



## Instrumentation Sales – Service Hire – Support

### 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](http://apc.co.nz) or call us on 0800 832 732

Local Supply & Support of  
Leading Brands



## Service & Calibration Nationwide

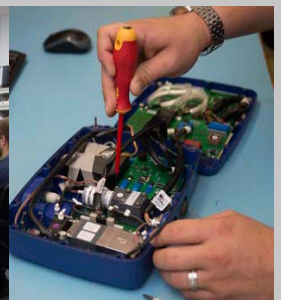
Gas detectors should be calibrated every six months to twelve months dependant on technology. APC Techsafe's service department offers on site routine calibration, repairs & commissioning of both fixed & portable Gas Detectors. We also offer inspection & servicing of height safety equipment such as harnesses, 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.



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# TABLE OF CONTENTS

	Page
<b>PORTABLE GAS DETECTION</b>	
Single Gas Personal Monitors	1
Multi Gas Personal Monitors	2-3
Bump Testing – Calibration Systems	4-5
Calibration & Bump Test Gas	6
Regulators & Gastec Tubes	7
Photoionization Detectors (PID)	8
Multi Gas Photoionization Detectors (PID)	9
<b>WIRELESS SOLUTIONS</b>	
Wireless Gas Detection	10
Wireless Solution & Local Area Monitoring	11-12
Wireless Infrastructure	13
<b>INDOOR AIR QUALITY MONITORS</b>	
Air Quality Monitoring	14
<b>LANDFILL AND BIOGAS MONITORS</b>	
Landfill/Biogas Monitoring	15-16
<b>LOW LEVEL GAS ANALYSERS</b>	
Low Level Gas Analysers	17-18
<b>FIXED GAS DETECTION</b>	
Refrigerant Gas Detectors	19
Industrial Sensors & Transmitters	20-24
Industrial Controllers	25
Residential Gas Detection	26
<b>FIXED FLAME DETECTION</b>	
Industrial Flame Detectors	27
<b>PROCESSES INSTRUMENTATION</b>	
Flow Meters	28-30
Level Solutions	31-32
Pressure/Temp Solutions	33-34
Analytical Solutions	35
<b>OUR TEAM</b>	
Contact Us	36

# 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 O<sub>2</sub>, CO or H<sub>2</sub>S
- 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
H <sub>2</sub> S	482924	O <sub>2</sub>	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
H <sub>2</sub> S	814995	NH <sub>3</sub>	481665
CO	481686	Cl <sub>2</sub>	481664
O <sub>2</sub>	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
O <sub>2</sub>	482481	SO <sub>2</sub>	482673
CO	482424	HCN	481874
H <sub>2</sub> S	482895	PH <sub>3</sub>	482019
Cl <sub>2</sub>	481229	H <sub>2</sub>	481294
NH <sub>3</sub>	481365		

### ToxiRAE Pro CO<sub>2</sub>

The ToxiRAE Pro CO<sub>2</sub> 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
CO <sub>2</sub>	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

The QRAE 3 is a versatile, rugged, two to four sensor diffusion 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.

- 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 Diffusion	482928



### 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



### 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



## 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



Use protective filters to keep sensors clean and functioning correctly

## 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

# 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

AutoRAE 2 Controller  
ToxiRAE Pro Cradle  
MicroRAE Cradle  
QRAE 3 Cradle  
MultiRAE Pumped Cradle  
MiniRAE/ppbRAE Cradle

#### Product Code

482702  
482703  
483112  
482286  
482398  
482929





# CALIBRATION & BUMP TEST GAS

## IMPORTANCE OF BUMP TESTING

### 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

## GAS CYLINDERS



### Quad Gas Mixtures

For calibrating or bump testing multi-gas instruments with H<sub>2</sub>S, CO, O<sub>2</sub> 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 N<sub>2</sub> (100ppm CO, 25ppm H<sub>2</sub>S, 50% LEL, 18% O<sub>2</sub>)  
 Gas 34L 4-Gas MSA mix with Methane (60ppm CO, 20ppm H<sub>2</sub>S, 1.45% CH<sub>4</sub>, 15% O<sub>2</sub>)  
 Gas 65L 4-Gas Mix with Methane in N<sub>2</sub> (100ppm CO, 25ppm H<sub>2</sub>S, 50% LEL, 18% O<sub>2</sub>)  
 Gas 112L 4-Gas Mix with Methane in N<sub>2</sub> (100ppm CO, 25ppm H<sub>2</sub>S, 50% LEL, 18% O<sub>2</sub>)  
 Gas 65L 4-Gas Mix with Pentane in N<sub>2</sub> (100ppm CO, 25ppm H<sub>2</sub>S, 25% LEL, 18% O<sub>2</sub>)  
 Gas 65L 4-Gas Mix with Propane in N<sub>2</sub> (100ppm CO, 25ppm H<sub>2</sub>S, 50% LEL, 18% O<sub>2</sub>)

#### 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, CO<sub>2</sub>, N<sub>2</sub>, O<sub>2</sub>, 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 H<sub>2</sub>S, HCN, HCL, NH<sub>3</sub>, NO, NO<sub>2</sub>, SO<sub>2</sub> and many others.

#### Description

Gas 112L Ammonia in Air (50ppm NH<sub>3</sub>)  
 Gas 112L Hydrogen Sulphide in Air (25ppm H<sub>2</sub>S)  
 Gas 112L Nitrogen Dioxide in Air (5ppm NO<sub>2</sub>)  
 Gas 112L Sulphur Dioxide in Air (10ppm SO<sub>2</sub>)  
 Gas 103L Carbon Dioxide in Air (1.0% Vol CO<sub>2</sub>)  
 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

\*Other gas mixtures available on request

#### 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

482718

# 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**  
 0.3L/min for Aluminium and Steel Cylinders  
 0.5L/min for Aluminium and Steel Cylinders  
 1.0L/min for Aluminium and Steel Cylinders  
 0.5L/min Stainless Steel for Aluminium Cylinders  
 1.0L/min Stainless Steel for Aluminium Cylinders

**Product Code**  
 481124  
 481125  
 482215  
 481621  
 481622

#### Demand Flow Regulator

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



**Description**  
 Demand Flow for Aluminium and Steel Cylinders  
 Demand Flow Stainless Steel for Aluminium Cylinders

**Product Code**  
 481566  
 481620

#### Variable Flow Regulator

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



**Description**  
 0.5 – 5L/min for Aluminium and Steel Cylinders

**Product Code**  
 481422

#### Tygon Tubing

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



**Description**  
 Per meter (not for use with PID/CL2)  
 Per meter (FEP Lining)

**Product Code**  
 481873  
 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**  
 Pump GV-100S (standard)  
 Pump GV-110S (with counter)

**Product Code**  
 480122  
 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**  
 75L Butyl Mercaptan  
 4H Hydrogen Sulphide  
 70L Total Mercaptans  
 2LC Carbon Dioxide  
 3L Ammonia

**Product Code**  
 480318  
 480282  
 480311  
 480264  
 480275

**Description**  
 2H Carbon Dioxide  
 4LT Hydrogen Sulphide  
 1LC Carbon Monoxide  
 4LL Hydrogen Sulphide  
 6L Water Vapour

**Product Code**  
 480261  
 480290  
 480247  
 480289  
 480307

# PHOTOIONIZATION DETECTORS (PID)

## 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 measures VOCs and other toxic gases in low concentrations from ppb (parts per billion) up to 15,000ppm (parts per million or 1.5% v/v by volume).



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.



## PID GAS DETECTION

### 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  
480898

### 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

# 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 MultiRAE Pro

- 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.

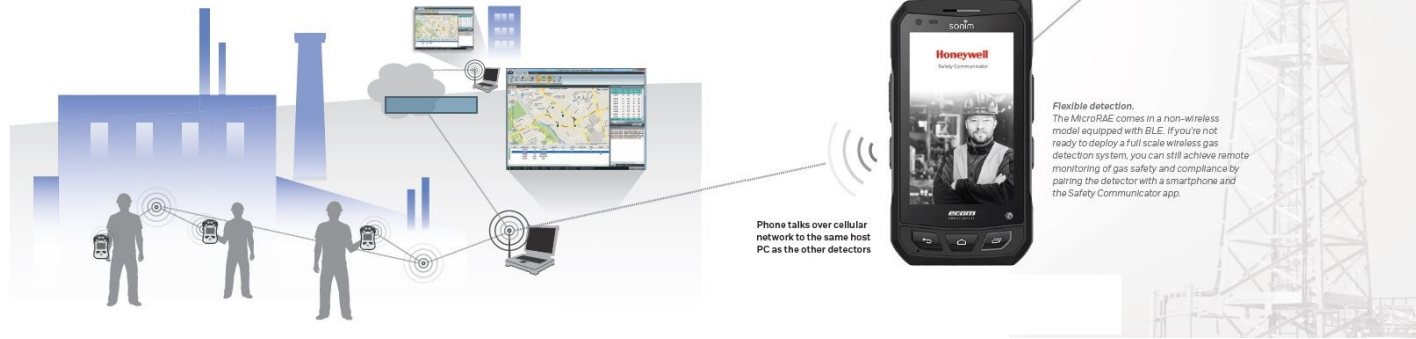
- Real-time gas concentration reading, location, alarm and status enabled by state-of-the-art wireless technology
- Bluetooth low energy connection to a Smart Phone device for uplink data communication and device configuration
- Rechargeable battery up to 15 hours continuous runtime
- Man Down Alarm 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.

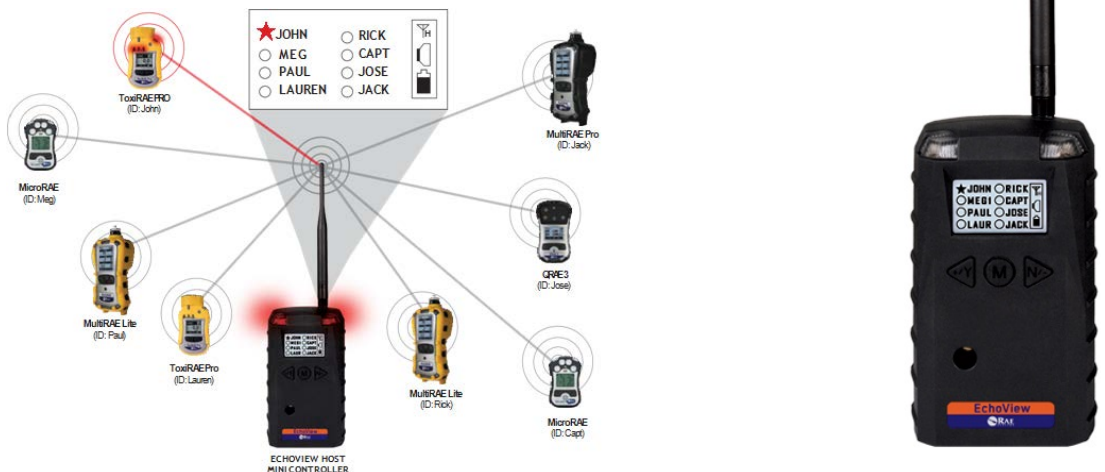
- Establishes a closed-loop wireless network with and displays real-time readings and alarm status of up to eight portable gas monitors at the same time
- Communication range extendable to 0.6 mi (1 km) with Mesh Routers
- Field-replaceable battery with a 10-day runtime
- Loud audible alarm, 90dB @ 30cm, 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



# 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.

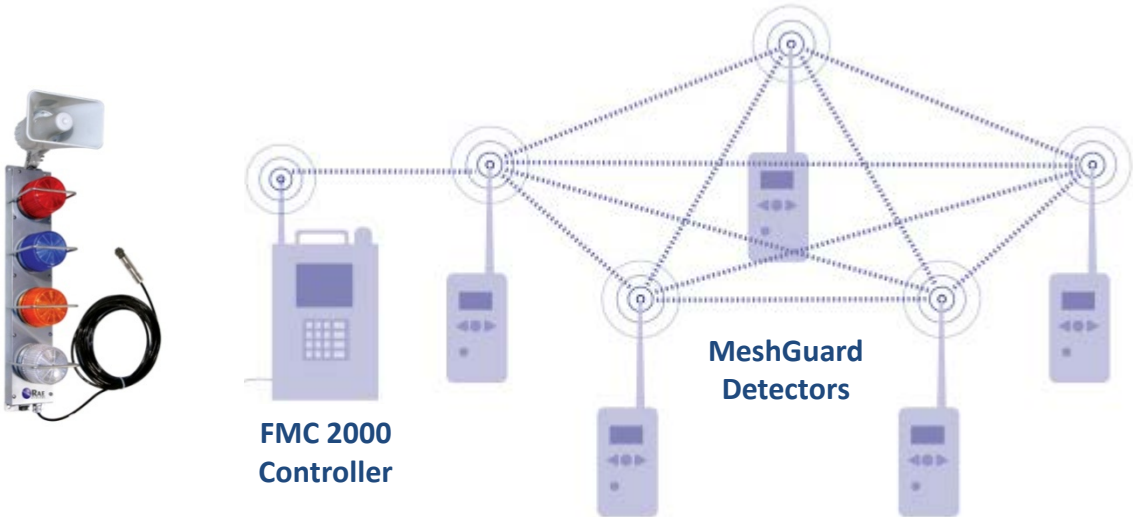
The FMC 2000 is a multi-channel controller with a built-in wireless modem. The FMC 2000 is the command-and-control element of the MeshGuard system that gathers data and monitors alarms from MeshGuard toxic and flammable gas monitors. The built-in wireless modem automatically links with MeshGuard monitors 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.

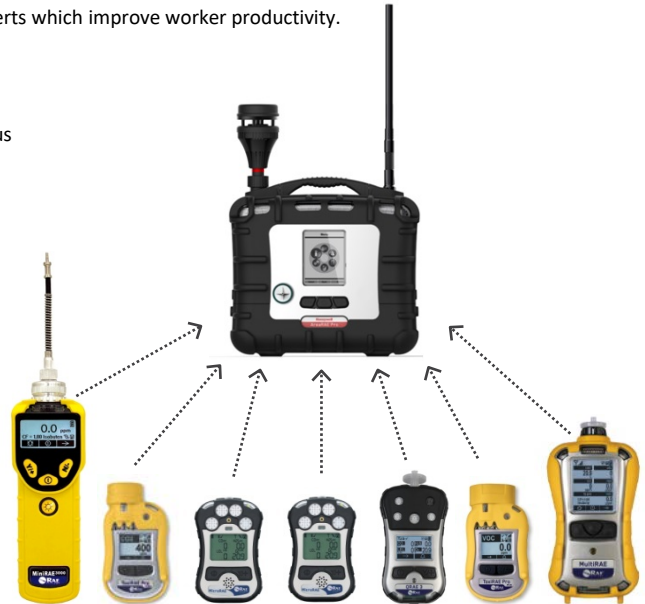
ProRAE Guardian integrates instrument data and alarm status from up to 512 RAE Systems toxic gas and radiation monitors and select third-party devices on a single dynamic map, and allows the information to be shared by multiple plant managers or responder teams through a secure Internet connection. The 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 Auto Pan Reload Large Icon Small Icon

System Google Map

Google Map Image View Lat: 37.39967, Lng: -121.88216 Map Satellite Hybrid

SN	Location	Update Time	Spd	Dir	Temp	Solar	HT	CO	VOC	H2S
0100	WL NM	09:56:13								0.0
43F0	MeshGuard	13:55:43								0.0
D0127022K		13:55:31								0.0
002C	WLNM	10:38:40								0.0
0045	WL NM	13:55:43								76.3

Time HH:MM:SS

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...

239-000001 X

System Information

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



# 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 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

**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

**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.

**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



# 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



### Features & Benefits

- Customisable to site requirements
- Zero operational downtime for servicing
- Product reliability and longevity
- Protect expensive capital equipment from damaging gases
- Maximise operational efficiency through optimising the AD process
- Operational within hazardous areas
- Ease of operation, integration and installation
- Minimal through-life costs
- Local support for peace of mind



# 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 NiMH18 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)

# 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 / 10,000 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 & CO2
- Input voltage range: 16 to 32 VDC
- Optional Communication RS485, MODBUS RTU
- Certified temperature range: 40° to +149°F (-40° to +65°C)

- 480476** Sensepoint XCD Catalytic LEL
- 480479** Sensepoint XCD IR CH4 LEL
- 480482** Sensepoint XCD Oxygen
- 480477** Sensepoint XCD Hydrogen Sulphide
- 481458** Sensepoint XCD Carbon Monoxide
- 480480** Sensepoint XCD IR CO2 0-2%
- 482125** Sensepoint XCD IR CO2 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 ¼ 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 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)00





# 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, NO<sub>2</sub>, O<sub>2</sub>, H<sub>2</sub>, H<sub>2</sub>S, CH<sub>4</sub>, C<sub>3</sub>H<sub>8</sub>
- 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).

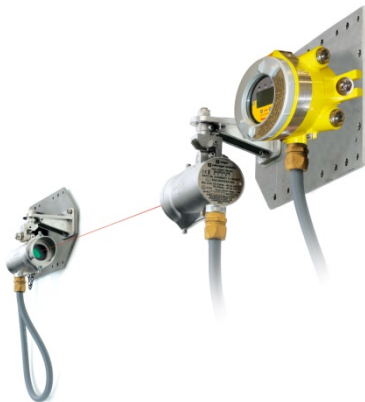
- Flammable gas detection 0 to 100% LFL/LEL
- Flexible operation options
- 3 versions - Catalytic Bead and IR Cell, Electrochemical Cell and IR (point and open-path) gas detection
- Minimal training required
- Material: LM25 aluminium, painted (SS316 painted optional)
- Temperature: -40° to +65°C / -40° 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.**

# 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

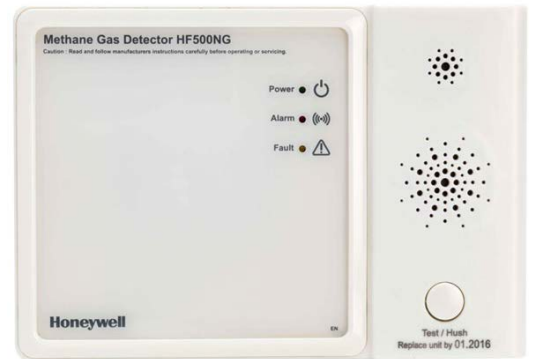
X-Series CO Alarms are optimised for use by professionals dealing with residential CO protection. They are designed to meet the needs of professional landlords and safety conscious homeowners. For increased protection, all X-Series devices can be interconnected wirelessly to form a full alarm system.

- 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



# 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,  $\pm 45^\circ$  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.

### 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 processed 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



### 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
- p<sub>max</sub>: PN40
- t<sub>max</sub>: 120°C (Ex 60°C)
- Accuracy: ± 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, con-figuration of various parameters, communication with HART® protocol. The application is very various, as measuring pres-sure, 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: ±0.075 % of calibrated span (optional: ±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)





### 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
- Option: digital display



### 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



### 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 position able switching point (switching output).

- No mechanical moving parts
- Manually cut cable 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



## LEVEL 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

# PROCESSES INSTRUMENTATION

## 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 $\frac{1}{4}$ , 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, Flidbus®



### 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 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 ¼, 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)4- 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 ¼, 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 ¼, 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

### 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 1¼ ... 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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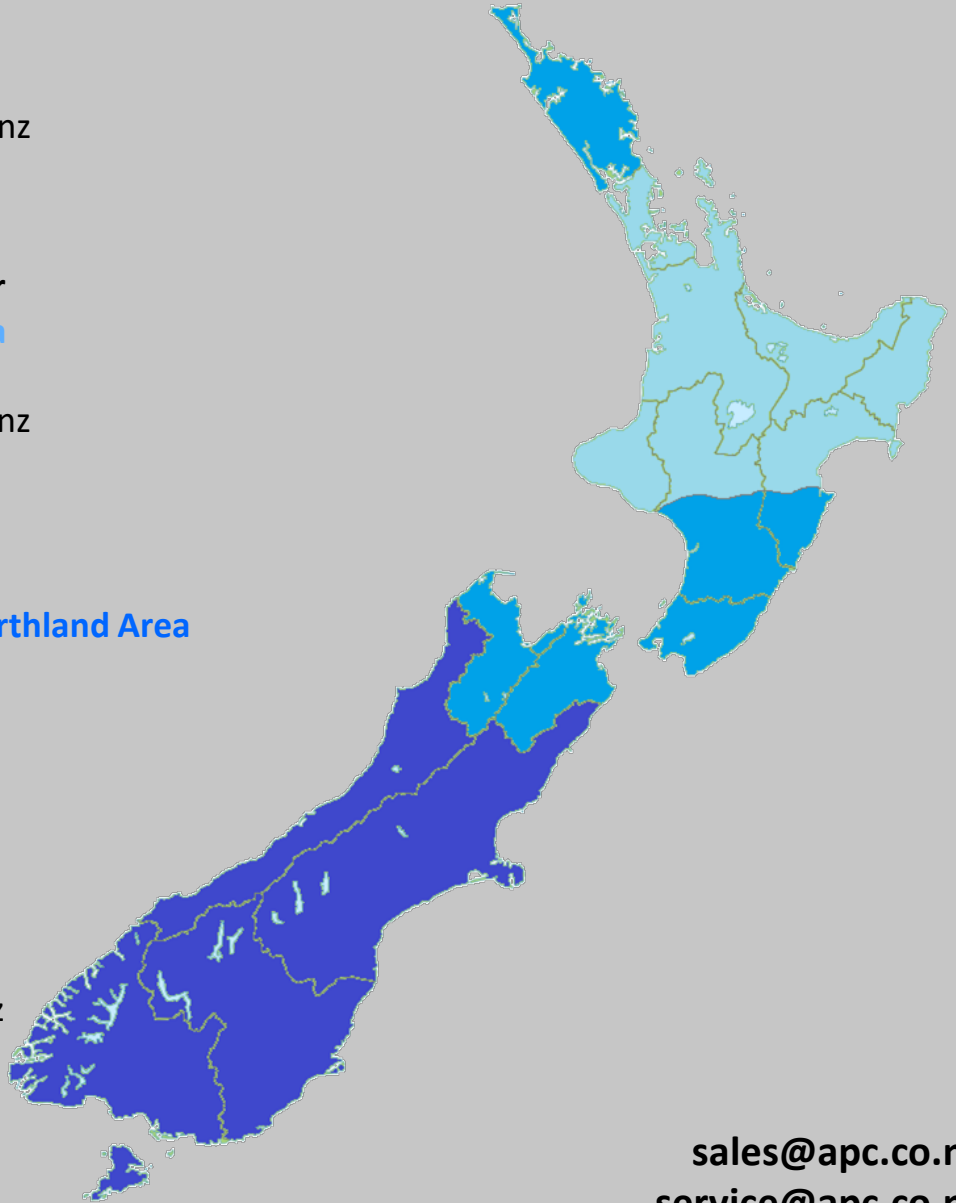
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