optima Plus and Searchline Excel infrared detectors for flammable hydrocarbons. The OELD includes an LCD screen for gas information, a "traffic light" indicator for at-a-glance detector status, and Bluetooth® connectivity for simplified, non-intrusive maintenance. Simply pair the OELD with our intrinsically safe, ruggedized smartphone; then use the OELD smartphone app to interact with the gas detector from up to 10 meters (30 feet) away. For maximum flexibility, the gas detector can be mounted either directly or remotely to OELD to suit any situation.

- Simplified maintenance with familiar smartphone technology
- Non-intrusive interaction to reduce time and safety risk
- Easy access to hard-to-reach detectors
- Know before you go: pre-empt maintenance issues
- Bright "traffic light" indicator for safety awareness
- Easier to locate a unit in fault/warning
- Real-time gas readings
- Marine-grade aluminium alloy or 316 stainless steel
- 5 x M25
- ATEX/IECEX version
- 18 to 32 Vdc



# FIXED GAS DETECTION

## ↓ INDUSTRIAL SENSORS & TRANSMITTERS GAS DETECTION

### MIDAS® GAS DETECTOR

Pumped Single Point Monitor Bringing new visibility, reliability and ease of use to gas detection in semiconductor processing and industrial manufacturing.

- Detects more than 35 gases error-free
- Improved visibility and ease of use
- Easy installation
- Flow Rate: 500 mL/min
- Transport Time: 2 to 30 seconds maximum
- Sample Line Tubing: 0.125 in ID x 0.25 in OD



### SPM FLEX

Improve safety and productivity with the most flexible, user-friendly tape-based gas detector for low-level (ppb) toxics.

Extreme Accuracy for Extreme Gases The SPM Flex, the next evolution of our SPM and TLD gas detectors with Chemcassette tape technology, is capable of working as both a fixed and a portable unit.

The monitor detects the ultrasensitive gases inherent in your operations,

- Fixed & Portable Versions available
- ppB Level detection
- Visible at a distance with crisp, colourful LED bar on top of unit
- Remote viewing through the web
- Stands up to harsh conditions
- Weight: 9.1 lbs.
- No ChemKeys™ required
- Intuitive LCD menu



### E3POINT

Toxic/combustible gas monitor that makes a commercial operation run more intelligently to protect people, property and the bottom line.

- Standalone, standalone with remote (dual gas mode) or network versions available
- Saves energy through Demand Control Ventilation
- Advanced sensing technology detects CO, NO2, O2, H2, H2S, CH4, C3H3
- Complete toxic and combustible gas detection system with onboard sounder
- Available in single point or dual gas options
- Analog 4-20 mA or Digital outputs (Bacnet, Modbus, and Lonworks)



### RAEGUARD 2 PID

RAEGuard 2 PID is a fixed photoionisation detector (PID) that measures a broad range of volatile organic compounds (VOCs)

- Faster response time, thanks to the sample flow-through design
- Reduce maintenance cost
- Easy to remove sensor module in hazardous locations without using of tools
- No false alarms
- Large UV lamp and better sealing allows greater sensitivity, faster speed of response and better resolution
- Digital Smart Sensor Technology
- Detection range 0.01 to 100 ppm, 0.1 to 1000 ppm, or 1 to 1000 ppm
- Operates on 10 to 28 VDC and provides an analogue (4-20mA) three-wire signal output, and RS-485 Modbus digital signal output
- Graphic display and LED light status indicator for fault and alarm conditions



# FIXED GAS DETECTION

## INDUSTRIAL SENSORS & TRANSMITTERS GAS DETECTION

### XNX™ UNIVERSAL TRANSMITTER

A universal transmitter for toxic, oxygen and combustible gas detection compatible with all Honeywell gas sensing technologies and offers a modular choice of inputs and outputs (saving customers time and money).

- Flammable gas detection 0 to 100% LFL/LEL
- Flexible operation options
- 3 versions - Catalytic Bead and IR Cell, Electrochemical Cell and IR (point and open-path) gas detection
- Minimal training required
- Material: LM25 aluminium, painted (SS316 painted optional)
- Temperature: -40° to +65°C / -40° to +150°F (sensor dependent)
- Humidity: 20 to 90% RH (non-condensing)



*The XNX is an extremely flexible transmitter that can be configured to accept an input from any of the Honeywell Analytics range of gas sensor technologies. It can also be configured to provide a wide variety of industry standard output signals. This enables users to have a single type of interface to all their gas detection needs, even when different types of detectors are employed, to most effectively address the different gas detection applications on site.*



The XNX has three basic personalities (configurations) which support different types of sensor. The personality boards and optional output interfaces are enclosed in the electronics POD (Personality, Options and Display). The POD determines the XNX transmitter behaviour based on the sensor type attached to it and the selected output options. The mV (millivolt) personality is used for all mV signal input sensors including MPD, Sensepoint HT, PPM and the Model 705. The EC (Electrochemical cell) personality is for use with the XNX EC toxic and Oxygen sensors. The IR (infrared) personality is for use with the Searchline Excel open path and Searchpoint Optima Plus point infrared gas detectors.



The XNX is compatible with all of the Honeywell Analytics range of industrial fixed gas sensors including Searchline Excel, Searchpoint Optima Plus, Sensepoint (HT and PPM) and Model 705.

→ VISIT [APC.CO.NZ](http://APC.CO.NZ) OR CALL US ON **0800 832 732**

# FIXED GAS DETECTION

## INDUSTRIAL GAS DETECTION CONTROLLERS

### TOUCHPOINT PLUS CONTROLLER

Touchpoint Plus is an easily configurable, wall mounted control system that supports up to sixteen channels of gas detection. Its intuitive user interface and modular approach enables you to take control and configure what you need for a wide range of applications.

- Quick and easy setup and use
- Intuitive touchscreen user interface
- Traffic light style status at a glance
- Ergonomic industrial design
- Suited to a wide range of industries
- 8 channels of gas detection (16 with Expansion Unit)
- Accepts 2 or 3 wire mA or mV inputs
- Touchscreen LCD
- Built-in powered alarm outputs
- Optional Modbus TCP/IP or RTU output



### TOUCHPOINT PRO CONTROLLER

Honeywell's Touchpoint Pro makes gas control system design, installation, configuration and operation simple. Intuitive and flexible, Touchpoint Pro offers optimum compliance, safety and productivity for sites.

- Web server ensures 24/7 system status visibility for constant safety
- Flexible system architecture to meet specific site needs
- Easily accessible system status that can be seen at a glance
- Up to 64 channels of detection and 128 output channels
- Digital and analogue inputs available
- Multiple mounting possibilities
- Touch screen user interface



### UNIPOINT CONTROLLER

Low Cost DIN rail mounted controller allows you to incorporate flammable, toxic or oxygen gas detection into control systems.

- mA or mV Input
- User friendly with ultra-clear backlit display
- TS35 ('top hat') DIN rail mounting
- Compatible with a wide range of gas detectors



### 301C CONTROLLER

Designed for simple installation and operation, the 301C continuously monitors and controls toxic gases, combustible gases and oxygen hazards.

- MODBUS Sensor inputs
- Low installation costs
- Automatic quick self-test and warm-up
- Power requirement: 17-27 VAC, 24-38 VDC, 500 mA



# RESIDENTIAL GAS DETECTION

## ↓ RESIDENTIAL / OFFICE GAS DETECTORS

### INDOOR AIR QUALITY MONITOR

Improve indoor air quality and cut energy costs with CO2 or VOC + temp/humidity monitoring for demand control ventilation. IAQPoint2 features a fully functional, multi-colour, touch screen interface, the first of its kind. IAQPoint2 operates on +24VAC/VDC. Analog output is 4-20mA or 2-10VDC, switch selectable. Digital output is BACnet or Modbus, selectable, on LON communication. Available in wall mount and duct mount configurations.

- Monitor CO2 or VOCs, temperature and humidity
- Menu-driven, customizable, easy-to-navigate display
- Response time: T90 < 60 seconds
- Calibration: None required
- Dimensions: 3.0 (w) x 4.6 (h) x 1.5 (d) in. (11.8 x 7.7 x 3.7 cm)



### BATTERY POWERED CARBON MONOXIDE ALARM

X-Series CO Alarms are optimised for use by professionals dealing with residential CO protection. They are designed to meet the needs of professional landlords and safety conscious homeowners. For increased protection, all X-Series devices can be interconnected wirelessly to form a full alarm system.

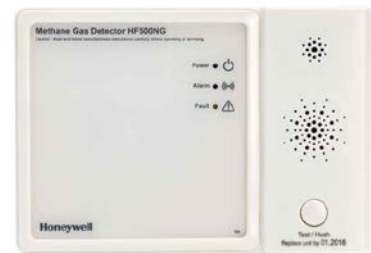
- Ideal for the Home or Caravan
- 10 year life and warranty
- Maintenance free - no parts to change
- Alarm and Fault hush button
- Long-life 3V lithium battery, sealed-in



### HF500

The HF500 alarms are designed to deliver a complete solution for the detection of LPG (Liquefied Petroleum Gas) and Natural Gas/Methane. Optimised for use by professionals dealing with flammable leak detection, HF500 is ideally suited for use in private or social housing as well as other forms of residential care. The HF500 can either be used as a stand-alone device or it can be directly wired to a solenoid valve or control panel/alarm system.

- Catalytic flammable gas sensor
- Alarms at 10% LEL - detects leaks long before the gas reaches unsafe levels
- Easy to install, easy to access wiring terminal
- Loud 85dB alarm



### EZSENSE FLAMMABLE GAS LEAK DETECTOR

EzSense is the most convenient way to detect natural gas, propane, butane, LPG and LNG. It is compact and light on the pocket in more ways than one. It is suitable for identifying the source of leaks in pipes, fittings, valves, gas storage tank/cylinders and hot water heaters.

- Catalytic bead sensor requiring no calibration - simply point and click
- Suitable for identifying the source of leaks in pipes, fittings, valves, gas storage tank/cylinders and hot water heaters
- Detects Natural Gas, Propane, Butane, LPG and LNG
- Green LED: Power On - gas less than 500ppm, Yellow LED: Low Alarm - over 500ppm, Red LED: High Alarm - over 2,000ppm



# AUDIBLE AND VISUAL ALARMS

## ↓ FIRE AND INDUSTRIAL SIGNALLING

### ALARM SOUNDER & LED BEACON - SON4

The SON4L is a compact, high output, 100dB(A) alarm sounder with integral L.E.D. array beacon. The robust fire retardant housing ensures the SON4L is suitable for all general signalling applications including fire, security and process control.

- Automatic synchronisation on multi-sounder system.
- Continuously rated.
- Stainless steel fixings.
- Unit can be mounted using external lugs (on AC versions) or internal BESA compatible fixing positions.
- Duplicate cable terminations (in & out for daisy-chain installations).
- Tropicalisation available on request.
- Available with custom tone configurations and frequencies.



### XENON BEACON - L101X

The L101X is a compact, robust 5 Joule Xenon strobe beacon ideal for all general signalling applications including fire, security and process control. CPR compliant, approved to EN54-23:2010 for use in fire alarm systems, the L101X also carries GOST approval and cULs approval for general signalling. Featuring an automatically synchronised flash rate of 1Hz (60 flashes per minute) as standard, the DC voltage versions also have user selectable 1.5Hz (90 flashes per minute) and double-strike flash rates.

- Back boxes available with and without mounting lugs.
- Pluggable terminals.
- In and out terminals.
- Multiple, user selectable flash rates.
- User replaceable Xenon tube lamp.
- Tropicalisation available on request.
- Can be stacked to create multi-signal units.
- Can be combined with AlertAlarm & Sonora audible signals.



### ALARM SOUNDER - SON2

The SON2 is a compact, high output, 104dB(A) alarm sounder. Low current consumption and high SPL in a robust fire retardant housing ensure the SON2 is suitable for all general signalling applications including fire, security and process control.

- Automatic synchronisation on multi-sounder system.
- Continuously rated.
- Stainless steel fixings.
- Duplicate cable terminations (in & out for daisy-chain installations).
- Wire to base installation
- Tropicalisation available on request.
- Available with custom tone configurations and frequencies.



### ALARM HORN WITH WITH XENON & LED TOWER - STA4

The STA4 is a customisable audio-visual signal featuring a tower of 4 AlertAlight L101 type beacons combined with a SONF1 alarm sounder.

Each beacon position can contain either a Xenon or high output L.E.D. light source. The STA4 assembly features a pre-wired junction box and cable loom enabling the end user to determine beacon type and position during installation.

- SONF1 alarm sounder synchronises automatically on multi-unit systems.
- Multiple configurations of Xenon and L.E.D. beacons.
- Internal cable loom and termination PCB simplifies installation.
- Common negative/neutral supply minimises cabling.
- High output L.E.D. unit can be set to steady or flashing.
- Available with red, white or grey housing.
- Sealed to IP66.
- Tropicalisation available on request.
- Also available without SONF1 audible signal - see the STB2/3/4 data sheet (2.1.021v10a).



# AUDIBLE AND VISUAL ALARMS

## ↓ HAZARDOUS AREA SIGNALLING

### OMNI-DIRECTIONAL ALARM HORN & LED BEACON

The flameproof BExCS110-L2-R combination omni-directional alarm horn sounder and high output LED beacon is suitable for Zone 1, 2, 21 & 22 applications. Approved to IECEx and ATEX standards.

The unique radial horn on the compact BExCS110-L2-R distributes the audible warning signal omni-directionally allowing the visual signal to be orientated optimally. Sound level outputs are up to 115dB(A) at 1 metre with a choice of 32 alarm tones and 3 remotely selectable stages. The LED beacon contains an array of 4 high output, multi-function L.E.D.s. with a total of 7 modes of operation - 5 flashing modes and 2 steady modes for use in indicator / status applications. DC voltage versions feature three remotely selectable stages enabling multiple warnings to be signalled from one device.

- Marine grade, corrosion proof, LM6 aluminum enclosure
- Automatic synchronization on multi-beacon & sounder systems
- Dual M20 cable entries
- IP66/67 ingress protection
- 160 candela effective light intensity
- 'Stage Programmable' version available with 45 tones & 4 remotely selectable stages
- IECEx Certified, Zone 1 Hazardous Area



### ALARM HORN & LED BEACON

The D2xC2LD2 utilises an array of high power Cree® LED's, orientated to optimise visibility in any direction. The beacon can be configured as a steady light for status indicator use with a light output of up to 87 candela. Alternatively one of the five flashing modes, with a effective output of up to 180 candela, may be used for warning applications. The high output alarm horn features 64 tones and DC voltage versions feature remotely selectable stages enabling multiple warnings to be signalled from one device.

- Marine grade, corrosion proof, LM6 aluminum enclosure
- 64 alarm tones, 4 remotely selectable alarm stages/channels
- Dual M20 cable entries
- IP66/67 ingress protection
- 107dB(A) @ 10ft/3m max. sound output - UL464
- IECEx Certified, Zone 2 Hazardous Area



### EXPLOSION PROOF LED MULTIFUNCTION BEACON

The GNExB2LD2 utilises an array of high power Cree® LED's, orientated to optimise visibility in any direction. The beacon can be configured as a steady beacon for status indicator use, with a light output of up to 174 candela. Alternatively one of the five flashing modes, with a light output of up to 338 candela, may be used for warning applications. DC voltage versions feature three remotely selectable stages enabling multiple warnings to be signalled from one device. The field replaceable colour filter enhances the light output and is constructed from UV stable PC.

- Robust, corrosion proof GRP (glass reinforced polyester) enclosure
- Three remotely selectable stages/channels on DC versions
- Three M20 cable entries
- Ingress protection IP66
- Glass lens & Stainless Steel guard
- Choice of five flash rates: 1Hz, 1.5Hz, 2 Hz, double and triple flash



### EXPLOSION PROOF ALARM HORN

The flameproof BExS110 alarm sounders are suitable for Zone 1, 2, 21 & 22 applications. Approved to IECEx, ATEX, Ex EAC and INMETRO standards.

Sound level outputs are up to 117dB(A) at 1 metre with a choice of 32 alarm tones and 3 remotely selectable stages. The BEx range features enclosures manufactured from corrosion proof, marine grade copper free LM6 aluminium with chromate and powder coat finish.

- Omni-directional sound output.
- Marine grade, corrosion proof, LM6 aluminium enclosure
- Ingress protection IP66/67
- Stainless steel fixings
- Dual M20 cable entries - adaptors available
- Automatic synchronisation on multi-sounder system



# FIXED FLAME DETECTION

## ↓ INDUSTRIAL FLAME DETECTORS

### FIRE SENTRY FS24X FLAME DETECTOR

Sophisticated software algorithms and dual microprocessors ensure that the Fire Sentry FS24X has the highest fire detection performance combined with optimal false alarm rejection.

- Detects hydrocarbon and non-hydrocarbon fuel fires in all environmental conditions
- User selection outputs
- Optimal false alarm rejection
- Sensitivity: Very high, high, medium and low - switch selectable
- Operating voltage: 24 VDC nominal (18-32 VDC) - regulated
- Humidity range: 5 to 98% relative humidity, non-condensing



### FIRE SENTRY FS20X FLAME DETECTOR

Part of the FSX family of electro-optical flame detectors, the FS20X represents a quantum leap in integrating infrared and ultraviolet sensing technologies.

- Detects hydrocarbon and non-hydrocarbon fuel fires in all environmental conditions
- Range greater than 200 feet to 1 sq. ft. heptane fire
- Arc welding immunity
- Field of view: 90° full 100% core of vision, ± 45° from on axis
- Operating voltage: 24 VDC nominal (18-32 VDC) - regulated
- Sensitivity: Very high, high, medium and low - switch selectable



### FIRE SENTRY FS SYSTEM 10 AND FS10-R

A high-speed microprocessor based fire detection and process control system specially designed for liquid and powder coating applications, the Fire Sentry FS System 10™ quickly detects the presence of a flame, reacts by initiating a shutdown of the electrostatic finishing process in a matter of milliseconds; and effectively interrupts the fire before residues and wet paint films can ignite.

- Multi-spectral digital electro-optical infrared fire detector
- Meets requirements of NFPA 33
- Unique two-stage ALERT and FIRE ALARM response
- Immune to false alarms caused by arcs or corona discharges
- Built-in automatic "through the lens" self-test
- Not sensitive to background radiant energy sources such as paint heaters



### FSL100 FLAME DETECTORS

Honeywell's FSL100 range of Light Industrial/Commercial Flame Detectors enables simple coverage of fire hazard areas across many fire hazard applications. Installation, set-up and operation are simple.

Wide solid area coverage and fast speed of response optimise safety. With inbuilt automatic test and test lamps available to cover all models, reliability is ensured.

- UV, UV/IR and IR3 Flame Detectors to cover a wide range of applications
- Robust, simple to install & set-up; Wide angle and fast speed of response
- Automatic test and test lamps for simple check and maintenance.
- FSL100 Flame Detectors - UV, UVIR and IR3 for light industrial applications
- GRP Housing, available in Red or White with optional swivel mount
- 12-14Vdc, 25mA nominal operation
- 4 to 20mA and Relay outputs.





# GAS SAMPLING PUMPS

## ↓ GENERAL PURPOSE PUMPS

### B-SERIES DIA-VAC PUMP

The B-Series Dia-Vac® pump is the smallest pump offered by ADI, providing exceptional quality, reliability and affordability. Available with 115/230v general purpose shaded pole or brush/ brushless 12/24v DC motor options.

The B-Series general purpose AC motor is UL and cUL recognized and CE approved.

- 0-7 LPM, 22"Hg, 30PSIG
- Small size and very quiet; perfect for Micro Analyzer or CEMS systems
- Corrosion resistant and Heated-Head options
- Single/Double Head, Elevated Head options
- 12/24v DC or 230v AC options



### J-SERIES DIA-VAC PUMP

J-Series Dia-Vac® gaseous diaphragm sampling pumps are completely self contained and may be used for either built-in or portable applications. These economical oil-free, contamination-free and leak-free diaphragm pumps offer up to 1.3 SLPM, 23 InHg, and 29 PSIG in a single head configuration.

J-Series Dia-Vac® pumps are exceptionally quiet and are available with Aluminum or Teflon-coated Aluminum wetted parts. They are an ideal choice for OEM customers.

- 0-13.5 LPM, 24"Hg, 30 PSIG
- Corrosion resistant and Heated/Elevated Head options
- 115v and 230v motor options
- 12 and 24v DC options



### M-SERIES DIA-VAC PUMP

The M-Series Dia-Vac® pumps are ideal for use in industrial plants, process control, environmental and remote sampling as well as an ideal choice for OEM customers requiring customized gaseous vacuum/pressure sampling. With the special capacitor run feature and oversized fan, the durable M-Series Dia-Vac® is designed to provide you with cooler operating temperatures than many other pumps of its size on the market.

You can count on the M-Series Dia-Vac® for continuous operation, even under load conditions.

This pump has heavy duty bearings and built in overload protection in the motor.

The M-Series Dia-Vac® general purpose motors are UL and cUL recognized and CE approved.

- 0-20 LPM, 22"Hg, 30PSIG
- Workhorse pump used on CEMS and Gas Coolers
- Corrosion resistant and Heated-Head options



### R-SERIES DIA-VAC PUMP

The rugged R-Series Dia-Vac® pump has withstood the test of time. With the many options available, the R-Series pumps can be utilized in almost any application you have or we can customize the pump to meet your specific requirements.

Available with General purpose open drip proof, TEFC, Brush-type DC, Air Driven, and explosion/flame proof options.

- 0-200 LPM, 29.9"Hg, 75 PSIG
- Corrosion resistant and Heated-Head options
- Configurable to deeper vacuum model
- Ideal process pump for General Purpose and XP areas



# GAS SAMPLING PUMPS

## ↓ HAZARDOUS AREA PUMPS

### H-SERIES DIA-VAC PUMP DOUBLE HEAD HAZARDOUS AREA PUMP

The H-Series Double Head Dia-Vac® pump will provide greater sample response time in the most demanding applications.

These durable pumps are available with Air Driven, Explosion-proof UL/CSA Class I Division I Group C/D, and Flameproof ATEX certified EEXD IIC T4 IP65 motor options. Wetted parts are available with 316 Stainless steel for added corrosion resistance.

- 0-84 LPM, 29.5"Hg, 30 PSIG
- 316ss wetted parts
- Heated-Head options
- ATEX, IECEx, NEC Ex, and GP motor options
- Double diaphragm safety option available
- Ideal pump for High flow process and emissions applications



### R-SERIES DIA-VAC PUMP SINGLE HEAD HAZARDOUS AREA PUMP

R-Series Explosion proof Dia-Vac® pumps are used worldwide in hazardous atmospheres within the petroleum, refinery, chemical, utility and pharmaceutical industries.

These durable, leak-free diaphragm gaseous sampling pumps are also an ideal choice for OEM customers and can be custom designed and built for your specific application.

- 0-200 LPM, 29.9"Hg, 75 PSIG
- Corrosion resistant and Heated-Head options
- Configurable to deeper vacuum model
- Ideal process pump for General Purpose and XP areas
- Zone 1 Explosion Proof options (UL/CSA, ATEX, and IECEx)



### R-SERIES DIA-VAC PUMP DOUBLE HEAD HAZARDOUS AREA PUMP

R-Series Explosion proof Dia-Vac® pumps are used worldwide in hazardous atmospheres within the petroleum, refinery, chemical, utility and pharmaceutical industries. These durable, leak-free diaphragm gaseous sampling pumps are also an ideal choice for OEM customers and can be custom designed and built for your specific application.

The Double Head R-Series Dia-Vac® pump can provide flow rates up to 50 SLPM, with ultimate vacuum as low as 28 InHg.

- 0-50 LPM, 22"Hg, 30PSIG
- Configurable to deeper vacuum model
- Ideal process pump for General Purpose and XP areas
- Zone 1 Explosion Proof options (UL/CSA, ATEX, and IECEx)



### R-SERIES DIA-VAC PUMP QUAD HEAD HAZARDOUS AREA PUMP

R-Series Explosion proof Dia-Vac® pumps are used worldwide in hazardous atmospheres within the petroleum, refinery, chemical, utility and pharmaceutical industries. These durable, leak-free diaphragm gaseous sampling pumps are also an ideal choice for OEM customers and can be custom designed and built for your specific application.

The Quad head R-Series Dia-Vac® pump provides flow rates up to 150 SLPM, with an ultimate vacuum of 29.9 InHg.

- 0-50 LPM, 22"Hg, 30PSIG
- Configurable to deeper vacuum model
- Ideal process pump for General Purpose and XP areas
- Zone 1 Explosion Proof options (UL/CSA, ATEX, and IECEx)
- Modular design - up to 8 heads on a single pump



## ↓ FLOW METERS

### ELECTROMAGNETIC FLOWMETER DMH

The KOBOLD DMH flow meter is used to measure and monitor the volume flow rate of fluids, pulps, pastes and other electrically conductive materials, without loss of pressure. When an electrically conductive medium passes through a directional magnetic field, a voltage is induced in accordance with Faraday's Law of Induction. The size of this measurement voltage is proportional to the mean rate of flow and consequently also to the volume flow rate.

- Great choice of linings
- Stainless steel, Hastelloy®, tantalum or platinum electrodes
- Wide variety of process connection
- Can be used in rough ambient conditions



### MASS FLOWMETER CORIOLIS TMU/UMC-3

The Kobold Mass Flow Meter model TMU utilizes the Coriolis principle of operation to measure mass flow. Density and temperature are simultaneously monitored and volumetric flow is additionally calculated with these parameters. The TMU Series is available with a direct mounted transmitter or in a remote mounted configuration. The unit can be used to meter nearly all liquid or gaseous media and was especially designed to operate in many standard applications. It is applied in many different industrial branches. The TMU Series is also used for precise dosing as well as in loading and unloading applications.

- Measuring Range: 0 - 60 kg/h ... 0 - 2200 t/h water
- Connection: Flange DN10 - DN400, ANSI ½ ... 16" JIS, NPT, special according customers specification
- Material: Stainless steel (1.4571 or 1.4404), Hastelloy® C-22
- Pmax: PN40 (higher on request)
- Temperature Range: -40 ... +260°C
- Accuracy: ±0.1 (0.15) % of reading ±zero point-stability liquids ±0.5 % of reading ±zero point-stability gases
- Analog / pulse output, digital display, Hart®, Profibus® PA, ATEX, FM, FMC, NEPSI



### OVAL WHEEL FLOWMETER DON-...LCD

Oval gear flow meters are categorised as positive displacement flow technology. When liquid flows through this type of positive displacement flow meter, two oval geared rotors measure a constant volume per rotation within a precisely machined measuring chamber. With each rotation, a constant volume of liquid is measured. The rotation of the oval gears is sensed via magnets embedded within the rotors. These magnets transmit a high resolution pulse output. The output signal can be process externally via a remote display controller or PLC or via a variety of output/display options available as accessories attached to the flow meters.

- Measuring range: 0.5 - 36 l/h ... 150 - 2500 l/min liquid
- Viscosity range: 0 - 1000000 cP
- Connection: G ½ ... G 4 female thread, flange DN25 ... DN100, ASME 1 ... 4"
- Material: aluminium, stainless steel
- pmax: 100 bar / tmax: 120°C
- Accuracy: ±0.2 ... 1 % of reading
- Pulse output, analogue output, contacts, digital / pointer indicator, batcher



### VORTEX FLOWMETER DVH

The compact KOBOLD Type PWL flow meter works on the Vortex principle. A Karman vortex is created downstream of the sensor body, i. e. the fluid flow causes vortices to be created on both sides, and these are straightened out by the current. This straightening out of the vortex is proportional to the flow velocity of the medium. Every vortex creates a small negative pressure which is detected by a capacitive pressure pick-up and converted into an electrical pulse. A down line transducer converts the pulse signal into a standard output signal.

- Measuring range: 0.2 - 5 ... 32 - 970 m³/h liquids, 3 - 28 ... 549 - 9034 Nm³/h (20°C, 0 bar rel) air, 3 - 18 ... 500 - 5797 kg/h (0 bar rel) vapour
- Connection: ANSI ½ ... 8", flange DN15 ... DN200, wafer flange
- Material: stainless steel, Hastelloy
- Pmax: PN 16, 40, 100 / tmax: 260°C (400°C)
- Accuracy: ±0.7 % of reading liquids, ±1 % of reading gas/vapour, analogue outputs, contacts, digital display
- Option: temperature / pressure sensor



## ↓ FLOW METERS

### ULTRASONIC FLOWMETER DUC

DUC uses the effect of acceleration and deceleration of acoustic signals travelling in a moving fluid. Two ultrasonic clamp on transducers are mounted (from outside) on a pipe and produce an acoustic path. The transducers send and receive acoustic signals and the transit times  $t_1$  and  $t_2$  are measured by an electronic flow transmitter. The signal from transducer A towards transducer B is accelerated by the flow (short  $t_1$ ). The return signal from transducer B to transducer A is decelerated by the flow (longer  $t_2$ ). The difference between  $t_1$  and  $t_2$  together with the path length  $L$  can be used to determine the average flow velocity. This principle is known as the acoustic time-of-flight principle. The flow is calculated from the geometry data of the pipe and the flow velocity.

- Clear text based user interface with LED backlight QVGA display
- User interface control with 6 soft buttons
- Quick-Mount-System with space bar for ultrasonic transducers 1 MHz and 2 MHz
- AFC compensation algorithm: compensates influences of changing media temperatures to the ultrasonic transducer distance
- Reynolds compensation: compensates influences of media viscosity on the ultrasonic measurement
- Ultrasonic transducers AND technology: reducing signal echoes and dispersion effects and having a positive effect on the signal to noise ratio
- 2 channel operation (only with stationary transmitter)



### OSCILLATION FLOWMETER DOG-4

The KOBOLD flow meter DOG-4 is used for flow measurement of gases. The medium flows through an orifice in a tube. Bypass bores are located at the sides. The dynamic pressure at the orifice causes part of the gas volumetric flow to flow into the bypass. The division ratio remains constant over the whole measuring range. The bypass channel contains the Oscillator – the Measuring cell itself. When the gas flows through the measuring cell, a gas column oscillates in a U-shaped channel mounted to the left and right. This oscillation frequency is proportional to the flow velocity and thus to the total volume flow. The oscillation frequency is sensed with a platinum sensor. An electrical alternating signal is generated that is displayed in the series connected electronics.

- Measuring range: 0.12 - 12 ... 60 - 6000 Nm<sup>3</sup>/h air
- Connection: flange DN25 ... 200, ANSI 1... 8"
- Material: stainless steel
- pmax: PN40
- tmax: 120°C (Ex 60°C)
- Accuracy:  $\pm 1.5\%$  of reading (air)
- Pulse output, Digital display for flow measurement and counter



### DIFFERENTIAL PRESSURE TRANSMITTER PAD

The Kobold Differential Pressure Transmitter model PAD is a micro processor-based high performance transmitter, which has flexible pressure calibration and output, automatic compensation of ambient temperature and process variable, configuration of various parameters, communication with HART® protocol. The application is very various, as measuring pressure, flow and level by application method. All data of sensor is to be input, modified and stored in EEPROM. As an option the Kobold Pressure Transmitter is also available as a flow meter. This flow meter model PAD-F has added the totalizing function in the PAD transmitter. So it is available to check the flow rate and totalizing flow. It measures the flow rate by using differential pressure without compensation of temperature and static pressure. The shape of the PAD-F is the same as the standard device and it is only the terminal block which is different since there are two more terminals for the read-out of the pulse output.

- High reference accuracy:  $\pm 0.075\%$  of calibrated span (optional:  $\pm 0.04\%$  of calibrated span)
- Long-term stability (0.125% URL for 3 years)
- High range ability (100:1) for range 4-0
- Continuous self-diagnostic function
- Automatic ambient temperature compensation
- EEPROM write protection
- Fail-mode process function
- CE EMC conformity standards (EN 50081-2, EN 50082-2)



## ↓ FLOW METERS

### MASS FLOWMETER THERMAL MAS

The KOBOLD MAS model mass flowmeter makes very precise measurements of the mass flow rate of gases in different measuring ranges from 0-10 Nm<sup>3</sup>/min to 0-500 NI/min nitrogen. The operation of the meter is based on the calorimetric principle. For indication of 98% of the actual flow, the response time is 2 s. The meter may be installed in any position. In contrast with most volumetric flowmeters, no temperature or pressure correction is required.

- Measuring range: 0 - 10 Ncm<sup>3</sup>/min ... 0 - 500 NI/min N<sub>2</sub>
- Connection: ¼" NPT, Swagelok ⅜" - ½"
- Material: nylon, stainless steel
- pmax: 10 bar (nylon), 35 bar (stainless steel)
- tmax: 50°C
- Accuracy: ±(1) 1,5 % of full scale
- Analogue output



### MASS FLOWMETER-THERMAL KES

The KES type series thermal mass flow meters measure the flow of gases, independent of variations in process pressure and temperature.

The flow meters are available in different versions for pipe normal sizes from ¼" to DN 200, pressures up to 16 bar and gas temperatures up to 175°C.

- Measuring range: 0 - 4.7 ... 0 - 94 m/s air
- Connection: plug-in version up to DN1000
- ¼" ... 8" NPT, DIN-flange DN25 ... DN200, 1 ... 8" ANSI
- Material: stainless steel
- pmax: 16 bar
- tmax: 175°C
- Accuracy: ±1 % of full scale + 0.5 % of reading
- Output: Analogue output, alarm, RS 232



### MASS FLOWMETER CORIOLIS TM/UMC

The TM Series special purpose Coriolis mass flowmeter from KOBOLD Instruments is designed to provide reliable, accurate mass flow measurements in the most stringent applications. We have successfully tackled applications requiring extreme high pressure and temperature ratings, high integrity containment and exotic materials of construction. Many TM flowmeters have been custom built to suit customer-specific applications. Mass flow, density and temperature are simultaneously measured, and volumetric flow is computed from these parameters. This flowmeter has no moving parts to wear out and employs a highly effective measuring tube de-coupling system that virtually eliminates errors caused by piping-induced vibrations and stresses.

- Measuring range: 0.8 - 8 kg/h ... 4000 - 40000 kg/h
- Connection: flange DN10 ... DN100, ANSI ½" - 3"
- JIS, NPT, special according customers specification
- Material: stainless steel, Hastelloy®, Monel®, Tantalum, nickel, special materials
- pmax: 40 bar (up to 900 bar on request)
- Temperature range: -40 ... +260°C
- Accuracy: ±0.1 (0.05) % of reading ±zero point-stability liquids ± 0.15 % of reading ±zero point-stability gases
- Transmitter: analog / pulse output, digital display.
- Hart®, Profibus® PA, ATEX, FM, FMC, NEPSI, IECEx



## ↓ LEVEL SOLUTIONS

### DUAL MAGNET FLOAT LEVEL SWITCH NGS

As the level rises and falls the inclination of the float is changed causing a permanent magnet in the float to be deflected which in turn repels a rotatable opposing magnet. This forced snap-action-contact effect operates a micro switch with a plunger. Even very small changes in level can be detected in this way.

- Secure and wear-free sensitive switching by repelling magnets
- High switch capacity up to 10 A with micro switch
- Very rugged for tough environments
- No regular maintenance necessary
- Medium temperature up to 250 °C
- Wetted parts made of high-quality stainless steel
- No auxiliary power necessary



### ULTRASONIC LEVEL SWITCH NQ

The KOBOLD ultrasonic level switch NQ-1000 is a small and compact level sensor for service in vessels and piping for monitoring liquids. The instrument monitors almost all homogeneous liquids regardless of viscosity, density and conductance. Service in technological plants, where hitherto float switches have been used, but also in plants where only very little installation space is available (Immersion length 35 mm).

- Two or three-wire connection
- No moving parts
- Can be installed in any position
- Insensitive to viscosity
- Indication of output state, Selector switch, lower/upper limiter
- High temperature, 125 °C
- Pressure up to 20 bar
- Protection IP 67



### LIQUID LEVEL SWITCH NWS

The KOBOLD liquid level switch NWS is designed as a 2 and 3-wire switch and can be universally used in vessels and pipelines. The NWS operates on the tuning fork principle in air at resonance frequency. A piezoelectric crystal is used for excitation of oscillations and for monitoring the actual oscillation frequency. When the fork is immersed in liquid, the frequency changes: this change is detected electronically and the output signal is changed. The NWS operates as a 2-wire switch in series with the load. The simple electronic switch is operated by the liquid. The NWS can also be connected to a PLC through a third terminal.

- NWS has an output state indicator with an LED that can be seen through a lens in the cover
- The KOBOLD NWS is ideal for hygienic and sterile applications and for CIP cycles up to 150 °C.
- The NWS can be set as upper or lower limiter with a mode selector.



### GUIDED RADAR LEVEL TRANSMITTER NGR

The NGR is a level sensor that uses TDR technology (time domain reflectometry) and thus can be used in oil- and water-based liquids without calibration. The NGR's guided radar uses time-of-flight technology to measure electromagnetic pulses. The time difference between the sent pulse and the reflected pulse is used to calculate the level, both as a continuous value (analogue output) and a freely positionable switching point (switching output).

- No mechanical moving parts
- Manually cuttable and exchangeable monoprobe with lengths from 200 mm up to 2000 mm
- Immune to deposit formation
- Process temperature up to 100 °C; process pressure up to 10 bar
- Small inactive areas, ideal for small containers
- Accurate measurement, even when liquid type changes
- 3-in-1: combined display, analogue output (acc. NAMUR NE 43) and binary output
- High enclosure rating of IP 67, rotatable housing
- Rugged design increases service life



## ↓ PRESSURE/TEMP SOLUTIONS

### PRESSURE TRANSMITTER PAS

The Kobold Pressure Transmitter model PAS is a micro processor based high performance transmitter, which has a flexible pressure calibration and a flexible output signal. It has an automatic compensation of ambient temperature and process variables. A communication with the instrument and a configuration of various parameters is possible via the HART® protocol. All data of sensor is to be input, modified and stored in an EEPROM.

- Superior performance
- High reference accuracy:  $\pm 0.075\%$  of calibrated span (option:  $\pm 0.04\%$  of calibrated span)
- Long-term stability
- High range ability (100:1)
- Flexibility Data configuration with HART® configurator
- Measuring of gauge and absolute pressure Reliability
- Continuous self-diagnostic function
- Automatic ambient temperature compensation



### PRESSURE GAUGE WITH DIAPHRAGM SEAL FOR CLOSED VESSELS PAD-N

The Kobold Differential Pressure Transmitter model PAD is a micro processor-based high performance transmitter, which has flexible pressure calibration and output, automatic compensation of ambient temperature and process variable, configuration of various parameters, communication with HART® protocol. The application is very various, as measuring pressure, flow and level by application method. All data of sensor is to be input, modified and stored in EEPROM.

- Superior performance
- High reference accuracy:  $\pm 0.075\%$  of calibrated span (optional:  $\pm 0.04\%$  of calibrated span)
- Long-term stability (0.125% URL for 3 years)
- High range ability (100:1) for range 4-0
- Flexibility Data configuration with HART® configurator
- Zero point adjustment
- Continuous self-diagnostic function
- Automatic ambient temperature compensation



### CAPACITIVE LEVEL METER NMC

The KOBOLD capacitive level indicators type NMC serve to measure liquid levels in tanks. They consist of a measuring probe and a connecting head with a plug-in evaluation module. Depending on the operating conditions, different probes are available.

The devices do not have any mechanically moving parts and therefore hardly any mechanical wear. The plug-in evaluation module can be changed easily so that the devices are really easy to maintain.

- Single probe for standard applications
- Double probe with PVDF connection for non metallic tanks and at the same time aggressive medias
- Single probe with external reference tube for non metallic tanks or media with very low dielectric constant
- Single probe with a split connecting head for liquid temperatures of up to 125°C.



### VIBRATING LEVEL SWITCH NVI

The KOBOLD NVI level switch is a mechanical system that is made to resonate by an electronic switching operation. When the probe is covered by a medium, the vibrations are damped. This change in the resonance frequency is converted to a switching signal by electronic means.

- Plastics industry: powders and granular material
- Chemical industry: powders, pellets and crystals
- Foodstuffs: grain, maize, flour, animal feed
- Paper making: cellulose, wood chips
- Recycling: plastic granules, paper shavings
- Power stations: flue dust, lime, coal
- Stones and earth: coal, stone powder
- Building and construction industry: cement, sand, lime



## ↓ PRESSURE/TEMP SOLUTIONS

### INSERTION TEMPERATURE SENSORS WITH/WITHOUT TRANSMITTER MMA

The screw-in temperature sensors with integrated transmitter can be used with the plug-on display model AUF... as economical digital thermometers with analogue output (4-20 mA). The plug-on display is available with limit contact as an option. The model MMA-... temperature probe connections are made of stainless steel available in G $\frac{3}{4}$ , G $\frac{1}{2}$ ,  $\frac{1}{2}$ " NPT, clamp DIN 32676, VARIVENT® or Union Nut DIN 11851. The bulbs have been designed for pressures up to 36 bar, depending on the process conditions. Due to a DIN 43650 connector the transmitter can be cable-connected or retrofitted with the plug-on display very easily. The M12 connector has the same cable-connection properties.

- Measuring range: -198 ... +250°C
- Connection: thread, clamp DIN 32676, VARIVENT®, UNION NUT DIN 11851
- Bulb Material: stainless steel
- Sensor: Pt 100
- Electrical Connection: plug DIN 43650, M12
- Output: Pt100 or 4 - 20 mA
- Option: plug-on display model AUF



### DIGITAL INDICATOR AND CONTROLLER DAG-S-M

Digital indicators and controllers for measurement of temperature, current and voltage. The measuring input is set at the factory. The dimension symbols can be adapted with interchangeable plates.

- Programmable, 5-digit LED, red
- Dimensions: 96 x 48, 48 x 24,
- Input: temperature, frequency, current, voltage
- Output: 1 or 2 x 0(4) - 20 mA / 0 - 10 V, RS 232, RS 485
- Min/Max-memory, zero-key for HOLD, TARA 30 parameter driven setpoints, volume measuring (totaliser)
- Options: sensor supply, 2(4) contacts, 8 PhotoMos, LED blue, green, orange or tricolor



### RESISTANCE THERMOMETERS MWD

KOBOLD temperature assemblies comprise a rugged installation fitting made of stainless steel with thread, flange or weld-on process connection, a connection head and a measuring element. A Pt100 temperature sensor according to IEC 751, class A, B, 1/3 DIN or 1/10 is fitted in the measuring element. On request, the measuring element can be removable, thus, allowing to remove the measuring element without interrupting the process as the customised thermowell remains in the installation and seals the process.

- Measuring range: -198 ... +600°C
- Connection: thread, flange, weld-on sleeve
- Bulb Material: stainless steel
- Sensor: Pt100, 2, 3 or 4-wire, class A, B, 1/3 or 1/10 DIN
- Option: head mounted transmitter 4 - 20 mA, HART®, Profibus® PA, Fieldbus®



### DIAPHRAGM PRESSURE GAUGES MAN-P

KOBOLD diaphragm pressure gauges are preferably used for media where Bourdon tube pressure gauges or pneumatic capsule gauges are challenged. Diaphragm pressure gauges have a relatively high actuating force. The annular clamped diaphragm is insensitive to jarring or vibration. An extremely high resistance to overpressure is achieved by under propping the diaphragm. With highly viscous, crystallizing or strongly heterogeneous media, open process connections which ensure that the gauges are easy to clean, e. g. by flushing, are used. In processes with chemically aggressive media, diaphragm pressure gauges have a special material coating on the components in contact with the medium which protect them from corrosion.

- Chemical and petrochemical industries
- Plastics and paper-manufacturing industries
- Food and beverage industries
- Machine and plant construction





## ↓ PRESSURE/TEMP SOLUTIONS

### PRESSURE SENSOR INDUSTRIAL FRONT FLUSH SEN-3251/-3252

The Heavy Duty Industrial pressure transducers are leaders among pressure transducers. The flush type diaphragm allows the use with aggressive, viscous or crystallizing process fluids. This type of sealing permits cleaning of the process connections without residues. Case and wetted parts are stainless steel. Therefore they are extremely resistant against aggressive media and fulfil the most demanding requirements. Two adjustment potentiometers for zero and span render possible the use in most difficult applications like measurement of the hydrostatic column.

- Measuring Range: -1 ... 0 ... 0 ... +25 bar (relative)
- Connection: G ½, G 1 male thread, stainless steel
- Accuracy Class: 0.25 or 0.5
- Analogue output



### PRESSURE GAUGE DIGITAL WITH CERAMIC SENSOR ELEMENT MAN-LD

The intelligent KOBOLD digital manometers are used for the display, monitoring and remote transmission of pressure-dependent operating sequences in machines and installations. The pressure to be measured is sensed by a piezo-resistive sensor and displayed by the electronics. As an option, an analogue output signal for remote transmission of the measured values and a relay output are available. The values are shown on a four-digit LCD display. The front cover along with the display can be rotated. In the pressure switch design with integrated relay, the switching point and hysteresis can be set on the membrane keypad. The starting and end points of the optional analogue output, relative to the display, are freely scalable. A wide range of process connections is available as an option. The process connection can be rotated in axial direction as desired, after loosening the counter nut.

- Measuring range: -1 ... 0 ... 0 ... +1600 bar
- Connection: G ¾, G ½ male thread, ¼" NPT, ½" NPT stainless steel
- Housing material: glasfibre reinforced plastic
- Housing: Ø 74 mm
- Accuracy class: 0.5
- Power supply: 24 VDC ±20 %
- Option: contact, analogue output, peak memory



### PRESSURE SENSORS WITH CERAMIC ELEMENT PDA

KOBOLD pressure transmitter series PDA are cost effective electronic pressure transmitters with digital indication of actual pressure. An analogue output (0)-20 mA is available for remote transmission of the measured value. The device is also available with a switch output as well. A piezo resistive ceramic sensor is used. The units can be used where high switching accuracy is needed. Long term stability, repeatability and the compact and robust makes them ideal for use in OEM applications.

- Measuring range: -1 ... 0 bar ... 0 ... 400 bar
- Connection: G ¾, G ½, ¼" NPT, ½" NPT
- Housing: stainless steel
- tmax: 80°C (media)
- Analogue output 0(4) - 20 mA, programmable, semiconductor PNP / NPN, digital display



### PRESSURE SWITCH WITH CERAMIC ELEMENT/THIN FILM PSC

The electronic KOBOLD pressure switch PSC with integrated display is used for continuous pressure monitoring and allows simple switching point programming without pressurisation. For each switching point, the contact function (NC contact/NO contact), the reset points, the switch types (n/p switch) and the switching function (hysteresis/window function) can be programmed. Switching currents ranging from a few µA to 500 mA can be switched by the output transistors. The long-term proven ceramic or thin-film cells give this pressure switch very good repeating accuracy and a long life, even at high load alternation. The rotating display and rotating connection allow the switch also to be used under extreme mounting conditions.

- Switching range: -1 ... +2 bar ... 0 ... +700 bar
- Connection: G ¾, G ½, ¼" NPT, ½" NPT
- Housing: stainless steel
- tmax: 80°C (media)
- 2 semiconductor PNP / NPN or
- 1 semiconductor PNP / NPN and analogue output digital display, programmable



## ↓ ANALYTICAL SOLUTIONS

### GEL-FILLED ORP COMBINED ELECTRODE ARS-Z

The standard combined electrode for general pH measurements is filled with KCl gel (0% silver ions) and contains a salt distillate, which ensures longer stability times. The discharge system Ag/AgCl has been designed as a cartridge. The combined electrode version with PTFE ring diaphragm is especially suitable for tough service conditions, for example, service in clarification plants or in oily and very soiled media. A temperature sensor Pt-100 can be integrated (SMEK screwed head conduit thread 13.5 version). The electrode can resist pressure up to 10 bar.

- Active section: platinum or gold
- Connection: Pg 13.5
- Temperature range: -10 ... +90°C
- Pressure rating: up to 10 bar
- Salt: KCl gel filling
- Diaphragm: ceramic or PTFE-ring
- Salt bridge for longer life time



### INDUCTIVE CONDUCTIVITY / CONCENTRATION AND TEMPERATURE TRANSMITTER LCI

The device LCI is used for the measurement and control of the conductivity and respectively for concentrations of liquid media. The integrated temperature measurement makes exact and fast temperature compensation (linear and nonlinear) possible, which is particularly important for the measurement of the conductivity. Additional functions such as the combined switching of the measurement range and temperature coefficient make possible the optimum use in case of CIP-processes. Two integrated switching outputs can be freely programmed for limit value monitoring or conductivity/concentration and/ or temperature. In addition, alarm and control tasks (desalination) can be assigned. Operation is either via a membrane keyboard and a plain text graphical display (user language can be changed) or via a comfortable PC-setup programme. By simply turning the housing cover, reading the display is possible both in case of installation in vertical or horizontal pipes.

- Measuring Range: 0 - 500  $\mu\text{S}/\text{cm}$  ... 0 - 2000  $\text{mS}/\text{cm}$
- Connection: G 1 1/4 ... 2 male thread, screwed pipe connection DIN 11851, Tri-Clamp®, Varivent®
- Material: PEEK, PVDF
- Pmax: 10 bar
- tmax: 120°C (short term 140°C)
- Accuracy: 1 %



### HAND-HELD CONDUCTIVITY MEASURING UNIT HND-C

The KOBOLD hand-held conductivity measuring unit of model HND-C110 is a compact conductivity measuring unit with solidly connected probes that can be used universally. Due to the double display, both, the conductivity and the temperature value can be displayed simultaneously. Due to the high temperature dependency in conductivity measurement, the manual measuring unit has automatic temperature compensation. With the improved unit HND-C110, the determination of resistance, salinity, and TDS are also part of the scope of functions.

- Measuring range: Conductivity: 0.0 ... 200.0  $\mu\text{S}/\text{cm}$  ... 0.0...200.0  $\text{mS}/\text{cm}$
- Temperature: -5.0 ... +100.0°C
- Accuracy, Conductivity:  $\pm 0.5$  of reading  $\pm 0.3$  % of full scale
- Temperature:  $\pm 0.2$  % of reading  $\pm 0.3$  K
- Hold function, MIN/MAX-memory
- Output: RS 232 or USB



### HAND-HELD HUMIDITY PRECISION MEASURING UNIT HND-F

Nearly all measuring tasks for the determination of weight and gas moisture can be performed with the HND-F series KOBOLD hand-held humidity measuring units. Various housing designs make it possible to find the right housing with the appropriate characteristic for every application. In addition to the large selection of humidity sensors for weight and gas moisture, measuring probes are also available for measuring air and water flow.

- Measuring Range: 0 - 100 % rH
- Accuracy:  $\pm 0.1$  / 0.2 % rH
- Hold function, Min/Max-memory, alarm, data logger, output 0 - 1 V, RS 232
- Option: temperature measuring, flow measuring



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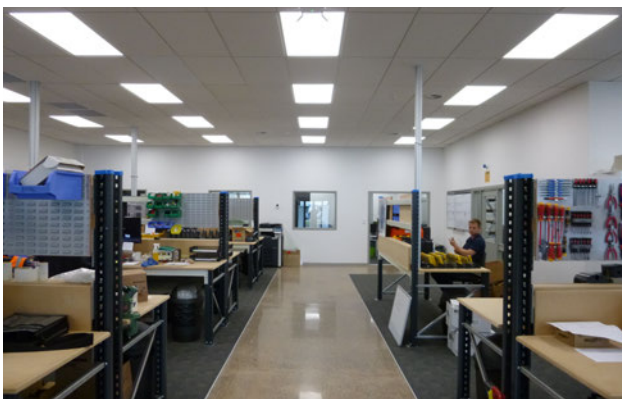
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