

Lesman

INSTRUMENTS • VALVES • CONTROLS

11.2018

PORTABLE AND FIXED **GAS DETECTION, MONITORING, AND ANALYTICS**

gas detectors • flame detectors • gas monitors •
gas analyzers • emissions analyzers • controllers •
transmitters • sample conditioning systems





RAECO is now Lesman.

Since 2001, RAECO-LIC LLC has been a part of the Lesman Instrument Group. Effective January 1, 2018, RAECO merged with its parent company, Lesman, to provide you a single source for your detection, analysis, process measurement and control instrumentation needs.

You'll be able to work with the same factory-trained team, but with access to more brands and an expanded product offering.

Lesman is your local authorized representative for Honeywell Analytics gas detection instrumentation, and a key distributor for their BW Technologies, Manning, RAE Systems, and Vulcain brands. With the collective experience of the Lesman (RAECO) and Honeywell teams, we're able to design high performing, cost-effective gas detection solutions for your applications. And with the Honeywell factory in our backyard, factory service is quick!

We're also pleased to be the authorized representative for Siemens process analytics instrumentation. So, if you're looking for extractive or in-situ process gas analyzers, we can help!

**INDUSTRIAL AND
COMMERCIAL
GAS DETECTION,
MONITORING,
AND ANALYTICS
SOLUTIONS FROM
OUR MANUFACTURER
PARTNERS:**

Honeywell
THE POWER OF **CONNECTED**

SIEMENS

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gasmeter

Honeywell
RAE
SYSTEMS

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PERMA PURE
PROTECT LIFE

Prices in this catalog are current at the publication date, and are subject to change without notice.

Due to contractual agreements with our manufacturers, some items in this catalog may not be available in all geographic areas or markets.

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Rents

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Some of the portable instruments in this catalog are available for rent from our affiliate, Raeco Rents.

Order online at RaecoRents.com or call 866-736-8347.

Look for the "Rent it at Raeco Rents" logo to identify products available for rent for daily, weekly, or long-term projects.



GasAlert Micro5 Portable Five-Gas Detectors with PID

- Simultaneously displays measured concentrations of oxygen, combustibles, and toxic gases
- Built-in correction factors for LEL and PID
- Four alarm levels: Low, high, TWA, and STEL; Internal 95 dB audible alarm, internal vibrating alarm for high noise areas, and four bright wide-angled alarm bars
- Rugged, impact-resistant housing, waterproof to IP67
- Full function self-test of sensor and circuit integrity, battery status, and audible/visual alarms on startup; Compatible with MicroDock II calibration and bump test systems (not for ClO₂ or O₃)
- Datalogging stores several months of continuous data



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Common Sensor Ranges

Sensor	Range	Resolution	Model
CO	0–500 ppm	1.0 ppm	5, 5IR, 5PID
O ₂	0–30.0%	0.1%	5, 5IR, 5PID
H ₂ S	0–500 ppm	1.0 ppm	5, 5IR, 5PID
%LEL	0–100% LEL (0–5.0% v/v)	1% (0.1%)	5, 5IR, 5PID
CO ₂	0–50,000 ppm (0–5.0% v/v)	50 ppm (0.01%)	5IR
NH ₃	0–100 ppm	1.0 ppm	5
SO ₂	0–150 ppm	1.0 ppm	5
VOCs	0–1000 ppm	1 ppm	5PID

Detector comes with specified sensors, sensor compartment cover for diffusion operation, calibration adapter and hose, integral concussion-proof boot, lithium polymer battery pack, slip-in charger cradle with wall adapter, interactive training and technical documentation CD, quick reference guide.

Confined space kit includes carrying holster, sampling probe with hose, calibration hose with quick-connect fitting, 0.5 LPM regulator, foam-lined carrying case with space for M5 and cal gas. Detector and calibration gas cylinder sold separately.

Models and Accessories for Sale

Description		Catalog Number	Price
GasAlert Micro5 datalogging detector, yellow case, rechargeable lithium polymer battery			
Gases	%LEL, O ₂ , H ₂ S, CO, SO ₂	M5-XWSY-R-D-Y-N-00	\$1643.00
	CO ₂ (IR), %LEL, O ₂ , H ₂ S, CO	M5IR-XWBY-R-D-Y-N-00	2240.00
Pump version GasAlert Micro5 datalogging detector, yellow case, with rechargeable lithium polymer battery			
Gases	%LEL, O ₂ , H ₂ S, CO, SO ₂	M5-XWSY-R-P-D-Y-N-00	1995.00
	VOCs, %LEL, O ₂ , H ₂ S, CO	M5PID-XWQY-R-P-D-Y-N-00	2398.00
	CO ₂ (IR), %LEL, O ₂ , H ₂ S, CO	M5IR-XWBY-R-P-D-Y-N-00	2662.00
Accessories	GasAlert Micro5 confined space kit	M5-CK-DL	361.00
	10.6 eV PID lamp for VOC sensor	RL-PID10.6	260.00
	Cleaning kit for PID sensor	M5PID-CLN-K1	38.00
	Rechargeable battery pack	M5-BAT08	155.00
	Quad sensor screen filters, pack of 2	M5-SS	22.00
	H ₂ S sensor	PS-RH04S	225.00
	CO sensor	SR-M04-SC	225.00
Replacement Sensors	SO ₂ sensor	PS-RS04	350.00
	TwinTox (CO and H ₂ S) sensor	D4-RHM04	385.00
	O ₂ sensor	SR-X2V	165.00
	%LEL combustible sensor, filter	SR-W04	170.00
	CO ₂ (IR) sensor	SR-B04	1000.00
	VOC PID sensor, 10.6 eV	SR-Q07	850.00



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GasAlert Quattro Personal Multigas Detector

- Continuous monitoring of CO, O₂, H₂S, and %LEL concentrations
- Full function self-test of sensor and circuit integrity, battery status, and audible/visual alarms at startup; Continuous sensor and battery testing; Compatible with MicroDock II for calibration and bump tests
- Multiple alarms: Six red LEDs, vibrating, 95 dB audible for high, low, STEL, TWA and over limit
- Enhanced resistance to common industrial cross-sensitive gases, like methanol and ethanol

Includes: Detector, sensors, rechargeable battery pack, wall charger, calibration cap and tubing, reversible screwdriver, concussion-proof housing, stainless steel alligator clip, user manual, materials booklet and technical reference guide.

Models and Accessories for Sale

Description		Catalog No	Price
GasAlert Quattro, rechargeable, for %LEL, O ₂ , H ₂ S, CO		QT-XWHM-R-Y-NA	\$778.00
IR connectivity kit with Fleet Manager II software		GA-USB1-IR	82.00
Accessories	Spare rechargeable battery pack	QT-BAT-R01	98.00
	Replacement power adapter	GA-PA-1-NA	16.00
	Five-unit power adapter	GA-PA-1-MC5-NA	103.00
	Five-unit cradle charger	QT-C01-MC5	258.00

Description		Catalog No	Price
Replacement Sensors	Quad sensor screens, 2-pack	QT-SS	\$16.00
	Quad sensor screens, 10-pack	QT-SS-K1	82.00
	Combustible sensor (0–100% LEL)	SR-W04-75C	170.00
	Oxygen sensor (0–30.0% O ₂)	SR-X2V	165.00
	Carbon monoxide sensor (0–1000 ppm CO)	SR-M04-SC	225.00
	Hydrogen sulfide sensor (0–200 ppm H ₂ S)	SR-H04-SC	140.00
	Replacement screw kit (40 screws)	QT-SCREW-K1	10.00

Honeywell BW™ MicroClip Multigas Detectors

- Monitoring of up to four gases (H2S, CO, O2, and LEL) with real-time gas concentrations displayed on LCD
- BW MicroClip XL: a lower cost model with a two-year warranty
- BW MicroClip X3: with extended life oxygen sensor, three-year warranty
- Visual, vibrating, and audible (95dB) alarms
- Guaranteed runtime for at least 12 hours down to -4° F without compromising LEL detection
- IntelliFlash™ light indicates that detector has been bump tested and is monitoring correctly
- IP68 rating; protection against dust and water — up to 45 minutes at a depth of 3.94' (1.2m)
- Compatible with IntelliDoX docking station (see page 6)

Includes: detector with specified sensors, stainless steel alligator clip, concussion-proof housing, rechargeable battery, wall outlet charging adapter, calibration/test cap and hose, manual, multi-language CD manual.



Sensor Specifications

Gas	Range	Resolution
H ₂ S	0-100 ppm	1 ppm
CO	0-500 ppm	1 ppm
O ₂	0-30%	0.1%
LEL	0-100% LEL 0-5% v/v	1% 0.1%

Models and Accessories for Sale

Description	GasAlertMicroClip XL		GasAlertMicroClip X3	
	Catalog Number	Price	Catalog Number	Price
4-Gas Detector (%LEL, O ₂ , H ₂ S, CO)	MCXL-XWHM-Y-NA	\$595.00	MCX3-XWHM-Y-NA	\$675.00
3-Gas Detector (%LEL, O ₂ , H ₂ S)	MCXL-XWH0-Y-NA	520.00	MCX3-XWH0-Y-NA	600.00
3-Gas Detector (%LEL, O ₂ , CO)	MCXL-XW0M-Y-NA	520.00	MCX3-XW0M-Y-NA	600.00
3-Gas Detector (O ₂ , H ₂ S, CO)	MCXL-X0HM-Y-NA	520.00	MCX3-X0HM-Y-NA	600.00

Note: Catalog numbers are shown for a yellow unit. To order GasAlertMicroClip in black, replace part number component -Y- with -B- (example: MCXL-XWHM-B-NA).



Honeywell BW™ Ultra Five-Gas Detector for Confined Space

- The first detector on the market to feature the 1-Series sensor with fast response, reliable performance, and long life even in most extreme environments
- Alarms: Visual, vibrating, audible (95 dB) alarms; Low, High, TWA, STEL, and Over Limit
- Features IntelliFlash™ (green) and Reverse IntelliFlash (red) to show clear compliance
- Large, easy-to-view screen lets you respond quickly
- Rechargeable battery pack; up to 18 hours of battery life (14 hours with IR or PID sensor)
- Datalogging: 45 days based on an 8-hour shifts and every 15 seconds logging
- Available sensors: O₂, LEL, IR (cannot detect certain combustible gases including hydrogen and acetylene), H₂S, CO, CO-H (low H₂), SO₂, H₂, CO₂, NH₃, VOC, CL₂, NO₂, HCN, NO
- Compatible with IntelliDoX docking station (see page 6)

Sensor Specifications

Gas	Range	Resolution
O ₂	0-25% vol.	0.1% vol.
LEL	0-100% LEL	1% LEL
IR	0-5% vol.	0.01% vol.
H ₂ S	0-100 ppm	1 ppm / 0.1 ppm
CO	0-2,000 ppm	1 ppm
CO-H	0-1,000 ppm	1 ppm
SO ₂	0-100 ppm	0.1 ppm
H ₂	0-2,000 ppm	5 ppm
CO ₂	0-50,000 ppm	100 ppm
NH ₃	0-100 ppm	1 ppm
VOC	0-1,000 ppm	1 ppm
CL ₂	0-20 ppm	0.1 ppm
NO ₂	0-50 ppm	0.1 ppm
HCN	0-100 ppm	0.1 ppm
NO	0-200 ppm	1 ppm

The Honeywell BW Ultra is designed to hold as you sample the air in a confined space. It has a comfortable weight and a slimmer profile than other five-gas detectors to minimize fatigue and enhance productivity. Plus the BW Ultra has an internal pump and no snag points, so you can wear it if needed.

Models and Accessories for Sale

Description	Catalog Number		Price
	Black Housing	Yellow Housing	
Ultra five-gas detector (O ₂ , LEL, H ₂ S, CO, SO ₂)	HU-X1W1H1M1S1-B-N	HU-X1W1H1M1S1-Y-N	\$1990.00
Ultra five-gas detector (O ₂ , LEL, H ₂ S, CO, NH ₃)	HU-X1W1H1M1A1-B-N	HU-X1W1H1M1A1-Y-N	1990.00
Ultra five-gas detector (O ₂ , LEL, H ₂ S, CO, Cl ₂)	HU-X1W1H1M1C1-B-N	HU-X1W1H1M1C1-Y-N	1990.00
Ultra five-gas detector (O ₂ , LEL, H ₂ S, CO, VOCs)	HU-X1W1H1M1Q1-B-N	HU-X1W1H1M1Q1-Y-N	2515.00
Ultra five-gas detector (O ₂ , LEL, H ₂ S, CO, CO ₂ IR)	HU-X1W1H1M1B1-B-N	HU-X1W1H1M1B1-Y-N	2515.00
Confined Space Kits			
Ultra Deluxe Confined Space Kit		HU-CK-DL	475.00
Carrying case for Ultra with foam and lid insert		HU-CK-CC	175.00

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Ethernet-capable,
just add Network
USB adapter!



MicroDock II Automatic Test and Calibration Station

- Stand-alone or networkable, fully automatic hands-free calibration and functional bump testing
- Verifies performance of audible and visual alarms
- Stores and updates calibration records, including time and date stamps for last calibration and last bump test
- Add extra docking modules for working with multiple gas detectors

Models and Accessories for Sale

Description		Catalog No	Price
MicroDock II calibration and bump test base station		DOCK2-2-00-G	\$1045.00
Demand flow regulator (required)		REG-DF-1	360.00
Network USB to Ethernet communication adapter		DOCK2-LAN-1P-NA	457.00
Wall mount adapter kit for base station, docking modules		WMA-DOCK	26.00
GasAlert Quattro	Docking module, charging, power supply	DOCK2-0-1C1N-00-G	578.00
	Docking module, non-charging	DOCK2-0-1N-00-G	525.00
GasAlert Micro5	Docking module, charging, power supply	DOCK2-0-1C1K-00-G	735.00
	Docking module, non-charging	DOCK2-0-1J-00-G*	578.00
GasAlert Max XT docking module, charging, power supply		DOCK2-0-1C1M-00-G	578.00
GasAlert Extreme docking module, non-charging		DOCK2-0-1D-00-G	525.00

* Not for use with ClO2 or O3

Includes: base station, docking modules (one per detector as needed), charging cable as ordered, AC line power adapter, memory card, BW Fleet Manager II data analysis software, USB connector cable, fresh air inlet filter, four C Alkaline batteries, 2' calibration gas hoses, one gas cylinder inlet fitting, and user manual.

Order detectors separately. Call for calibration gas pricing.

IntelliDoX Bump Test and Device Management System

- Compatible with: Honeywell BW MicroClip, Honeywell BW Ultra, Honeywell Clip, and Honeywell BW Clip4 gas detectors
- Connect up to five modules that can operate independently, while sharing power, network connection, and calibration gas
- Each module works individually, so you can run five bump tests at the same time
- Transfer data from docking module to computer by Ethernet or USB cable
- Device management with Honeywell Safety Suite

Models for Sale

Description	Catalog No.	Price
IntelliDoX docking station for GasAlertMicroClip XL or X3 gas detector	DX-MCLP	\$2195.00
IntelliDoX docking station for Ultra gas detector	DX-ULTRA	2195.00
IntelliDoX enabler kit ¹	DX-ENBL-NA	250.00

- 1 IntelliDoX enabler kit includes: power supply with AC power supply, ethernet cable, inlet (purge) filter assembly, 3ft (1m) calibration gas tubing, 3ft (1m) purge gas tubing, 15ft (4.5m) exhaust tubing and quick connect fittings

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Honeywell Safety Suite Device Configurator

- Local Windows-based solution to manage Honeywell, BW Technologies, and RAE Systems portable devices and docking systems
- Simple and intuitive user interface
- Easier devices configuration and reduced maintenance
- Easy user management and access control for increased data security
- Free download at bit.ly/safety-suite



Gasmet DX4040 Portable Ambient Air FTIR Gas Analyzer

- Real time measurement and display multiple gases to sub-PPM detection limits
- Unknown gas identification in the field using a tablet PC
- Uses a spectral library of >5000 compounds to identify gases and warn for false positives
- Automatically compensates for cross interferences in the analysis
- No sample preparation required, no consumable parts to replace
- No span calibrations required, only periodic zeros using nitrogen or clean air
- Saves all sample spectra for analysis, logs GPS data with gas measurements
- Wireless communication (Bluetooth, WiFi, 3G)

The Gasmet DX4040 portable Fourier-transform infrared spectroscopy (FTIR) gas analyzer detects organic and inorganic gaseous compounds in real time by their absorbency of infrared radiation. Because each molecular structure has a unique combination of atoms, each produces a unique infrared spectrum. From this, it's possible to qualitatively identify and quantitatively analyze the compound. An FTIR analyzer simultaneously measures multiple analytes in a complex gas matrix, detecting virtually all gas-phase species.

Gasmet FTIR gas analyzers offer greatest benefits when you need to analyze several components at once, analyze the gas hot/wet (hot/humid applications for HCN, NH₃ or HCl), or analyze any gas in complicated gas mixtures. The DX4040 is ideal for applications including chemical spills, security, forensic investigations, occupational health, anaesthetic gases, greenhouse gases, refrigerants, leak detection, VOCs, and research.



Benefits of the DX4040 FTIR Analyzer

- Measure multiple gases simultaneously
- Adding new gases is easy – no need for hardware changes
- Portable FTIR is like taking the lab to the site
- Simple and low-cost calibration – only zero calibration with nitrogen needed

What gases can the FTIR gas analyzer measure?

The Gasmet™ DX4040 FTIR gas analyzer can measure any gas except the following: Noble (or Inert) gases; Homonuclear diatomic gases (N₂, Cl₂, H₂, F₂, etc.); H₂S

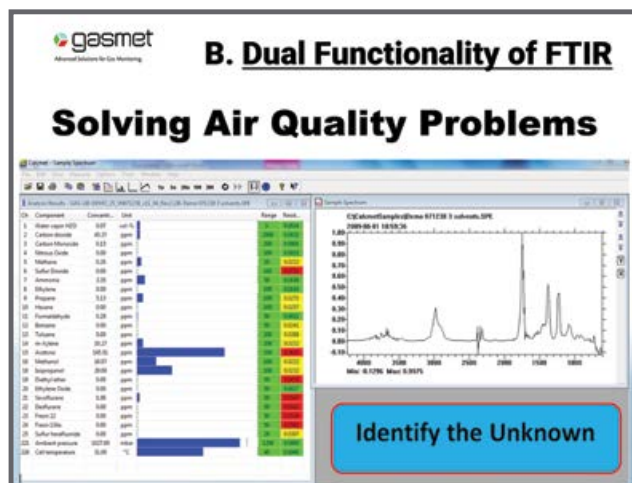
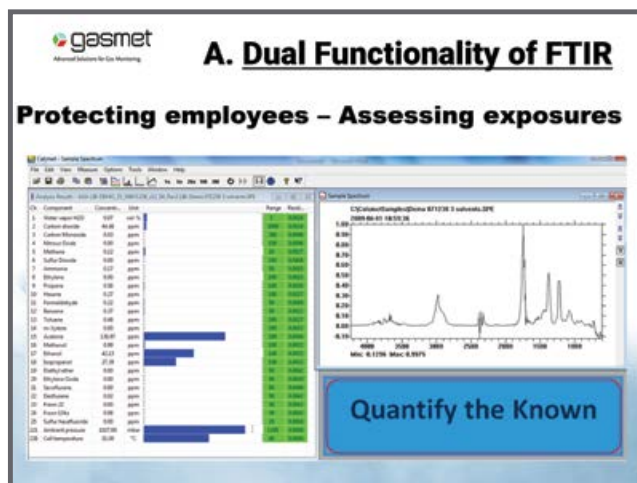
Get pricing based on your application — call 800-953-7626

Not quite sure how to do a measurement with the Gasmet DX4040?

One of our technicians can walk you through your measurement project.

Call 800-953-7626 to request a walk-through.

Simultaneously Identify Multiple Unknown Compounds with Gasmet DX4040



Learn how the Gasmet DX4040 detects and quantifies multiple unknown compounds. Watch the full webinar presented by our partners at Raeco Rents at: bit.ly/dx4040-webinar



- Continuous monitoring and datalogging of up to six gases, including multiple toxic industrial chemicals, gamma radiation, and benzene
- Built-in sampling pump and automatic shutoff function in low-flow conditions
- Displays real-time gas concentrations reading of gas plus STEL, TWA, peak and minimum. Visual, audible, vibratory and Man Down alarms
- Certified as Intrinsically Safe by DoC, ATEX, IECEx, IP-67, IP-65, and CSA
- Available electrochemical sensors: NH₃, CO (extended range, H₂-compensated, + H₂S combo), Cl₂, CLO₂, ETO-A and ETO-B, HCHO, HCN, H₂S, CH₃-SH, NO, NO₂, O₂, LIQ O₂, PH₃ and PH₃H, SO₂

MultiRAE Series Portable Six-Gas Monitors

	MultiRAE Pro	MultiRAE	MultiRAE Lite	MultiRAE Benzene
Benzene-Specific Snapshot (requires Benzene RAE-Sep Tube Cartridge)				✓
Gamma Radiation Sensor	✓			
Ppb PID (10.6 eV; 0.01 – 2,000 ppm; 10 ppb res.)	✓			
High-Range Ppm PID (10.6 eV; 0.1 – 5,000 ppm; 0.1 ppm res.)	✓	✓		
Ppm PID (10.6 eV; 1 – 1,000 ppm; 1 ppm res.)			Pumped only	
Ppm PID (9.8 eV; 0 – 2,000 ppm; 0.1 ppm res.)				✓
20+ Electrochemical Sensors	✓	✓	✓	
ETO-C Extended-range Sensor			Diffusion only	
Hydrogen (H ₂) Sensor			Diffusion only	
H ₂ S, HR Extended-range Sensor			Diffusion only	
Catalytic %LEL Sensor	✓	✓	✓	✓
Combustible NDIR Sensors (%LEL or %Vol. CH ₄)	✓	✓	Pumped only	
CO ₂ NDIR Sensor	✓	✓	✓	
Integrated Wireless Modem (optional)	✓	✓	✓	✓
Sampling	Pumped	Pumped	Pumped or Diffusion	Pumped
IP Rating	IP-65	IP-65	IP-65 (pumped) IP-67 (diffusion)	IP-65
Default Rubber Boot Color	Black	Yellow	Yellow	Red
Automatic Test and Calibration System	AutoRAE 2	AutoRAE 2	AutoRAE 2 (pumped only)	AutoRAE 2
Prices Start at (monitor only)	\$4102.00	\$2692.00	\$943.00 (pumped) \$818.00 (diffusion)	\$2543.00
<i>Specify sensor configurations - call for pricing</i>				



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Order online at RaecoRents.com or call 866-736-8347.

QRAE 3 Personal Multigas Detector

- Continuous gas monitoring with up to 14 hours battery life (in non-wireless diffusion mode)
- Large datalogging capacity (3 months for 4 sensors at 1-minute intervals, 24/7); User-configurable datalogging intervals (from 1 second to 1 hour)
- Visual, audible, and vibratory alarms plus Man Down Alarm and policy enforcement indicators
- Hazardous area classified for use in Class I, Div I, Groups A-D environments
- Available sensors: O₂, LEL, CO, H₂S, SO₂, HCN, NH₃, PH₃, Cl₂, NO₂

Standard Sensor Configurations

	Description	Catalog No.	Price
Pumped	LEL, H ₂ S, CO, O ₂ - Li-ion, Non-Wireless	M020-11111-111	\$1046.00
	LEL, O ₂ , CO, HCN - Li-ion, Non-Wireless	M020-11112-141	1194.00
	LEL, O ₂ , CO, HCN - Li-ion, Wireless (900MHz)	M020-11212-141	1419.00
Diffusion	LEL, H ₂ S, CO, O ₂ - Li-ion, Non-Wireless	M020-21111-111	932.00
	LEL, H ₂ S, CO, O ₂ - Li-ion, Wireless (900MHz)	M020-21211-111	1157.00
	LEL, O ₂ , CO, HCN - Li-ion, Non-Wireless	M020-21112-141	1080.00
	LEL, O ₂ , CO, HCN - Li-ion, Wireless (900MHz)	M020-21212-141	1305.00

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SYSTEMS



Includes: Monitor (pumped or diffusion), specified sensors, calibration adapter (diffusion model only), T calibration tube (pumped model only), internal filters (mounted - diffusion model only), mounted external filters (one mounted plus pack of three - pumped model only), travel charger cradle with computer cable, lithium-ion battery pack, universal wall adapter, CD with ProRAE Studio II, CD with product content, quick reference guide, accessories kit.



MiniRAE 3000 Intrinsically Safe PPM Photoionization Detector

- Detects from 0.1-15,000 ppm volatile organic compounds (VOCs)
- Built-in correction factors for 350 different toxic compounds
- Built-in flashlight for viewing in dark conditions and tight spaces
- Visual and audible alarms

VOC Sensor Specifications

Range	Resolution	Response Time T90
0 to 999.9 ppm	0.1ppm	< 3 seconds
1000 to 15000 ppm	1 ppm	< 3 seconds



NEW

ppbRAE 3000 Intrinsically Safe Handheld VOC Monitor

- Measures: 1 ppb–10,000 ppm for VOCs
- Sample pump draws from up to 100 ft
- Humidity compensation with integral humidity and temperature sensors

VOC Sensor Specifications

Range	Resolution	Response Time T90
0 to 9999 ppb	1 ppb	< 3 seconds
10 to 99 ppm	0.01 ppm	< 3 seconds
100 to 999 ppm	0.1 ppm	< 3 seconds
1000 to 9999 ppm	1 ppm	< 3 seconds



NEW

Model Selection Guide

Choose one option from each section to build a catalog number. A complete catalog number looks like this: **059-B111-000**

	Description	Catalog No.	Availability	Price
	MiniRAE 3000 PGM-7320	059-B	↓	\$4499.00
	ppbRAE 3000 PGM-7340	059-C	↓	7511.00
Lamp	10.6 eV lamp 1/2"	1 _ _	✓ ✓	0.00
	11.7 eV lamp 1/2"	2 _ _	✓	124.00
	9.8 eV lamp 1/2"	3 _ _	✓ ✓	68.00
Batteries	Alkaline only	_ 0 _	✓ ✓	0.00
	Rechargeable Li-Ion battery, universal adapter	_ 1 _	✓ ✓	124.00
Wireless, Certification	No Wireless, UL/CUL	_ _ 0-	✓ ✓	0.00
	Wireless (Bluetooth) data transmission, UL/CUL (2.4 GHz)	_ _ 1-	✓ ✓	360.00
	Wireless (Mesh) data transmission, UL/CUL (900MHz)	_ _ 2-	✓ ✓	338.00
Kits	Monitor only	000	✓ ✓	0.00
	Accessories and Calibration Kit (with gas and regulator)	100	✓ ✓	608.00
	Accessories Kit (no gas, with regulator)	200	✓ ✓	540.00
	Accessories Kit (no gas or regulator)	300	✓ ✓	383.00

Monitor only includes: MiniRAE 3000 or ppbRAE monitor as specified, datalogging with ProRAE Studio, travel download charger, RAE UV lamp, as specified, Flex-I-Probe, external filter, yellow (MiniRAE 3000) or black (ppbRAE 3000) rubber boot, lamp cleaning and tool kit, resources CD-ROM and maintenance manual, soft leather carrying case. ppbRAE 3000 only: VOC zeroing tube (1 box), tube adapter, sampling bag.

Accessories kit adds: Hard transport case with precut foam, charging/download cradle (instead of travel charger), five porous metal filters and O-rings, organic vapor zeroing kit, gas outlet port adapter and tubing.

AutoRAE 2 Automatic Bump Test and Calibration Station

- One-touch bump testing, calibration, charging and records management
- Compatible with RAE Systems MultiRAE pumped models, QRAE 3, MiniRAE Lite, MiniRAE 3000, ppbRAE 3000, UltraRAE 3000, and ToxiRAE Pro family
- Modular system that can be used as single-device cradle with up to two different gas cylinders or as a controller-based system supporting 10 instruments and five different gas cylinders
- Entirely self-contained, no computer required
- Stores and updates device calibration records on SD card

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SYSTEMS



NEW

Models and Accessories for Sale

Description	Catalog Number	Price
AutoRAE 2 Controller (required with two or more cradles)	T02-0107-000	\$2081.00
AutoRAE 2 Cradle for MultiRAE Pumped Models	T02-0103-000	1744.00
AutoRAE 2 Cradle for QRAE 3	T02-0203-000	1238.00
AutoRAE 2 Cradle for Handheld PID ¹ (MiniRAE 3000, ppbRAE)	T02-0403-000	1744.00
Accessories	Wi-Fi Module for AutoRAE 2 Controller	T02-0303-000 169.00
	AutoRAE 2 Terminal Adapter	T02-0108-000 260.00

¹ AutoRAE 2 Handheld PID cradle requires a Flex-I-Probe Quick Connector to be installed on each detector. Each Handheld PID cradle comes with one Quick connector. Additional Quick Connectors must be purchased separately.

Single-Cradle Standalone System

For standalone deployment: please order the AutoRAE 2 Cradle compatible with the unit.

Multi-Cradle System with the AutoRAE 2 Controller

For use with two or more cradles, order the controller (T02-0107-000) PLUS required individual cradle units.

AutoRAE 2 Controlling Networking

Networking is enabled for communication to ProRAE Studio 2 via Ethernet. The Wi-Fi module (T02-0303-000) connects the Controller to ProRAE Studio 2 via a wireless network.



GasCheck Handheld Gas Leak Detector

- Available GasCheck models: **G1, G2, G3, and Tesla**
- For search and location of non-flammable gases
- Particularly sensitive to ammonia, argon, butane, helium, hydrogen, and SF6
- **GasCheck Tesla** detects ultra-low levels of Helium leaks and operates effectively within a magnetic field; optimal for use around MRI scanners
- Micro thermal conductivity detector (TCD)
- Poison resistant sensor with over range protection
- Flashing LED and 90 dBA audible alarms
- Peak Hold function shows maximum leak rate
- Four alkaline AA or rechargeable NiMH batteries

Feature	G1	G2	G3	Tesla
Rapid detection of gas leaks	✓	✓	✓	✓
Measure gas leaks (single gas)		✓		
Measure gas leaks (up to 20 gases)			✓	✓
Audible sounder	✓	✓	✓	✓
Flashing back-lit display	✓	✓	✓	✓
Peak hold readings		✓	✓	✓
Factory or custom calibration		✓	✓	
Datalogging (up to 10 readings)			✓	✓
Readings displayed in cc/sec, g/yr, ppm, or mg/m ³			✓	✓
Selectable battery type			✓	✓
Upgradeable	✓	✓		

Models and Accessories for Sale

Description	Catalog No	Price
GasCheck G1	GG1SAXXS-X	\$2020.00
GasCheck G2	GG2SAXXS-X	3000.00
GasCheck G3	GG3SAXXS-X	3380.00
GasCheck Tesla	GGMSAXXS-X	3930.00
Battery cover standard gray	08024CPC8	50.00
Battery holder	1/BH-01	50.00
Drilled box spanner	A-08029	50.00
Short probe assembly	A-08043	60.00
Long probe assembly	A-08045	90.00
CalCheck Helium	A-21500	1750.00

Comes with Four AA Alkaline batteries, 10" probe, nozzle replacement tool, spare battery clip, operation manual, and ABS plastic carrying case.



GasCheck G3 is available for rent from our affiliate, Raeco Rents. Order online at RaecoRents.com or call 866-736-8347.

MVI Portable Real-Time Mercury Vapor Monitor

- Dual beam UV absorption technology — no saturation, no regeneration — eliminates instrument downtime
- Range 0.1 to 200 and 1.0 to 1999 microgram/cubic meter
- High performance pump delivers fast indication and recovery
- Real time response within three seconds
- Audible alarm and digital display standard

Models and Accessories for Sale

Description	Catalog No	Price
Portable mercury vapor indicator with case	MVSSRXME-X	\$9440.00
Data logger assembly	A-869204	680.00
PTFE water trap filter, 1.0 micron	4/JLF-03	20.00
Probe and 10-pack water trap filters	A-26007	110.00
Carbon filter assembly	A-31057	60.00

MVI includes device and battery charger, stainless steel probe, zeroing charcoal filter, internal dust filter, and certificate of calibration. Order other accessories separately.



Mercury monitors are available for rent from our affiliate, Raeco Rents. Order online at RaecoRents.com or call 866-736-8347.



Tiger Photoionization Detector (PID) for VOCs

- Wide dynamic range ppb to 20,000 ppm for specific volatiles
- Accuracy to $\pm 5\%$ display reading ± 1 digit
- LED, vibratory, and audible alarms — pre-programmed time-weighted average (TWA) and short-term exposure limits (STEL) for 450 different gases
- Logs >120,000 date-time-stamped data points, 33 hours at one log per minute
- Intrinsically safe ATEX, IECEx, and cUL approvals



Models and Accessories for Sale

Description	Catalog No	Price
Tiger PID with 10.6 eV lamp	PTXSLBMP-0005	\$4460.00
PID lamp cleaning kit	A-31063	60.00
Lithium ion rechargeable battery pack	A-861240	370.00
Accessories 10.6 eV lamp	LA4TM600	155.00
MiniPID lamp, 11.7 eV	LA4SM700	400.00

Includes: Detector, PID lamp and cleaning kit, rechargeable battery, charger and power adapter, rubber boot, explorer case, USB memory stick with software, carbon zero filter assembly, PTFE filter disc, MiniPID stack removal tool, 60mm probe tube, lanyard, USB cable, and user manual.



Tiger Select Benzene/Total Aromatic Compound Detector

- Fast to detect total aromatic compounds to 20,000 ppm gas-dependent
- Detects benzene in other compounds with selective benzene pre-filter tube (0–40 ppm); Detects benzene without tubes in areas of benzene gas only
- Accuracy to $\pm 10\%$ display reading ± 1 digit
- LED, vibratory, and audible alarms — plus 15-minute STEL and 8-hour TWA
- Logs >120,000 date-time-stamped data points, 33 hours at one log per minute
- Intrinsically safe ATEX, IECEx, and cUL approvals

Models and Accessories for Sale

Description	Catalog No	Price
Tiger Select PPM instrument with datalogging	PTXSLBMP-0517	\$4950.00
Tiger Select PPB instrument with datalogging	PTXSLBMP-0519	6050.00
PID lamp cleaning kit	A-31063	60.00
Lithium ion rechargeable battery pack	A-861240	370.00
Accessories 10.6 eV lamp	LA4TM600	155.00
MiniPID lamp, 11.7 eV	LA4SM700	400.00

Includes: Detector, PID lamp, battery, battery charger and power adapter, rubber boot, explorer case, USB memory stick with software, 10-pack Ion-Science benzene pre-filter tubes, pellet pack PPB, Draeger Benzene pre-filter tube opener, carbon zero filter assembly, PTFE filter disc, MiniPID stack removal tool, lanyard, PID lamp cleaning kit, coated sensor seal, Tiger Select calibration connector and calibration adapter, o-ring, electrode stack, USB cable, quick-start guide and user manual.



Need continuous VOC monitoring? Get the Ion Science TVOC.

Prices start at \$3460.00

Cub Personal PID for Volatile Organic and Total Aromatic Compounds

- Measures 480 selectable VOC and TAC compounds, benzene selective
- Detects gases in 1 ppb to 5,000 ppm ranges
- Less than 13 second response to hazardous gases and vapors
- Clear audio, visual, and vibrating alarms
- Sensor ranges: Cub PPM 0.1–5,000ppm; Cub PPB 1ppb–5,000ppm; Cub TAC 10ppb–5000ppm



Models and Pricing

Description	Catalog No.	Price	Description	Catalog No.	Price
Cub PPM with Data Dock	CKPSXCAX-WD	\$1730.00	Cub TAC with Data Dock	CKTSXCAX-WD	\$1910.00
Cub PPM with Calibration Dock	CKPSXCAX-WC	3220.00	Cub TAC with Calibration Dock	CKTSXCAX-WC	3400.00
Cub PPB with Data Dock	CKBSXCAX-WD	2060.00	Accessories PID lamp cleaning kit	A-31063	60.00
Cub PPB with Calibration Dock	CKBSXCAX-WC	3550.00	10.6 eV lamp	LA4TM600	160.00



Testo 340 Portable Combustion Tuning Analyzer

- Four-gas flexibility in a rugged, compact handheld design
- Automatic sensor protection keeps your analyzer working longer
- Flexible plug and play sensors swap in and out easily in the field
- Replaceable interference filters for CO and NO sensors increase accuracy and extend sensor lifetime
- Optional "dilution overall" extends the range of all sensors (50,000 ppm CO, 15,000 ppm NO, 25,000 ppm SO₂)
- Standard probes designed for engine or burner/boiler applications plus industrial probes (good to 3200° F) for extreme tuning flexibility
- Automatic flow controlled sampling pump
- 18 standard fuels plus 10 software-enabled user-defined fuels
- Measures O₂, CO, NO, NO₂, SO₂, temperature, draft, differential and absolute pressure
- Calculates CO₂, efficiency, flue gas loss, and flue gas dewpoint
- Low range CO and NO sensors available for critical measurements
- Prints records to Testo infrared printer (10-year thermal paper)
- Huge datalogging capacity: 100 folders, 10 sites per folder, 200 logs per site

Models and Accessories for Sale

Description	Catalog No	Price
340 emission analyzer standard kit (O ₂ , CO)	400563 3341	\$3299.00
340 emission analyzer burner tuning kit (O ₂ , CO, NO, printer)	400563 3342	4395.00
340 emission analyzer engine tuning kit (O ₂ , CO, NO)	400563 3343	4795.00
340 O ₂ upgrade kit (Add at least one upgrade module)	400563 3344	1595.00
Sensor Upgrade Modules	CO upgrade module (0–10000 ppm, H ₂ compensated)	0554 2100 1555.00
	CO low upgrade module (0–500 ppm, H ₂ compensated)	0554 2102 1555.00
	NO upgrade module (0–3000 ppm, 1 ppm resolution)	0554 2150 1555.00
	NO low upgrade module (0–300 ppm, 0.1 ppm resolution)	0554 2152 1555.00
	NO ₂ upgrade module (0–500 ppm, 0.1 ppm resolution)	0554 2200 1555.00
Replacement Sensors	SO ₂ upgrade module (0–5000 ppm, 1 ppm resolution)	0554 2250 1555.00
	O ₂ replacement sensor	0393 0001 205.00
	CO replacement sensor	0393 0100 671.00
	CO low replacement sensor	0393 0102 644.00
Probes	NO ₂ replacement sensor	0393 0200 644.00
	13" probe, 5/16" diameter, 7" Teflon-lined hose	0600 8764 886.00
Accessories	28" probe, 5/16" diameter, 7" Teflon-lined hose	0600 8765 1109.00
	10-pack particle filters for engine probe	0554 3371 45.00
	10-pack particle filters, disk type for standard handle	0554 3385 27.00
	Replacement lithium ion rechargeable battery	0515 5107 64.00
	EasyEmission PC software with USB cable	0554 3334 445.00

Due to contract restrictions, Testo instruments are only available for sale within our Midwest regional territory (though parts are available for unrestricted sale).

340 standard kit includes analyzer with O₂, CO sensor, power supply/charger, 10-pack probe filters, 12" probe with 7' Teflon hose, transport case, and documentation.

340 burner tuning kit includes analyzer with O₂, CO and NO sensors, fast IR printer, six rolls of paper, power supply/charger, 10-pack probe filters, 12" probe with 7' Teflon hose, transport case, and documentation.

340 engine tuning kit includes analyzer with O₂, CO and NO sensors, 2X overall dilution (for all gases), power supply/charger, 10-pack probe filters, engine probe with inline filter and water trap, filter removal tool, transport case, and documentation.

340 upgrade kit includes analyzer with O₂, power supply/charger, 10-pack probe filters, transport case, and documentation. Add upgrade modules as required for your application.

EasyEmissions Data Management Software

- Real time analyzer control through your PC, showing tabular, graphical, and picture box results
- User-defined oxygen reference levels
- Calculates maximum, minimum, and mean values
- Logging intervals once per second to once per hour
- Custom formulas for specific report calculations
- Quick data transfer to Microsoft® Excel® or Adobe® PDF
- Included free with Testo 350 kit purchases; Order separately with Testo 340

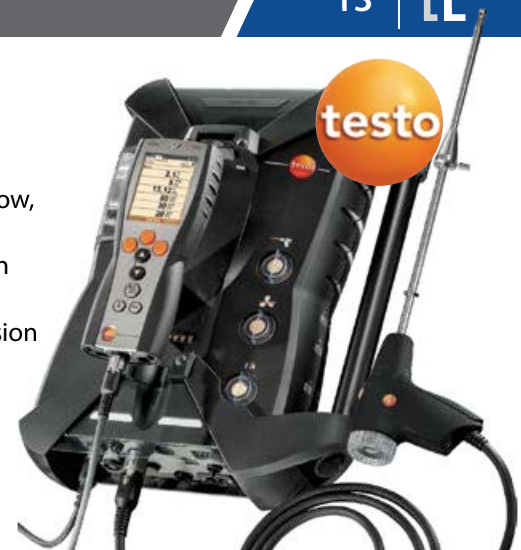




Testo 350 Portable Combustion Efficiency Analyzer

Features

- Test up to six gases simultaneously, or swap sensors out for additional parameters (NOlow, COlow, SO2, H2s, CO2, CxHy)
- Innovative dilution systems for the widest testing ranges and greatest sensor protection (CO to 400,000 ppm, SO, NO2, SO2, H2S to five times the sensor range)
- Integrated pressure measurement for draft, differential pressure, velocity, and mass emission
- Comprehensive calculations including O2 corrections for NOx, CO, and SO2, mass measurement with pitot and stack dimension output
- Advanced sample conditioning uses a thermoelectric chiller for moisture drop-out and a peristaltic hose pump for controlled water removal
- Proven sample gas path with Teflon-lined hoses and continuous temperature compensation for assured accuracy
- Flow rate and sensor temperature monitoring for US EPA CTM-030, 034, and ASTM D6522 requirements; User-defined O2 references for US EPA and state reporting
- User-defined programs with onboard memory to 250,000 values



Models and Accessories for Sale

■ =Standard Kit Item (No added charge) (Add ♦ and ○ as Separate Line Items)

♦=No-Cost Option

○=Upgrade and Add to Total Price



Testo 340 and Testo 350 analyzers are available for rent from Raeco Rents. Order online at RaecoRents.com or call 866-736-8347.

Description	Catalog Number	Availability			Price
350 Boiler and Burner Kit	400563 3512	↓			\$10300.00
350 Engine Testing Kit	400563 3513		↓		11400.00
350 Turbine Testing Kit	400563 3514			↓	12300.00
13" Sampling Probe, 7' Hose (932° F Max.)	0600 9766	■	○	○	555.00
13" Engine Probe, 7' hose (1832° F Max)	0600 8764	○	■	■	886.00
9' Hose Extension (Max Allowable 25')	0554 1202	○	○	○	232.00
Maximum Number of Sensors Allowable		6	6	6	
O2 (0-25%)	0393 0000	■	■	■	242.00
CO (0-10000 ppm)	0554 2104	■	■	○	1555.00
CO low (0-500 ppm)	0554 2102			■	1555.00
CO2 NDIR (0-50%)	0554 2400	○	○	○	3707.00
H2S (0-300 ppm)	0554 2350	○	○	○	1966.00
NO (0-3000 ppm)	0554 2150	■	■	○	1555.00
NO low (0-300 ppm)	0554 2152	○	○	■	1555.00
NO2 (0-500 ppm)	0554 2200	■	■	■	1555.00
SO2 (0-5000 ppm)	0554 2250	○	○	○	1555.00
CxHy (0-4% hydrocarbons)	0554 2300	○	○	○	1740.00
Dilution system upgrade (requires fresh air valve)	0450 3555	○	■	■	1302.00
Fresh air valve	Call	○	■	■	392.00
6' Data Bus Cable	0449 0075	■	■	■	144.00
16' Data Bus Cable	0449 0076	○	○	○	223.00
39" Probe (2200° F), 13' Lined Hose	400600 7803	○	○	○	774.00
Bluetooth Fast Printer (300' Range)	0554 0620	○	○	○	443.00
Infrared Printer	0554 0549	○	○	○	295.00
Thermal Paper, 6 Rolls (10-Year Legibility)	0554 0568	○	○	○	32.00
Rugged Pelican Case with Foam Insertion	400516 3515	○	○	○	724.00

Replacement Sensor Modules

O2 (0-25%)	0393 0000	○	○	○	242.00
CO-H2 (0-10000 ppm)	0393 0104	○	○	○	644.00
CO low (0-500 ppm)	0393 0102	○	○	○	644.00
CO2 (NDIR 0-50% vol%)	0393 0400	○	○	○	3702.00
H2S (0-300 ppm)	0393 0350	○	○	○	698.00
NO (0-3000 ppm)	0393 0150	○	○	○	671.00
NO low (0-300 ppm)	0393 0152	○	○	○	644.00
NO2 (0-500 ppm)	0393 0200	○	○	○	644.00
SO2 (0-5000 ppm)	0393 0250	○	○	○	644.00
CxHy (0-4% hydrocarbons)	0393 0300	○	○	○	684.00

All systems include: Control unit and analyzer box, Bluetooth 2.0 communications, internal memory to 250,000 readings, advanced sensor temperature compensation, multiple temperature measurement (stack, sensor, ambient), sample flow rate monitoring (EPA compliant), auto CO overrange protection, thermoelectric sample conditioner with condensate removal pump, fresh air valve for automatic programs and long-term testing, differential pressure measurement, USB connection, AC power cable, extra particle filters, 6' data bus communications cable, easyEmissions software, standard carrying case, and calibration certificate.



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Honeywell

THE POWER OF **CONNECTED**

XXN Universal Gas Detection Transmitter

Features

- Supports mV (catalytic bead or IR), electrochemical cell and IR (point and open-path) gas detection
- 4-20 mA with HART® standard; Options include up to 3 relays, MODBUS® and FOUNDATION® H1 Fieldbus; Optional local IS port for handheld HART configurator
- Large, backlit, easy-to-view LCD display offers visual icons, colored buttons, and text to display gas and sensor readings
- Self-test and fault indication features; Quick calibration
- Robust and reliable operation in harsh environments

XXN is designed for flexible integration, simple installation, user friendly operation and straightforward maintenance. A powerful advanced communications module adds increased functionality and flexibility to a gas detection network. Standard HART communications, along with optional Modbus, Foundation Fieldbus or relays, interface with a PLC.

The XXN enclosure is available in a painted stainless steel or aluminum housing with a marine grade coating. Rugged mounting options provide ultimate installation flexibility. Sensor instrumentation can be attached locally to the transmitter or remotely with the appropriate accessories. Inside, customer and sensor connections to the unit are designed to protect against dangerous electrical misconnections. With approvals to UL, CSA and ATEX requirements for Hazardous Locations, and IP66/67 rating to protect against dirt/water ingress, the XXN serves the most demanding industrial environments.

Condensed Specifications

Enclosure: Painted aluminum or 316 stainless steel, five conduit/cable entries; NEMA 4X/IP65 rated

Interface: Backlit 2.5" tall LCD high resolution dot matrix display with discrete alarm and status indication; Reliable non-intrusive four-button interface with magnetic wand access. HART handheld with IS port optional

Display: Gas reading, gas name and engineering units, fault and alarm status, large numeric concentration or LEL display, bargraph showing current reading, setpoints and full scale; Fault/alarm and operating status indication; Security settings allow multi-level operator access for setup, configuration and calibration; Event history stores time and date of all alarm, diagnostic, and configuration events

Output Signal: Standard HART over three-wire, 4-20 mA. Optional Form C and three 5A SPDT relays (two alarm, one fault); Modbus over RS-485 and Foundation Fieldbus (not available with relays)

Approvals: Hazardous Area: UL: Class I, Div 1, Groups B-D, Class 1, Zone 1, AEx d IIC T5; CSA: Class I, Div 1, Groups B-D, T5; Performance: UL 913, UL 1203, CSA 22.2 #152 pending; SIL 2

Honeywell XXN Series Gas Sensors and Ranges

Gas Type	Range
Acetylene IR	0-2.5%
Ammonia	0-100 ppm 0-1000 ppm
Arsine	0-2 ppm
Bromine	0-5 ppm
Carbon Dioxide IR	0-5000 ppm
Carbon Dioxide	0-2% 0-5%
Carbon Monoxide	0-100 ppm 0-500 ppm 0-1000 ppm
Chlorine	0-5 ppm 0-10 ppm 0-20 ppm
Chlorine Dioxide	0-3 ppm
Diborane	0-50 ppm
Ethylene Oxide	0-10 ppm
Fluorine	0-5 ppm
Germane	0-3 ppm
Hydrogen	0-1000 ppm
Hydrogen Cyanide	0-50 ppm
Hydrogen Chloride	0-50 ppm
Hydrogen Fluoride	0-10 ppm
Hydrogen Sulfide	0-10 ppm 0-50 ppm 0-100 ppm 0-500 ppm
Hydrogen Sulfide	Solid State
Nitric Oxide	0-100 ppm
Nitrogen Dioxide	0-10 ppm
Oxygen	0-10% 0-25%
Phosphine	0-2 ppm
Silane	0-25 ppm
Sulfur Dioxide	0-25 ppm 0-100 ppm
Combustible Gases (0-100% LEL)	
Natural Gas & H2	
Petroleum Vapors	
Solvents	
IR for Methane	
IR for Propane	
ATEX 4.4% CH4, Natural Gas & H2	
ATEX 1.7% Propane Petroleum Vapors	
ATEX 1.7% Propane Solvents	
IR Methane, ATEX 4.4% CH4	
IR Non-Methane, ATEX 1.7% Propane	
Oxygen	
Solvent-Tolerant	
Solvent/CO2-Tolerant	
Low	
Low, Solvent-Tolerant	



Learn more online at bit.ly/hw-xxn



HART
COMMUNICATION PROTOCOL

HART® Handheld Communicator

Fast startup, long battery life on standard batteries. Holds hundreds of device files and configurations! Download DOF and firmware updates from www.Meriam.com.

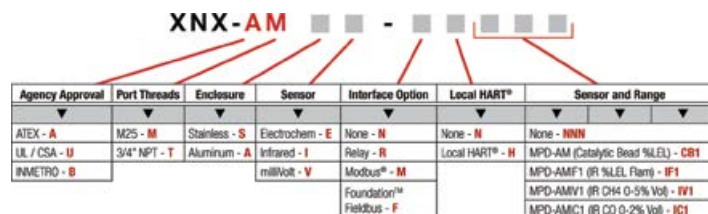
General Service HART Communicator	MFC5150	\$5300.00
Intrinsically Safe HART Communicator	MFC5150X	5750.00



A complete XNX model consists of the following:

- 1 An XNX transmitter base station
- 2 Your choice of electrochemical cell, infrared, or mV sensors

Start with your XNX-UT model, and then add the necessary number of sensors as individual line items. **Example:** XNX-UTAE-RHNNN with one each XNXXSC1SS and XNXXSS1SS sensors.



Model Selection Guide

Description	Catalog No.	Avail-ability	Price
UL Approved XNX Transmitter Base Station	XNX-UT_ _	• • •	\$0.00
Enclo- sure	Aluminum, 3/4" NPT threads	__ A _	• • • 152.00
	316 SS, 3/4" NPT threads	__ S _	• • • 254.00
Sensor Type	Electrochemical cell	___ E-	↓ 920.00
	Infrared (combustible gas)	___ I-	↓ 576.00
	milliVolt	___ V-	↓ 576.00
	None	N ____	• • • 0.00
Output Interface	Relay	R ____	• • • 110.00
	Modbus	M ____	• • • 135.00
	Foundation Fieldbus	F ____	558.00
	None	_ NNNN	• • • 0.00
Local Interface	Local HART* (requires handheld)	_ HNNN	• • • 225.00
Spare Magnetic Wand/Screwdriver	1226-0254	• • •	9.00

If you picked sensor type E, select your electrochemical cell sensors below.

Description	Catalog No.	Avail-ability	Price
Electrochemical cell (EC) toxic and oxygen sensors for XNX universal transmitter		↓	
Oxygen, 0-25% volume	XNXXSO1SS	•	\$447.00
Carbon Monoxide	XNXXSC1SS	•	447.00
Hydrogen Sulfide, 0-15/10-50 ppm	XNXXSH1SS	•	447.00
Hydrogen Sulfide, 0-100 ppm	XNXXSH2SS	•	447.00
Chlorine	XNXXSL1SS	•	559.00
Sulfur Dioxide, 0-15 ppm	XNXXSS1SS	•	559.00
Sulfur Dioxide, 0-50 ppm	XNXXSS2SS	•	559.00
Chlorine Dioxide	XNXXSX1SS	•	559.00
Hydrogen, 0-1000 ppm	XNXXSG1SS	•	559.00
Hydrogen, 0-10000 ppm	XNXXSG2SS	•	559.00
Phosphine	XNXXSP1SS	•	670.00

Accessories for EC sensors

XNX Remote EC Sensor Mount Kit	S3KRMK	•	506.00
Calibration Gas Flow Adapter Kit	S3KCAL	•	67.00

Replacement toxic and oxygen sensor cartridges for EC sensors

Oxygen, 0-25% volume	S3KO1SS	•	251.00
Carbon Monoxide	S3KC1SS	•	251.00
Hydrogen Sulfide, 0-15/10-50 ppm	S3KH1SS	•	251.00
Hydrogen Sulfide, 0-100 ppm	S3KH2SS	•	251.00
Chlorine	S3KL1SS	•	363.00
Sulfur Dioxide, 0-15 ppm	S3KS1SS	•	363.00
Chlorine Dioxide	S3KX1SS	•	363.00
Hydrogen, 0-1000 ppm	S3KG1SS	•	363.00
Hydrogen, 0-10000 ppm	S3KG2SS	•	363.00
Phosphine	S3KP1SS	•	447.00

If you picked sensor type I, select your infrared sensors below.

Description	Catalog No.	Avail-ability	Price
UL Approved Optima Plus Infrared Combustible Gas Detection Sensors: Configured as current source output, standard with dust barrier, weather housing, and deluge/heat shade		↓	
Hydrocarbon calibration	Standard	2108N4100N	• \$1614.00
	With remote gassing cell	2108N4110N	• 1674.00
	With remote gassing cell and flow housing	2108N5100N	• 1885.00
Ethylene calibration	Standard	2108N4101N	• 1614.00
	With remote gassing cell	2108N4111N	• 1674.00
	With remote gassing cell and flow housing	2108N5101N	1885.00
Additional Non-Standard Calibrations for Optima Plus IR Combustible Gas Detection Sensors (100% LEL Unless Specified)	Acetone	2108D3012	• 185.00
	Band A High IR	2108D3150	• 185.00
	Band B High IR	2108D3151	• 185.00
	Band C Medium IR	2108D3152	• 185.00
	Band D Low IR	2108D3153	• 185.00
	Benzene	2108D3227	• 185.00
	Butanone (MEK)	2108D3023	• 97.00
	Cyclohexane	2108D3024	• 97.00
	Cyclohexanone	2108D3026	• 97.00
	Di-Methyl Ether	2108D3059	• 97.00
	Ethyl Acetate	2108D3030	• 185.00
	Methane	2108D3001	• 0.00
	O-Xylene	2108D3044	• 185.00
	Propane	2108D3004	• 0.00
	Propane, 60% V/V	2108D3102	• 97.00
	Propylene	2108D3006	• 185.00
	P-Xylene	2108D3054	• 185.00
	Styrene	2108D3228	• 185.00
	Toluene	2108D3042	• 185.00

Accessories for Optima Plus IR combustible gas sensors

Gassing Cover (for Bump Verification)	2108D0258	•	152.00
Calibration Cap	2108B0272	•	220.00
Universal Duct Mounting Kit	1283K2240	•	598.00
Right Angle Junction Box for Use with Universal Duct Mounting Kit	1283A2266	•	133.00

If you picked sensor type V, select your milliVolt sensors below.

Description	Catalog No.	Avail-ability	Price
Replace -NNN in the XNX model number with the code below.		↓	
MPD-AM Catalytic Bead, %LEL	CB1	•	\$629.00
MPD-AMIF1 IR %LEL Flammable	IF1	•	850.00
MPD-AMIV1 IR CH4 0-5% Volume	IV1	•	850.00
MPD-AMIC1 R CO2 0-5% Volume	IC1	•	850.00

Replacement Cartridges for MPD Sensors

Catalytic Bead Cartridge, %LEL	1226A0359	•	322.00
IR Cartridge, %LEL Flammable	1226-0300	•	447.00
IR Cartridge, CH4 0-5% V/V	1226-0299	•	447.00
IR Cartridge, CO2 0-5% V/V	1226-0301	•	447.00



Searchline Excel Infrared Open Path Flammable Gas Detector

Searchline Excel open path gas detection systems measure gas cloud concentration over a distance of up to 656 feet where gas concentrations are not uniform. Searchline Excel is totally immune to interference from sunlight or any other sources of radiation such as flare stacks, arc welding or lightning. It uses a patented double band pass filter that fully compensates for all types of fog and rain, so it can operate accurately and reliably in all climatic conditions.

Features

- Fast speed of response gives earliest warning
- High sensitivity allows low alarm set points
- Alignment free design makes installation simple
- Duct flex and vibration tolerance keeps the system online
- Integral functional gas test facility allows for simple system check
- Contamination resistant optics reduce the need for unscheduled maintenance
- Not affected by interference from water vapor
- Immune to catalytic poisons
- Works in inert atmospheres
- Coaxial optics operate correctly under partial obstruction conditions without false alarms

Why open path detection?

- Wider area coverage — most likely to pick up any leak
- Very high speed of response
- NO unrevealed failure modes — no possibility of blocked gas path to detector
- Detector location not as critical
- Indicates size of hazard

Three Versions:

- Short range: 16 – 131 ft
- Medium range: 131 – 393 ft
- Long range: 393 – 656 ft

Measuring Range: 0–100% LEL

Signal Output: 4–20mA autosensing sink or source

Hazardous Area Approvals: ATEX, UL, CSA

Model Selection Guide

Description		Catalog No.	Price
<i>Searchline Excel, UL/CSA Certified, Sunshield Included</i>			
Short range TX/RX 15ft to 130ft, current source		02104-N-5010	\$8293.00
Medium range TX/RX 130ft to 390ft, current source		02104-N-5020	10349.00
Long range TX/RX 390ft to 650ft, current source		02104-N-5030	13272.00
Installation Hardware	Excel installation hardware kit (UL/CSA Certified)	2992K0088	754.00
	Methane (CH ₄) / LEL.m (standard calibration)	2104D5026	0.00
Gas Calibrations	Ethane (C ₂ H ₆) / LEL.m	2104D5002	140.00
	Propane (C ₃ H ₈) / LEL.m	2104D5003	140.00
	Butane (C ₄ H ₁₀) / LEL.m	2104D5004	140.00
	Pentane (C ₅ H ₁₂) / LEL.m	2104D5005	140.00
	Ethylene (C ₂ H ₄) / LEL.m (standard calibration)	2104D5021	0.00
	Propylene (C ₃ H ₆) / LEL.m	2104D5022	140.00
	Butadiene (C ₄ H ₆) / LEL.m	2104D5023	140.00
	Short range Excel and XNX alignment and conformity kit including telescope, carry case and test filters (no SHC1)	02104-N-4006X	1607.00
Alignment Kits For Use With XNX	Long/medium range Excel and XNX alignment and conformity kit including telescope, carry case and test filters (no SHC1)	02104-N-4007X	2088.00
Accessories and Spare Parts	Sun/heat shade (deluge cover)	2104D0295	159.00
	Excel test filters Kit type B, C, D, E, F, G, H and manual	2104N2999	338.00
	Short Range Receiver UL Source	2104B3101	6841.00

Searchzone Sonik™ Bluetooth®-Enabled Ultrasonic Gas Leak Detector

Honeywell's newly released Sonik ultrasonic gas detector responds to the distinct sound pattern of a leak created by high-pressure gas leaks. Because the gas does not have to come in contact with the sensor for the leak to be detected, Sonik is not affected by airflows and adverse weather conditions.

Features

- Solid state sensor is completely sealed from moisture making it suitable for harsh environments
- Background noise detection lowers the risk of false alarms
- 65 ft detection radius, dependent on background noise
- Status indicator light
- Set up and do confidence checks from ground level on IS mobile phone
- Integrates with existing point and open path detectors
- SIL 2 certified



Unaffected by airflows and harsh weather

Call for pricing and availability.



Searchpoint Optima Plus Infrared Point Hydrocarbon Detector

Searchpoint Optima Plus is an infrared point Hydrocarbon gas detector certified for use in potentially explosive atmospheres. Its infrared detection principle offers the fastest speed of response and fail-to-safe operation, ensuring that your plant is compliant, your personnel are protected and your production process can deliver maximum uptime. It offers reduced routine maintenance, when compared with conventional electro-catalytic based gas detectors, provides low cost of ownership.

Typical applications include environments that may contain catalytic bead poisons or inhibitors, or where there are harsh environmental conditions forcing increased time between routine maintenance. Optima is optimal for use in offshore oil and gas platforms, floating production storage and offloading (FPSO) vessels, tankers, onshore oil and gas terminals, refineries, LNG / LPG bottling plants, gas compressor / metering stations, gas turbine power plants, refineries, solvent printing and coating plants.

- More than 100 gas and vapor calibrations are available
- Can detect a wide range of hydrocarbon gases including solvents
- Increased reliability with no moving parts
- Increased stability from self compensating optics
- Immune to long term component drift
- Dynamic Heating Control ensures condensation free optics
- Reduced power consumption
- Optional HART® over 4-20mA output
- Hazardous area approvals: European (ATEX), UL, CSA, IECEx



Benefits of Infrared:

- Failsafe operation
- Fast speed of response
- Long operating life
- Reduced routine maintenance
- Immune to catalytic poisons
- Works in inert atmospheres

Detectable Gases

Examples of unique detectable gases. Many more gases available.

Target Gas	Gas Reference Calibration
152A Difluoroethane (C ₂ H ₄ F ₂)	Band C
Aeron A-31 isobutane (C ₄ H ₁₀)	Butane (C ₄ H ₁₀)
Aeron A-46 LPG (C ₃ H ₈)	Butane (C ₄ H ₁₀)
Allyl alcohol (C ₃ H ₆ O)	Band C
Amyl alcohol (C ₅ H ₁₁ OH)	Band C
Benzene (C ₆ H ₆)	Ethylene (C ₂ H ₄) 0-100% LEL
Butadiene dimer (C ₈ H ₁₂)	Ethylene (C ₂ H ₄) 0-100% (leak detection only)
Butadiene-1,2 (C ₄ H ₆)	Ethylene (C ₂ H ₄) 0-100% (leak detection only)
Butene (C ₄ H ₈)	Band C
Cyclopentane (C ₅ H ₁₀)	Band C
Dichloro-ethane (C ₂ H ₄ Cl ₂)	Band D
AVTUR JP8	Band B
Difluoroethane (C ₂ H ₄ F ₂)	Band B
Dimethyl ether (C ₂ H ₆ O)	Butane (C ₄ H ₁₀)
Ethylene dichloride (EDC) (C ₂ H ₄ Cl ₂)	Band D
Ethylene oxide (C ₂ H ₄ O)	Band C
IsoButylene (C ₄ H ₈)	Band B
Iso-hexane (C ₆ H ₁₄)	Hexane (C ₆ H ₁₄) 0-100 LEL
Methyl ethyl ketone (C ₄ H ₈ O)	Butanone (C ₄ H ₈ O) 0-100% LEL
Polypropylene ((C ₃ H ₆) _n)	Propylene ((C ₃ H ₆) _n) 0-100% LEL
Styrene (C ₈ H ₈)	Ethylene (C ₂ H ₄) 0-100% LEL (leak detection only)
Tetrahydrofuran (C ₄ H ₈ O)	Band B
Turpentine (C ₁₀ H ₁₆)	Band B
Xylene (C ₈ H ₁₀)	Band C

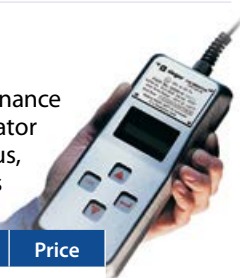
Model Selection Guide

Description	Catalog No.	Price
Hydrocarbon Optima Plus Gas Detector, 4 to 20mA output, electro polished 316SS, UL/ Inmetro Certified, 3/4" NPT Thread Spigot		
Optima Plus includes polyester mesh dust barrier, nylon weather protection housing and LNP Faradex deluge/sunshade	2108N4100N	\$1614.00
Optima Plus includes pre-fitted remote gassing cell, polyester mesh dust barrier, nylon weather protection housing and LNP Faradex deluge/sunshade	2108N4110N	1674.00
Optima Plus Gas Detector includes black anodized aluminum flow housing	2108N5100N	1885.00
Accessories		
Remote mount six wire junction box (UL certified)	2441-0022	207.00
Dust barrier	2108B0259	62.00
Weather housing	2108B0276	230.00
Optima Plus flow housing	2108B0282	274.00
Optima Plus gassing cover	2108D0258	152.00
Optima Plus calibration cap	2108B0272	220.00
Optima Plus deluge / heat shade	2108D0275	121.00
Junction box-Bartec DE1155 with continuity plate 1 x 25 mm-3 x 20 mm entries (ATEX certified)	00780-A-0100	114.00

Multi Purpose Handheld Configurator

Interrogator (SHC-1) is a versatile commissioning/maintenance tool certified for hazardous areas. You can use the Interrogator to reconfigure Searchline Excel, Searchpoint Optima Plus, and the original Searchpoint Optima for different gases and fault diagnostics.

Description	Catalog No.	Price
Hand held interrogator UL certified (4V0 software) for Optima, Optima Plus, and Excel	2104B2351	\$1571.00



**Honeywell**

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Series 3000 MkII Loop-Powered Flame-Proof Toxic and Oxygen Gas Detection Transmitter

Features

- Proven plug-and-play factory-configured long life electrochemical sensors, patented Reflex® sensing element verification diagnostics
- Sensor recognition software automatically configures transmitter with plug-and-play factory configured sensors
- Uses SureCell™ electrochemical cells, ideal for hot and humid environments
- Explosion-proof transmitter allows field wiring to be run along with other non-IS instruments
- Configure without a Hot Work Permit using the LCD and magnetic switches
- Intrinsically safe sensor connection permits hot swap, reducing downtime and maintenance
- UL, cUL, ATEX, and IEC Ex approved

Honeywell's Series 3000 MkII transmitter provides comprehensive monitoring of toxic and oxygen gas hazards in potentially explosive atmospheres, both indoors and out. This gas detector operates on an industry standard two-wire 4-20 mA loop, making it ideal for both new and

retrofit applications. You can configure the detector using the LCD and magnetic switches — no need for a hot work permit. Fault diagnostic software and programmable calibration frequency simplifies maintenance procedures.

A remote sensor mounting kit is available for mounting the sensor up to 50 feet from the transmitter, making it ideal for operation in areas that are difficult to access.

Detectable Gases and Ranges

Gas	Default Range
Ammonia low range	0–200 ppm
Ammonia high range	0–1,000 ppm
Carbon Monoxide	0–300 ppm
Chlorine	0–5 ppm
Chlorine Dioxide	0–1 ppm
Ethylene Oxide	0–25 ppm
Flourine	0–4 ppm
Hydrogen low range	0–1,000 ppm
Hydrogen high range	0–10,000 ppm
Hydrogen Chloride	0–10 ppm
Hydrogen Cyanide	0–30 ppm
Hydrogen Fluoride	0–12.0 ppm
Hydrogen Sulfide	0–15.0 ppm
Hydrogen Sulfide	0–100 ppm
Nitrogen Dioxide	0–10 ppm
Nitric Monoxide	0–100 ppm
Oxygen	0–25% VOL
Ozone	0–0.4 ppm
Phosphine	0–1.2 ppm
Sulfur Dioxide	0–15 ppm

Model Selection Guide

	Description	Catalog No.	Price
	Series 3000 MkII, Aluminum LM25 housing, 2 x 3/4"NPT entries, UL/cUL approved	S3KUL2	\$735.00
	Series 3000 MkII, Stainless Steel 316 housing, 2 x 3/4"NPT entries, UL/cUL approved	S3KUS2	962.00
Gas Sensors	Oxygen	XNXXSO1SS	447.00
	Carbon Monoxide	XNXXSC1SS	447.00
	Hydrogen Sulfide	XNXXSH1SS	447.00
	Hydrogen Sulfide	XNXXSH2SS	447.00
	Chlorine	XNXXSL1SS	559.00
	Sulfur Dioxide	XNXXSS1SS	559.00
	Chlorine Dioxide	XNXXSX1SS	559.00
	Nitrogen Monoxide	XNXXSM1SS	559.00
	Nitrogen Dioxide	XNXXSN1SS	559.00
	Hydrogen low range	XNXXSG1SS	559.00
	Hydrogen high range	XNXXSG2SS	559.00
	Hydrogen fluoride	XNXXSF1SS	670.00
	Ammonia low range	XNXXSA1SS	670.00
	Ammonia high range	XNXXSA2SS	670.00
	Phosphine	XNXXSP1SS	670.00
	Hydrogen Chloride	XNXXSR1SS	670.00
	Hydrogen Cyanide	S3KXSY1SS	670.00
	Ethylene Oxide (EtO) user-selectable from 20ppm to 50ppm	S3KXSE1SS	670.00
	Calibration cup	S3KCAL	67.00
	Duct mounting kit for flat surfaces only (for CO, H2 and H2S)	S3KDMK	218.00
Accessories	Remote EC mounting kit (50 feet)	S3KRMK	506.00

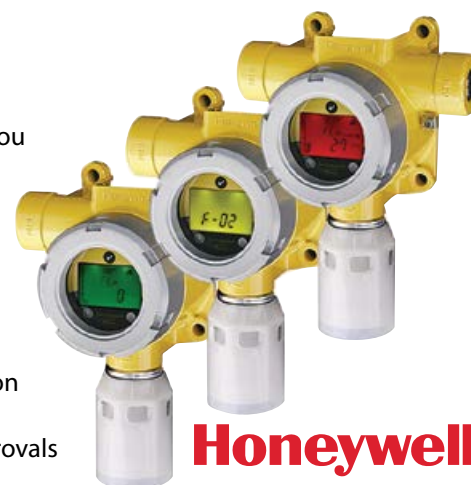
Get full specifications and learn more about fixed gas transmitter at bit.ly/fixed-gas



Sensepoint XCD Gas Detection Transmitters

Features

- Common transmitter platform — One transmitter works with a variety of sensors, so you stock fewer spares and spend less time training operators
- SureCell® electrochemical sensors, Poison-immune infrared sensors; Poison-resistant catalytic bead sensors; Long life sensors
- IP66 Stainless steel or aluminum explosion-proof housing
- Three-color backlit LCD with digits, bargraph and icons
- Fully configurable via magnetic switches
- MODBUS communications for remote diagnostics/configuration, and multi-drop option for saving cable costs
- UL/CSA approved; Also available with INMETRO, ATEX, IECEx, KTL, PA, GB and CCCF approvals



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Honeywell's Sensepoint XCD transmitter provides comprehensive monitoring of flammable, toxic and oxygen gas hazards in potentially explosive atmospheres, indoors and outdoors.

The transmitter can auto-recognize any XCD-compatible installed sensor. The sensor plugs into the bottom of the transmitter, and the transmitter configures itself accordingly. You can modify detector operation via the LCD and magnet switches without ever opening the unit. This enables one-man, non-intrusive operation and reduces routine maintenance time and costs.

A tricolor backlit LCD clearly indicates the unit's status at a glance, even from a distance. A steady green backlight indicates normal operation, yellow indicates fault and red indicates an alarm.



Normal

Fault/
Warning

Alarm

All detectors are supplied pre-configured and include two programmable alarm relays, one programmable fault relay plus 4-20 mA output (sink or source selectable) and Modbus communications. The scale, range, relay operation, alarm setpoint and detector's electronic tag number can be adjusted in the field. Outputs are automatically inhibited during adjustment, reducing the risk of false alarm at the control panel during maintenance.

Condensed Specifications

Interface: Backlit color LCD display with alarm and status indication;
Non-intrusive interface with magnetic wand access

Output: 4–20 mA current (source or sink), three 5A relays, configured normally open or normally closed and energized/de-energized;
RS-485 Modbus

Enclosure: IP66-rated epoxy-painted aluminum alloy or 316 stainless steel

Input Voltage: 16–32 VDC (24 VDC nominal)

Approvals: UL, cUL, CSA

Detectable Gases

Gas Type	Span/Range	Default Range	Step	Acceptable Calibration Gas
O ₂	25.0% Vol	—	—	20.9% Vol Fixed
H ₂ S	10.0–100.0 ppm	50 ppm	1 ppm	30–70% selected full scale range (typically 50%)
CO	100–1000 ppm	500 ppm	100 ppm	
H ₂	1000 ppm	—	—	
Methane CAT or IR	20.0–100% LEL	100% LEL	10% LEL	
CO ₂ IR	2.00% Vol	—	—	

Model Selection Guide

Description	Aluminum Enclosure		Stainless Steel Enclosure	
	Catalog No.	Price	Catalog No.	Price

*UL/CSA Approved XCD Transmitter, 4-20 mA Output, Two 3/4" NPT Threads
Sensor Type and Gas Selection:*

Oxygen (O ₂)	SPXCDULNO1	1019.00	SPXCDUSNO1	\$1237.00
Hydrogen Sulfide (H ₂ S)	SPXCDULNHX	1019.00	SPXCDUSNHX	1237.00
Carbon Monoxide (CO)	SPXCDULNCX	1019.00	SPXCDUSNCX	1237.00
Hydrogen (H ₂)	SPXCDULNG1	1019.00	SPXCDUSNG1	1237.00
Flammable, CAT	SPXCDULNFX	1029.00	SPXCDUSNFX	1127.00
Flammable CH ₄ IR	SPXCDULNRX	1047.00	SPXCDUSNRX	1346.00
Carbon Dioxide IR (CO ₂)	SPXCDULNB1	1127.00	SPXCDUSNB1	1346.00

Accessories

Calibration Cap	S3KCAL	67.00
Collecting Cone (for Light Gases)	SPXCDCC	69.00
Mounting Bracket	SPXCDMTBR	64.00
Sunshade/Deluge Protection	SPXCDSDP	248.00

Replacement Cartridges

Oxygen	SPXCDXS01SS	360.00
Hydrogen Sulfide	SPXCDXSHXSS	360.00
Carbon Monoxide	SPXCDXSCXSS	360.00
Hydrogen	SPXCDXSG1SS	514.00
Flammable CAT	SPXCDXSFXSS	335.00
Flammable IR (Methane)	SPXCDXSXRSS	627.00

Honeywell Manning AirScan IR-F9 Ammonia Gas Monitor

- Gases monitored: CO₂, NH₃, R-404a, R-22, R-507a, R-134a, R-407a, R-410a, R-422d, HFO-1234yf
- Diffusion sampling with no moving parts, and real time continuous monitoring of all points
- Operates in condensing humidity, and during washdown
- Operating temperature: Standard: -20° to 140° F; ATMOS: -40° to 140° F; Superheat: -60° to 140° F
- Has no moving parts and doesn't require pumps or filters
- Applications: banana and produce rooms, beverage plants, breweries and wineries, confined space entry, food processing, gas bottling plants, ice rinks, product coolers, rack houses, refrigeration systems, supermarkets
- Can be used with any Honeywell Analytics readout

AirScan IR-F9 has a rugged steel enclosure and infrared sensor that ensures long-term, trouble-free operation, unaffected by severe environments. It's washdown-safe and works in anything from -60° F to 100% humidity. SensorCheck™ technology continuously monitors sensor performance and checks voltage, internal circuitry, operating temperature, wire length and other operating elements.



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Model Selection Guide

Description	Catalog No.	Price
Ammonia (NH ₃), 0-20,000 ppm, NEMA 1 enclosure	M-512345	\$1589.00
Ammonia (NH ₃), 0-20,000 ppm, ATMOS, NEMA 1 enclosure	M-512342	1850.00
Ammonia (NH ₃), 0-20,000 ppm, stainless steel enclosure	M-512352	1834.00
Ammonia (NH ₃), 0-20,000 ppm, ATMOS, stainless steel enclosure	M-512353	2094.00
Ammonia (NH ₃), 0-20,000 ppm, ATMOS, super heat, stainless steel enclosure	M-700005	2288.00

AirScan IR-F9 also has CO₂ and other refrigerant sensors, including R-404a, R-22, R-507a, R-134a, R-407a, R-410a, R-422d, and HFO-1234yf.

Call 800-953-7626 for details!



Lesman Field Services are available in Wisconsin, Eastern Iowa, Illinois, and Indiana.

Schedule your FREE site survey today! Visit bit.ly/lesman-fs or call 800-953-7626

Trust your gas detection system

Routine Sensor Calibrations

Regular calibration is the easiest way to ensure worker confidence in your gas detection systems. Lesman Field Service technicians will come to your plant on a regularly scheduled basis for:

- Full calibration on electrochemical cells and catalytic bead sensors
- Zero calibration and annual bump tests on infrared sensors
- Response checks on open path sensors and paper tape toxic gas detector cartridges

Our calibration technicians follow manufacturers' specifications and document the full scope of work. And with every visit, you'll get full documentation of the calibration results, so if there's ever an issue, you have the reports to prove that your plant safety systems are being properly serviced and maintained.

System Functional Tests

Knowing that your sensors are properly detecting gas is only half the battle. Functional tests help you ensure that the sensor outputs are working as expected: sounding alarms, turning on lamps, sending signals to your PLC, or notifying the local fire department.

After reviewing your cause and effect matrix, a Lesman Field Service technician will run functional tests to make sure the whole system is working as expected.

Reasons to use an outside service for calibrating the gas detectors in your plant?

- Added level of trust in your gas detection system
- You can keep working on your projects while consultants perform routine calibrations
- Get complete paperwork with dates, sensor readings, and calibration gas concentrations
- You don't have testing supplies, training, or experience
- Confidence in calibrations when they are done by an experienced professional



Sensepoint XRL Flammable or Toxic Gas Detector

Honeywell Sensepoint XRL is a fixed point gas detector that connects to your smartphone or tablet via Bluetooth, and lets you use the Sensepoint gas detector app to perform many tasks related to installation, commissioning, and maintenance. The mobile app lets you check real-time gas concentrations, reconfigure settings, check unit history, export calibration reports, and do maintenance non-intrusively, so there is no need for a hot work permit.

- Choice of toxic, oxygen, or flammable sensors
- mA loop or Modbus RTU output
- Bluetooth range to 32.8" (10m)
- Multi-color LED status indication
- Compatible with Touchpoint Plus gas detection controller (see page 25)
- Aluminum alloy yellow or charcoal housing
- Approvals: ATEX, IECEx, cULus

Sensepoint XCL Flammable or Toxic Gas Detector for Light Industrial or Commercial Applications

Honeywell XCL was designed for ease of installation, commissioning, use and maintenance. With a choice of flammable or toxic gas sensors, the XCL can be used to protect parking structures, loading docks, transport terminals, hospital/ambulance bays, car washes, battery charging rooms and hydrogen tanks, commercial kitchens, indoor stadiums, outbuildings and more.

- One-person calibration and servicing via mobile application
- Reports can be emailed directly from the app
- Integral gassing port for hard-to-reach locations
- mA loop or Modbus RTU output (relays optional)
- Multi-color LED status indication
- Choice of toxic, oxygen, or flammable sensors: CO, NO₂, H₂S, H₂, O₂, CH₄, NH₃
- Compatible with Touchpoint Plus gas detection controller (see page 25 for more details)



Model Selection Guide

Description		Availability	Catalog No.	Price	Availability	Catalog No.	Price
Sensor	Range						
Sensepoint XRL Gas Detector, 4-20mA Output, Yellow Enclosure, cULus		↓					
Sensepoint XCL Gas Detector, 4-20mA Output, Charcoal Enclosure					↓		
Combustible	0 to 100% LEL (Factory calibrated to Methane)	✓	SPLIF6BAXYNUZZ ¹	\$690.00	✓	SPLCF6BAXCXNZZ ²	\$484.50
O ₂	0 to 25% volume	✓	SPLIO1BAXYNUZZ	770.00	✓	SPLCO1BAXCXNZZ	484.50
CO	0 to 300 ppm (adjustable between 50 and 1000 ppm)	✓	SPLIC1BAXYNUZZ	770.00	✓	SPLCC1BAXCXNZZ	433.50
H ₂	1000 ppm	✓	SPLIG1BAXYNUZZ	810.00	✓	SPLCG1BAXCXNZZ	484.50
H ₂ S Low Range	50 ppm (adjustable between 10 and 50 ppm)	✓	SPLIH1BAXYNUZZ	770.00	✓	SPLCH2BAXCXNZZ	484.50
H ₂ S High Range	100 ppm (adjustable between 50 and 200 ppm)	✓	SPLIH2BAXYNUZZ	770.00	✓	SPLCH1BAXCXNZZ	484.50
NO ₂	20 ppm (adjustable between 5 and 50 ppm)	✓	SPLIN1BAXYNUZZ	810.00	✓	SPLCN1BAXCXNZZ	433.50
NH ₃	200 ppm (adjustable between 50 and 200 ppm)	—	—	—	✓	SPLCA1BAXCXNZZ	484.50
Accessories							
Calibration Cap		✓	SPXRLCAL	64.00	✓	SPXCLCAL	26.25
Duct Mount Kit		✓	SPXRLDMK	190.00	✓	SPXCLDMK	47.25
Optional Weather Protection		✓	SPXCDWP	56.00	—	—	—
Gassing Port		—	—	—	✓	SPXCLRGP	15.75

¹ XRL is also available in charcoal — replace "Y" in the catalog number with "C", for example: SPLIF6BAXCNUZZ

² XCL is also available in white — replace "C" in the catalog number with "W", for example: SPLCF6BAXWXNZZ

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MIDAS Gas Monitor With Built-In Web Server

Features

- Monitors points up to 100 feet away
- Has over 35 gas sensors available
- Interface gives instant alerts to gas readings or alarm levels
- Easy installation
- Easy access to key information through a standard web browser
- Pre-calibrated sensor and pump modules contribute to simple, low-cost maintenance
- Power over Ethernet (PoE) communication
- Isolated 0-22 mA analog output with fault and event reporting

The Honeywell Midas gas detector detects low ppb levels of ultrasensitive toxic gases. It is compact in size and easy to install, which makes it ideal for complex process environments and applications with limited installation space. It features bright LED lights and an intuitive, interactive interface that gives you instant alerts to gas readings or alarm levels.

The Midas is suitable for applications like semiconductor processing, light industrial manufacturing, university laboratories, aerospace, wastewater and more.

Honeywell Plug-N-Play Smart Sensors with Reflex® Technology

Honeywell pre-calibrated sensor modules are ready to use, right out of the box. These self-diagnosing sensors can be replaced in hazardous areas — with power applied — without the need for special tools. Imagine how much maintenance and downtime you'll save when you don't have to clear the area and stop production just to change a sensor!

Only Honeywell's patented Reflex technology adds an extra degree of precision and diligence to sensor monitoring to make doubly sure that people are kept safe. Reflex bounces electrical signals into the Midas electrochemical sensor at regular intervals, a form of electronic bump testing and continuous monitoring of sensor cell response.

Model Selection Guide

Description	Range	Catalog No.	Price
Midas transmitter and cartridge combined kits¹			
Arsine (AsH ₃)	18-200 ppb	MIDAS-K-ASH	\$1380.00
Germane (GeH ₄)	70-800 ppb		
Carbon Monoxide (CO)	9-100 ppm	MIDAS-K-COX	1380.00
Hydrogen (H ₂), Methane (CH ₄)	6.5-100% LEL	MIDAS-K-LEL	1380.00
Nitric Oxide (NO)	9-100 ppm	MIDAS-K-NOX	1380.00
Oxygen (O ₂), 3 year warranty	0.2-25% v/v	MIDAS-K-O2S	1484.00
Ozone (O ₃)	0.036-0.4 ppm	MIDAS-K-O3X	1380.00
Accessories and Spare Parts			
Inlet Tubing, FEP Teflon® 100' 1/4 x 1/8		1991-0136	401.00
Exhaust Tubing, Polypropylene 100' 1/4" OD		1991-0137	129.00
Sample Inlet Teflon Tubing FEP 1/4" OD x 1/8" ID (price per foot)		102599	17.00
Exhaust Polypropylene 1/4" OD x 3/16" ID (price per foot)		100440	2.00
Replacement MIDAS Internal Sample Pump and Mounting Bracket		MIDAS-A-007	86.00
Replacement Internal Air Filter for MIDAS Universal Gas Detector		MIDAS-A-009	45.00
End of Line Particulate Filter for Use as End of Line Filter for Non-Corrosive Gases		780248	17.00
End of Line Reusable Particulate Filter for Corrosive Gases		1830-0055	124.00
End of Line Disposable Particulate Filter for Corrosive Gases		1991-0147	32.00

¹ Kit includes: Midas transmitter and sensor cartridge. This is the recommended kit for a new installation. Cartridge and transmitter are packaged separately for easy of installation.

Detectable Gas Cartridges

Gas Name	Range
Ammonia (NH ₃)	9-100 ppm
Arsine (AsH ₃)	18-200 ppb
Boron Trichloride (BCl ₃)	0.72-8 ppm
Boron Trifluoride (BF ₃)	0.72-8 ppm
Boron Trifluoride (BF ₃) (Low Level)	0.18-2 ppm
Bromine (Br ₂)	0.036-0.4 ppm
Carbon Dioxide (CO ₂)	0.15-2.0%
Carbon Monoxide (CO)	9-100 ppm
Chlorine (Cl ₂)	0.18-2 ppm
Chlorine Dioxide (ClO ₂)	0.036-0.4 ppm
Diborane (B ₂ H ₆)	36-400 ppb
Dichlorosilane (H ₂ Cl ₂ Si ₂)	0.72-8 ppm
Difluoromethane (CH ₂ F ₂)**	16-240 ppm
Disilane (Si ₂ H ₆)	1.8-20 ppm
Fluorine (F ₂)	0.36-4 ppm
Germane (GeH ₄)	70-800 ppb
Hexafluorobutadiene (C ₄ F ₆)**	3-40 ppm
Hydrogen (%LEL) (H ₂)	6.5-100% LEL
Hydrogen (ppm) (H ₂)	90-1000 ppm
Hydrogen Bromide (HBr)	0.72-8 ppm
Hydrogen Chloride (HCl)	0.72-8 ppm
Hydrogen Cyanide (HCN)	1.8-20 ppm
Hydrogen Fluoride (HF)	1.05-12 ppm
Hydrogen Fluoride (HFL) (Low Level)	0.18-2 ppm
Hydrogen Sulfide (HS ₂)	3.6-40 ppm
Methane (%LEL) (CH ₄)	6.5-100% LEL
Methyl Fluoride (CH ₃ F)**	8-120 ppm
Nitric Oxide (NO)	9-100 ppm
Nitrogen Dioxide (NO ₂)	1.05-12 ppm
Nitrogen Trifluoride (NF ₃)**	3.6-40 ppm
Octofluorocyclopentene (C ₅ F ₈)**	3-40 ppm
Oxygen (O ₂)	0.2-25% v/v
Ozone (O ₃)	0.065-0.7 ppm
Ozone (O ₃) (Low Level)	0.036-0.4 ppm
Phosphine (PH ₃)	110-1200 ppb
Silane (SiH ₄)	1.8-20 ppm
Silane (SiH ₄) (Low Level)	0.18-2 ppm
Sulfur Dioxide (SO ₂)	0.7-8 ppm
Tetra Ethyl Ortho Silicate (TEOS)	3.6-40 ppm
Tungsten Hexafluoride (WF ₆)	1.05-12 ppm
Tungsten Hexafluoride (WF ₆) (Low Level)	0.18-2 ppm

** Gases require Midas Porolyzer



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Clockwise from left: Main unit, plug-and-play sensor cartridge, and remote sensor.

Great for commercial applications: parking garages, loading docks, transport terminals, maintenance garages, ambulance bays, boiler rooms, battery charging areas and hydrogen tanks, commercial kitchens, indoor stadiums

E3Point Toxic and Combustible Gas Monitor

Features

- Comes in stand-alone, stand-alone with remote sensor (dual gas) or network versions
- Connects to analog or digital systems; Compatible with building automation systems, including BACnet, Modbus, or Lonworks
- Advanced electrochemical cells for toxic gases and catalytic bead for combustible gases; Factory-calibrated plug-and-play sensors and replacement cartridges
- Works through network to improve fault diagnostics and collect data on gas concentration levels, sensor conditions, and more
- Couple with Honeywell 301C controller to log data and daisy-chain up to 96 E3Point units

Honeywell's E3Point is a toxic/combustible gas monitor that makes commercial operations run more intelligently, to protect people, property, and your bottom line. It goes beyond basic protection to increase energy management, efficiency, and economic value.

E3Point uses demand control ventilation, through relays, BAS, or a controller, to increase energy savings, extend fan life, and align with green building Best Practices. In its network configuration, E3Point can optimize HVAC, fire/smoke, surveillance, and other building systems performance. E3Point on-board relays can be used to activate ventilation fan or strobe light visible alarms.

E3Point network version supports Modbus protocol, so multiple detectors can be daisy-chained to monitor up to 96 points on a serial bus. The BACnet system can activate alarms, strobes, and horns that are tied to building HVAC controls.

Smart sensors are pre-calibrated, and auto-configure at setup. They operate continuously on Honeywell's patented Reflex[®] technology, which continuously monitors sensor cell condition and alerts you to a fault status. Reflex bounces electrical signals into the E3Point electrochemical sensor cell at regular intervals. It's a form of electronic bump testing for ongoing monitoring of cell response.

Detectable Gases

Gas Type	Range	Resolution	Alarm A	Alarm B	Alarm C
CO	0–250 ppm	1 ppm	25 ppm	200 ppm	225 ppm
H ₂ S	0–50 ppm	0.1 ppm	10 ppm	15 ppm	20 ppm
NO ₂	0–16 ppm	0.1 ppm	0.7 ppm	2 ppm	9 ppm
O ₂	0–25% vol	0.1% vol	19.5%	22%	22.5%
H ₂ , Methane, Propane	0–100% LEL	0.5% LEL	25% LEL	50% LEL	90% LEL

Condensed Specifications

Power Requirements: 24 VAC nominal, 50/60 Hz, 0.4A; 24 VDC nominal (20–38VDC); With remote sensor: 7W max.; *AC input option:* 120 VAC nominal $\pm 10\%$ with on-board transformer

Output: Two DPDT relays, 5A at 250 VAC, 5A @ 30 VDC; 4–20 mA output for communications

Operating Temperature: -40° to 122°F; *CO monitoring:* -4° to 122°F

Display: Two-line, 8-character backlit LCD with visual indicators; Green LED for power, two amber LEDs for alarm/fault

Audible Alarm: 85 dBA at 10 feet

Enclosure: Polycarbonate

Approvals: CSA, UL

Model Selection Guide

E3Point monitors no longer come pre-configured with CO sensors. All sensors must be ordered as separate line items.

Description		Catalog Number	Price
Single Gas E3Point Toxic/Combustible Gas Monitor			
Surface Mount, Analog Output, 24 VAC/VDC Power		E3SA	\$360.00
Surface Mount, Analog Output, 120 VAC Power		E3SAH	428.00
Duct Mount, Analog Output, 24 VAC/VDC Power		E3DA	605.00
Network-Capable Single Gas E3Point Toxic/Combustible Gas Monitor			
Surface Mount, Modbus Output, 24 VAC/VDC Power		E3SM*	428.00
Duct Mount, Modbus Output, 24 VAC/VDC Power		E3DM*	605.50
Remote Sensors and Replacement Sensor Cartridges			
Remote Sensors	Carbon Monoxide	E3SRMCO	305.50
	Nitrogen Dioxide	E3SRMNO2	305.00
	Hydrogen Sulfide	E3SRMH2S	305.00
	Hydrogen	E3SRMH2	305.50
	Oxygen	E3SRMO2	305.50
	Methane	E3SRMM	305.50
Replacement Sensor Cartridges	Propane	E3SRMP	305.50
	Carbon Monoxide	E3SCO	152.00
	Nitrogen Dioxide	E3NO2	263.00
	Hydrogen Sulfide	E3H2S	256.50
	Hydrogen	E3H2	263.00
	Oxygen	E3O2	263.00
	Methane	E3M	263.00
	Propane	E3P	263.00

* Can also be configured for BACnet.

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**ASHRAE-compliant
refrigerant monitor**



Vulcain 301C three-channel controller



301R output relay module

Vulcain 301C Three-Zone Digital Controller

Features

- Zero maintenance, automatic quick self-test at warmup
- Continuous alphanumeric display
- Interchangeable transmitters to detect different gases
- Manages up to 768 events with programmable latching alarms
- Allows for up to 126 zoning groups to help save energy and extend fan and relay life
- Modbus compatible, BACnet/IP also available
- Expands to handle up to 96 transmitters or relay modules
- Programmable time delays; Integrated time clock enables scheduling of system operations
- Full array of visual indicators and integrated 65 dBA alarm levels
- Programmable relays can be set for fail-safe operation

Honeywell's Vulcain 301C continuously monitors and controls toxic gases, combustible gases, and oxygen hazards. Using an addressable RS-485 Modbus communication protocol, the 301C uses daisy chain wiring, so it only takes two pairs of wires to connect up to 96 transmitters on the three input channels. This simplifies installation and significantly reduces operational and maintenance costs.

The Vulcain 301C controller offers unique zoning capabilities that permit the averaging and comparison of multiple sensor readings. Zoning can reduce operational costs by ensuring that localized brief fluctuations registered at a single transmitter do not prematurely or accidentally activate relays. This reduces runtime on fans, yielding savings in energy consumption and wear-and-tear.

The 301C has the capacity to manage input from three Modbus channels for up to 96 transmitters that can be associated with 126 zones. Transmitters can belong to an unlimited number of zones, providing maximum operational and control flexibility.

301EM Refrigerant Gas Monitoring System



- Meets ASHRAE 15, B-52 and International Mechanical Code requirements
- For optimized gas detection in chiller rooms
- Monitors up to four remote sensors at once
- RS-485 Modbus communications standard
- Three 24 VDC alarm outputs and four 4–20 mA outputs
- Four fully programmable relays, three alarm levels, with built-in visual indicators and audible alarm

ASHRAE and B-52 security standards were established to minimize risk, and protect the safety of mechanical room personnel and the environment at large. The 301EM controller has been designed to meet and exceed these standards. It can be configured to offer manual fan activation plus automatic activation for fan, horn, and strobe.

Latching relay for manual alarm recognition, silence key for manual horn deactivation, built-in 24 VDC outputs for horn operation, and two break-glass switch accessories for manual alarm activation ensure optimal performance.

Toxic, oxygen, and combustible sensors are available, in addition to the refrigerant sensors shown. Call Lesman.

Model Selection Guide

Description	Catalog No.	Price
301C Three-Zone Controller for Gas Detection, Plastic Enclosure		
301C, RS-485 Modbus Output	301-C	\$1286.00
301C, RS-485 Modbus Output, Datalogging	301-C-DLC	1708.00
Accessories		
Relay Output Module, 8 Relays,	301-R8	419.00
Alarm Annunciator Panel	301-AP	735.00
301-EM ASHRAE-Compliant Controller for Remote Refrigerant Sensing: Three 24 VDC, Four Relay, Four 4–20 mA		
Controller	301-EM-US3	1414.00
Controller with Strobe Light and Horn	301-EM-RFSA-US3	1806.00
301EM Sensors	R11 Refrigerant Gas Sensor	S301-IRF-R11 1492.00
	R22 Refrigerant Gas Sensor	S301-IRF-R22 1492.00
	R123 Refrigerant Gas Sensor	S301-IRF-R123 1492.00
	R134A Refrigerant Gas Sensor	S301-IRF-R134A 1492.00
	R404A Refrigerant Gas Sensor	S301-IRF-R404A 1492.00
	R407C Refrigerant Gas Sensor	S301-IRF-R407C 1492.00
	R410A Refrigerant Gas Sensor	S301-IRF-R410A 1492.00

**Get full specifications and learn more about
Honeywell Vulcain301C Digital Controller at Lesman.com**

Touchpoint Plus Multichannel Gas Detection Controller

Features

- Choice of 8 (standard) or 16 (with expansion unit) channels of gas detection
- Accepts 2- or 3-wire mA or mV inputs
- Intuitive 7" color LCD touchscreen with traffic-light-style status
- Audible alarm (≥ 70 dB)
- Individual channel status indicator
- Powered alarm outputs standard; Modbus TCP/IP or Modbus RTU outputs optional

Honeywell Analytics' Touchpoint Plus is an easily configurable, wall mounted control system that supports up to sixteen channels of gas detection. Through its unique user interface, you can easily take control of your gas detection system and make critical decisions quickly. Real-time data is provided in an easy-to-navigate menu system, and historical data can be downloaded to monitor developing threats.

The Touchpoint Plus case is dustproof and waterproof to withstand tough operating environments. It provides a reliable safety solution for small-scale gas detection systems across a range of applications and industries. Touchpoint Plus is designed to work with Honeywell's gas detectors and drive actuators.



NEW

Touchpoint Pro Gas, Safety, and Logic Control System

Features

- Wall mount, 19" 5U rack, and floor standing cabinets
- Flexible system architecture to meet specific, growing, or changing site needs
- Up to 64 gas detection input channels and 128 output channels
- Touchscreen local user interface
- Web server option lets you view the system from a centralized control room and respond quickly to alarms
- PC configuration tool lets authorized administrators and service techs view, configure, or edit channel settings from anywhere on the network

Honeywell Analytics Touchpoint Pro is a complete integrated gas and logic safety control system for small to mid-sized operations. Its platform can adapt to any site requirement offering total flexibility, intuitive use and reduced costs. Touchpoint Pro's flexible architecture enables the exact system to be built as a centralized system, distributed system or a combination — all with the same components. It is the only control system in its class to offer a web server interface, so you can remotely monitor gas status, data, and event history.

The system's central controller features an intuitive touch-screen interface for easy setup and complete at-a-glance visibility of status. It also includes a preloaded sensor catalog with a complete listing of Honeywell gas detectors, each with recommended settings for simple setup. Touchpoint Pro can support up to 64 inputs from toxic and flammable gas detectors as well as flame detectors and manual call points. Digital and relay outputs can be created using Touchpoint Pro's DIN-rail mountable plug in input/output modules.



Call us at 800-953-7626 for help building your gas detection control system!

Touchpoint Pro Benefits

- 4 block simplicity reduces design time
- Distributed I/O reduces cable requirement; Clip-on I/O and less cable reduces installation time
- Easy to expand by adding extra modules
- Lower cost over traditional card systems
- Preloaded sensor catalog reduces commissioning time
- Common modular design reduces training time
- One-man walk test using web-enabled service

Upgrade or service your Touchpoint Pro system without powering the system down: New modules plug right in. Touchpoint Pro's self healing network ensures a faulty module will not stop the system monitoring a site, securing safety and compliance.

FS24X Multi-Spectrum QuadBand Triple IR Flame Detector



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Features

- Detects hydrocarbon and non-hydrocarbon fuel fires in all environmental conditions
- Patented WideBand IR™ technology, Electronic Frequency Analysis™
- Field of view: 90° full 100% cone of vision ±45° from ON axis or 110° full 100% cone of vision ±55° from ON axis
- Visible 400–700 nanometer spectral sensitivity (0.07 to 5.0 microns)
- Blue, red, and yellow LEDs alert you to power, alarm, and fault conditions
- Real-time clock for accurate timing of events
- RS-485 Modbus communication
- 0–20 mA stepped analog output (user-selectable source or sink)
- SPST fault relay and SPDT fire alarm verification and auxiliary relays
- FirePic™ pre-fire event data storage plus event logs with time and data stamp
- FM Class I, Div 1 and 2, Groups B–D; Class II, Div 1 and 2, Groups E–G, Class III approval
- ATEX II 2 G D; Ex d IIC approval
- Meets SIL 2 requirement (FMEDA available)

WideBand IR infrared technology with high-speed solid state Quantum sensors detects hydrocarbon and non-hydrocarbon fires in all weather conditions. If the detector's signal is blocked by window glass, the patented WideBand IR sensors will still alarm to the fire, but at a reduced sensitivity and slower response time.

Dual microprocessors provide fail-safe operation with fast, reliable performance. The master microprocessor performs high speed digital sampling and signal processing calculations. The slave processor handles sensor data, performs communications, self-diagnostics, and provides interface versatility, with additional memory for storing event log and FirePic data.

The Fire Sentry FS24X has a detection range greater than 200 feet for the detection of a one-square-foot Heptane reference fire, and has a cone of vision far greater in volumetric coverage than any other multi-spectrum IR Detector. This means fewer detectors can be used to keep your plant safe.

Model Selection Guide

Description	Field of View	Temperature Range	Catalog Number	Price
Copper-Free Aluminum Housing	110°	-40° to 85° C	FS24X-211-21-1	\$3417.00
	90°	-60° to 85° C	FS24X-911-21-1	2610.00
316 Stainless Steel Housing	110°	-40° to 85° C	FS24X-211-22-1	3687.00
	90°	-60° to 85° C	FS24X-911-22-1	2958.00

Accessories

Stainless Steel Swivel-Mounting Assembly	SM4	202.00
Universal Charger for Test Lamps/Interface Kits	PSU-12	136.00
IR Test Lamp, Explosion-Proof Version	TL-2055	2870.00
IR Test Lamp, Non-Explosion-Proof Version	TL-1055	1237.00
Sun Shield	SH-001	140.00
Field-of-View Restrictor	FVR-01	110.00

FS20X Multi-Spectrum UV/Dual IR/VIS Fire and Flame Detector

- Detection range >200 feet to 1 sq. ft. heptane fire; Selectable sensitivities
- WideBand IR™ Infrared plus ultraviolet
- FirePic™: Up to 6 pre-fire event data storage plus event log with date and time stamps
- Built-in RS-485 Modbus communication, 4-20 mA isolated analog output, sink or source
- Alarm, fault and fire verification relays
- High RFI and EMI immunity
- FM Approved Class I, Div 1, Groups A-D; Class II, Div 1, Groups E-G; Class III; Also available with ATEX/IECEx Class I, Zone 1
- PC software and Interface Module (FSIM) for fault diagnostics, real-time graphs (RTGs), and downloading of FirePics™ and event log
- Two 3/4" NPT entries



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Fire Sentry FS20X detector uses advanced patented algorithms for signal processing and fire and flame analysis, and is designed to alarm to all types of fires in all industrial environmental conditions. If the detector's UV signal is degraded by heavy smoke or a contaminated lens, the patented WideBand IR, Near Band IR and Visible sensors will still alarm to fire, but at a reduced sensitivity and slower response time.

The Fire Sentry FS20X has a range in excess of 200 feet for the detection of a one-square-foot Heptane reference fire, with a cone of vision greater in volumetric coverage than most UV/IR detectors, so you can use fewer detectors to cover a broader area.

Model Selection Guide

Description	Field of View	Temperature Range	Catalog Number	Price
Aluminum Housing	90°	-40° to 85° C	FS20X-211-21-2	\$2624.00
Stainless Steel Housing	90°	-40° to 85° C	FS20X-211-22-2	2949.00

Accessories

Stainless Steel Swivel-Mounting Assembly	SM4	202.00
Universal Charger for Test Lamps/Interface Kits	PSU-12	136.00
IR Test Lamp, Explosion-Proof Version	TL-2055	2870.00
IR Test Lamp, Non-Explosion-Proof Version	TL-1055	1237.00
Field-of-View Restrictor	FVR-01	110.00

Need help building a flame detector system?
Call Lesman and talk to a factory-trained specialist.



FSL100 Series UV, UV/IR, and IR3 Flame Detectors

- Ultraviolet (UV), Ultraviolet/Infrared (UV/IR), and Triple Infrared (IR3) flame detectors
- Detects both hydrocarbon and non-hydrocarbon fires
- For tough indoor and outdoor environments, and potentially explosive atmospheres
- Wide angle and fast response speed
- Comprehensive digital self test; Long range test lamp available
- FM Class1, 2, and 3, Div 2

Specifications

Range: UV & UV/IR: 80ft (30m); IR3: 100ft (30m)

Cone of vision: 90° minimum (horizontal and vertical)

Alarm response time: 8 to 30 seconds

Enclosure: GRP; Red or White

Output: 4 to 20mA and Relay

Compare Flame Detectors

FSL100-UV	FSL100-UV/IR	FSL100-IR3
For indoor applications; Good for materials burning with low temperatures, ex. Sulfur	Analyzes flame flicker-frequency for improved false alarm rejection	Reads through window contamination and smoky fires
For fires from light and heavy hydrocarbons, and hydrogen	Hydrocarbon and non-hydrocarbon fire detection	Ideal for liquid hydrocarbon and dirty fires, and fires that emit large amounts of smoke
Resistance against direct and reflected sunlight, and artificial light (ex. fluorescent tubes)	Resistance against direct and reflected sunlight, artificial light, arcs and electric discharges, and radiation from electric welding that takes place at a distance of 10 feet or more from the flame detector	

Model Selection Guide

Description	Red Enclosure Catalog Number	White Enclosure Catalog Number	Price
<i>FSL100 Series Flame Detector, FM 3611 Class 1, 2 & 3 Div2; FM3260 approval</i>			
UV flame detector	FSL100-UV	FSL100-UV-W	\$1621.00
UV/IR flame detector	FSL100-UVIR	FSL100-UVIR-W	1722.00
IR3 flame detector	FSL100-IR3	FSL100-IR3-W	1823.00
<i>Accessories</i>			
FSL100 swivel mount		FSL100-SM21	152.00
Non EX FSL100 test lamp, with universal charger and carrying case;		FSL100-TL	1114.00
Intrinsically safe (Pending*) FSL100 test lamp, with carrying case;		FSL100-TLX	1621.00
12 Vdc battery for FSL-TL test lamp		FSL100-TLBT	297.00
H3 light bulb for FSL-TL test lamp		FSL100-TLBU	156.00
Universal charger kit for FSL-TL test lamp		FSL100-TLCH	192.00

Note: FSL100 flame detectors should be installed with Swivel Mount (FSL100-SM21) for proper positioning and optimized field-of-view. Purchase test lamp (FSL100-TL) to conduct performance checks every 6 months.

Honeywell ControlEdge™ HC900 Process and Safety Controller

Perform loop, logic, and safety control functions from one single flexible system with the latest release of Honeywell's HC900 process and safety system. One configuration software package manages the system, and you won't have to work with Ethernet bridge cards or peripherals to get your controller onto your LAN.

- Common set of hardware/software tools for both process and safety applications
- Reduced configuration time with process-specific function blocks: setpoint programming, carbon potential, dewpoint control, sequencer, and I/O validation safety
- PID Control with advanced Accutune III auto-tuning and fuzzy overshoot suppression algorithm
- Flexible and scalable, expandable to 12 racks, more than 4,000 digital IO points, and 15,000 function blocks in a single system
- SIL Universal IO with each channel soft-configurable as AI, AO, DI, DO with line monitoring (TUV certified SIL2)
- Easy integration with HMI, SCADA, OPC-UA or other third-party solutions
- New black plastic cases with G3 conformal coating for harsh industrial environments
- Color touchscreen operator interface with the Honeywell 900 Control Station for controller integrated database and pre-built displays



Learn more about the HC900 process and safety controller at bit.ly/hw-hc900

SIEMENS



APPLICATION TOOLKIT

Extractive thermal conductivity analyzer for hydrogen gas
Output: 0/2/4–20 mA plus Profibus, RS-485, and Ethernet

CALOMAT 6, 19" rack mount

Prices start at \$6861.00

CALOMAT 6, field mount analyzer

Prices start at \$10270.00

Please issue all orders to Siemens Industry Inc, c/o Lesman.

CALOMAT 6 Analyzer for Non-Corrosive Gas Mixtures

Features

- Stainless steel tubed and gas-tight sample cell, suitable for H₂ and HE plus flammable gases without purging
- Four measuring ranges, freely programmable and linearized
- Fast response time — T₉₀ < 5 seconds
- Smallest possible measuring spans to 1% Hydrogen
- Galvanically isolated measured value output of 0, 2, or 4-20 mA
- Auto-ranging and remote ranging
- Standard with eight digital I/O
- Interference correction for up to four components
- RS-485 interface standard with optional Profibus DP/PA and Ethernet communications

CALOMAT 6 makes it possible for the measurements of hydrogen and noble gases in non-corrosive gas mixtures. The device is available in 19" rack-mount housing or in the robust field case for the installation in rough atmospheres. An additional supervision unit makes CALOMAT 6 suitable for installation in Ex-Zone 1.

The CALOMAT's measuring principle is based on the measurement of thermal conductivity, a physical characteristic that differs between gases. The signal is determined by a bridge that measures electrical resistance and the difference between the measuring gas channel and the reference cell.

Specifications	
Gas	H ₂ or He in inert mixtures
Range	0–100% vol
Detection limit	1% range
Gas temp.	50°C max.

SIEMENS



APPLICATION TOOLKIT

Extractive thermal conductivity analyzer for corrosive gases
Output: 0/2/4–20 mA plus Profibus, RS-485, and Ethernet

CALOMAT 62E, 19" rack mount

Prices start at \$9398.00

CALOMAT 62F, field mount analyzer

Prices start at \$11977.00

Please issue all orders to Siemens Industry Inc, c/o Lesman.

CALOMAT 62 Analyzer for Corrosive Gas Mixtures

Features

- Specially designed for applications with corrosive gases
- Integrated correction of cross-interferences, no external calculation required
- For chlorine-alkaline electrolysis, steel mills, liquefied natural gas, ammonia, and fertilizer plants
- Electronics and analyzer unit: Gas-tight separation, purgeable, IP65 long-life service, even in harsh environments
- Four freely-programmable linear measuring ranges with suppressed zero
- Smallest spans down to 1% H₂ (with suppressed zero: 99–100% H₂)
- Electrically isolated measured-value output 0/2/4–20 mA

CALOMAT 62 measures the concentration of gas components — H₂, H₂, Cl₂, HCl, or HN₃ in binary or quasi-binary gas blends. It is specifically designed for use in applications with corrosive gases.

Both CALOMAT analyzers are available in a 19" rack-mount housing or a purgeable rugged IP65 field housing with gas-proofed separation of the electronics and analysis sections. For fast, simple maintenance, the CALOMAT can communicate over TCP/IP Ethernet with Siemens' SIPROM GA software. Profibus DP and PA interfaces offer connection to plant automation systems.

Specifications	
Gas	H ₂ , NH ₃ or CO ₂ in N ₂ ; SO ₂ in air, or CO ₂ in H ₂
Range	0–100% vol
Detection limit	1% range
Gas temp.	60°C max.

Get full specifications and learn more about Siemens analyzers at bit.ly/gas-analyzers



Siemens Analyzers Provide the Accuracy Needed for Critical Engine Emissions Testing

Minimizing turbine emissions requires controlling and understanding the amount of CO, CO₂, and H₂O in the samples. The unique optical coupler component in the ULTRAMAT 6 (see next page for product details) minimizes the effects of cross interference from background gases, which makes it ideal for this custom measurement system.

Read the full case study at bit.ly/ultrammat6



ULTRAMAT 6 NDIR Two-Beam Alternating Light Analyzer for Hydrocarbons



SIEMENS

APPLICATION TOOLKIT

NDIR two-beam analyzer for hydrocarbon gases

Output: 0/2/4–20 mA plus Profibus, RS-485, and Ethernet

ULTRAMAT 6, field mount

One channel, one IR

Prices start at \$14581.00

One channel, two IR

Prices start at \$14581.00

ULTRAMAT 6, 19" rack mount

One channel, one IR

Prices start at \$13345.00

Two channel, one IR each

Prices start at \$19100.00

One channel, two IR

Prices start at \$13423.00

Please issue all orders to Siemens Industry Inc, c/o Lesman

Features

- Highly selective with double-layer detector and optical coupler for reliable measurement even in complex gas mixtures
- Corrosion-resistant materials in gas path
- For boiler control in combustion plants, emissions measurement in incineration plants, process gas concentrations in chemical applications, environmental protection, MAC-value workplace monitoring and warning equipment
- Ex versions to analyzer flammable and non-flammable gases or vapors in hazardous areas
- Supports one analog output and six relay outputs, two analog inputs and six binary inputs
- RS-485 interface standard with optional Profibus DP/PA

ULTRAMAT 6 single-channel or dual-channel gas analyzers operate according to the NDIR two-beam alternating light principle, and measure highly selective gases with absorption bands in the infrared wavelength range from 2 to 9µm. Single-channel analyzers measure up to two gas components. Dual-channel analyzers measure up to four gases simultaneously.

The gas proof separation of the electronic and physical components of the field-mount analyzer with IP65 protection and purging gas connection guarantees a long service life, even in severe ambient conditions.

Get full specifications and learn more about Siemens analyzers at bit.ly/gas-analyzers

Specifications	
Gas	IR wavelength 2-9 µm: CO, CO ₂ , NO, SO ₂ , NH ₃ , H ₂ O, CH ₄ , hydrocarbons
Range	Depends on gas
Detection limit	Gas specific from 0.05 ppm
Gas temp.	50°C max.



ULTRAMAT 23 Low-Cost NDIR Analyzer for Hydrocarbons and Oxygen



SIEMENS

APPLICATION TOOLKIT

NDIR two-beam analyzer for hydrocarbon gases

Output: 0/2/4–20 mA plus Profibus, RS-485, and Ethernet

ULTRAMAT 23, 19" rack mount

One IR gas plus O₂

Prices start at \$7634.00

Two IR gases plus O₂

Prices start at \$11046.00

Three IR gases plus O₂

Prices start at \$13784.00

Please issue all orders to Siemens Industry Inc, c/o Lesman.

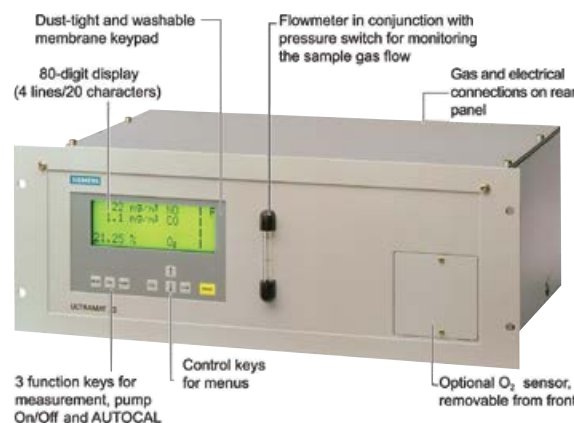
Features

- Versions for one, two, or three infrared-sensitive gases plus O₂
- Infrared sensors plus electrochemical measuring cell
- Highly selective by multiple layer detectors
- AUTOCAL in process with ambient air — high efficiency, so no calibration gas or accessories are required
- Supports one analog output and six relay outputs, two analog inputs and six binary inputs
- RS-485 interface standard with optional Profibus DP/PA

ULTRAMAT 23's multi-component design with NDIR sensors for IR-active gases and an electrochemical cell for oxygen measurement make it an economical and space-saving device for accurate gas measurement. The integrated automatic calibration function using ambient air reduces the need to check with calibration gases to just once per year.

Multi-layer detectors guarantee high selectivity and reduced water vapor interference. The measuring cells used are robust and resistant, and can be cleaned in the event of pollution. ULTRAMAT 23 also supports two freely configurable undershoot and overshoot limit values per measured gas.

Specifications	
Gas	IR wavelength 2-9 µm: CO, CO ₂ , NO, SO ₂ , CH ₄ , plus O ₂ (via electrochemical cell)
Range	Depends on gas, analyzer model
Gas temp.	50°C max.



OXYMAT 61 Paramagnetic Analyzer for Oxygen in Standard Applications



SIEMENS

APPLICATION TOOLKIT

Paramagnetic alternating pressure analyzer for oxygen gas
Output: 0/2/4–20 mA plus Profibus, RS-485, and Ethernet

OXYMAT 61, 19" rack mount
Prices start at \$6033.00

Please issue all orders to Siemens Industry Inc, c/o Lesman.

Features

- Single channel oxygen analyzer in 19" rack mount enclosure
- Fast response — T90 <3 seconds
- Versions with internal pump for reference gas air or external reference gas supply
- Stainless steel sample cell and Viton tubing
- Autocal and autoranging
- Standard with eight digital I/O
- RS-485 interface standard with optional Profibus DP/PA and Ethernet communications

OXYMAT 61 is a low-cost oxygen analyzer for standard applications. It requires ambient air — supplied by an integral pump or compressed bottled gas — as its reference gas.

Get full specifications and learn more about Siemens analyzers at bit.ly/gas-analyzers

Specifications	
Gas	O ₂
Range	0–100% vol
Detection limit	2% range (200 ppm)
Gas temp.	50°C max.

OXYMAT 6 Paramagnetic Analyzer for Oxygen in Corrosive Gases



SIEMENS

APPLICATION TOOLKIT

Paramagnetic alternating pressure analyzer for oxygen gas
Output: 0/2/4–20 mA plus Profibus, RS-485, and Ethernet

OXYMAT 6, 19" rack mount
Prices start at \$9445.00

OXYMAT 6, field mount analyzer
Prices start at \$12470.00

Please issue all orders to Siemens Industry Inc, c/o Lesman.

Features

- Single channel oxygen analyzer
- Paramagnetic alternating pressure principle for small measuring ranges (0–0.5% or 99.5–100% oxygen) with absolute linearity
- Detector element has no contact with sample gas — provides long service life under harsh conditions
- Available in 19" rack mount or field mount unit (left) for ATEX-approved Zone 1 and Zone 2 locations
- Standard with eight digital I/O
- For boiler control in firing systems, applications in safety-relevant, areas, warning equipment, environmental protection, inert gas monitoring as certified gas warning equipment, or to analyze flammable and non-flammable gases or vapors in hazardous areas
- RS-485 interface standard with optional Profibus DP/PA and Ethernet communications

Most frequently used for demanding applications, the OXYMAT 6 must meet high standards with regards to reliability and measuring quality.

OXYMAT 6 measures oxygen using the paramagnetic alternating pressure method, which guarantees perfect linearity, and allows parameterization of small measuring ranges of 0–0.5% (detection limit 50 ppm) up to 0–100% in a single device. The sensor inside the detector does not come into contact with the sample gas, making the OXYMAT suitable for measuring corrosive gases. Corrosive-resistant materials are used in the gas path.

Specifications	
Gas	O ₂
Range	0–100% vol
Detection limit	0.5% range
Gas temp.	50°C max.

OXYMAT 6 Ensures Plant Safety in Ethylene Production

Using too much oxygen in ethylene production can result in a catastrophic ignition. The danger of a gas explosion arises as the oxygen concentration comes closer to the Limiting Oxygen Value (LOV). Analyzers with a lower standard deviation will allow a higher oxygen concentration and higher process yield than analyzers with a higher standard deviation. OXYMAT 6 (above) features reliability and stability with a very low standard deviation making it a preferred analyzer for this application.

Read the full case study at bit.ly/oxyamat6



OXYMAT 64 Zirconium Dioxide Probe Analyzer for Trace Oxygen Detection



SIEMENS

APPLICATION TOOLKIT

Zirconium dioxide probe analyzer for trace oxygen gas

Output: 0/2/4–20 mA plus Profibus, RS-485, and Ethernet

OXYMAT 64, 19" rack mount
Prices start at \$9012.00

Please issue all orders to Siemens Industry Inc, c/o Lesman.

Features

- Single channel oxygen analyzer in 19" rack mount enclosure
- For ppm levels of oxygen concentrations in pure gas applications
- Versions with internal pump for reference gas air or external reference gas supply
- Supports one analog output and six relay outputs, two analog inputs and six binary inputs
- RS-485 interface standard with optional Profibus DP/PA

OXYMAT 64 can control the measurement of oxygen concentration in the smallest tracks, even down to the smallest measuring area of 0–10 ppm. OXYMAT 64 is ideal for production of technical gases, welding, air separation plants, metal production, hardening shops, chemical plants, and food and beverage applications.

OXYMAT 64 works with ZrO₂ sensors, which measures gas with steady flow through a 650°C heated, pipe-shaped sensor. While the sample gas flows through the sensor, the outside of the sensor is exposed to ambient air, which acts as a reference electrode. Depending on the application, both catalytic active and inactive ZrO₂ sensors are available.

Specifications

Gas	O ₂
Range	0–10 to 0–99999 vpm
Detection limit	1% span, <0.1 vpm within 0–10 vpm range
Gas temp.	50°C max.

ULTRAMAT/OXYMAT 6 Combination NDIR and Paramagnetic Analyzer



SIEMENS

APPLICATION TOOLKIT

Combination analyzer for hydrocarbons and oxygen

Output: 0/2/4–20 mA plus Profibus, RS-485, and Ethernet

ULTRAMAT/OXYMAT6, 19" rack mount, Two channels: 1xO₂, 1xIR
Prices start at \$18648.00

ULTRAMAT/OXYMAT6, 19" rack mount, Two channels: 1xO₂, 2xIR
Prices start at \$18922.00

Please issue all orders to Siemens Industry Inc, c/o Lesman.

Features

- Oxygen and infrared-active gas measurement in a single 19" rack mount enclosure
- Corrosion-resistant materials in the gas path for measuring highly corrosive sample gases
- Cleanable sample cells for cost savings
- ULTRAMAT channel supports low detection limits and reliable measurement in complex gas mixtures
- OXYMAT channel suitable for purity monitoring and air separation
- Supports one analog output and six relay outputs, two analog inputs and six binary inputs
- RS-485 interface standard with optional Profibus DP/PA

The ULTRAMAT/OXYMAT 6 analyzer combines the features of the ULTRAMAT 6 NDIR sensor analyzer and the OXYMAT 6 paramagnetic analyzer, for two infrared channels and one oxygen measurement channel in a single housing and minimal amount of space.

The IR physics of the ULTRAMAT use the NDIR method to continuously and selectively measure one or more infrared-active gases, with absorption bands in the infrared wave range from 2 to 9 micrometers. The use of optical couplers and optical filters increase the selectivity, so the analyzer can be used for measurements even in complex gas mixtures, at low concentrations and low detection limits.

Specifications

Gas	O ₂ , CO, CO ₂ , NO, SO ₂ , NH ₃ , H ₂ O, CH ₄ , hydrocarbons
Range	0–100% volume
Detection limit	0–5 ppm, 0–100 ppm, 0–0.5% O ₂ (gas-dependent)
Gas temp.	50°C max.



Webinar: Process Gas Analyzers 101

- Why analyzers are necessary?
- How to find what information is necessary?
- How to correctly place analyzers in your process?

Get answers to these questions and more —
watch the full recorded session at bit.ly/gas-analyzers-101

Every month we offer webinars to help you choose the right instrumentation for your process and get the most out of the products you buy from us. Sign up for live webinars or watch recordings at www.Lesman.com/train



FIDAMAT 6 Flame Ionization Detector for Extractive Gas Analysis



APPLICATION TOOLKIT

Extractive flame ionization detector for total hydrocarbons, 19" rack mount analyzer

Output: 0/2/4–20 mA plus Profibus, RS-485, Ethernet optional

FIDAMAT 6 analyzer
Prices start at \$8423.00

Please issue all orders to Siemens Industry Inc, c/o Lesman.

Features

- Four freely parameterizable linear measuring ranges with suppressed zero
- Galvanically isolated measured value output of 0, 2, or 4–20 mA
- Complete heated gas path up to 200°C for measuring corrosive gases and those with moisture content up to 100%
- Wear-free, corrosion-proof stainless steel filter
- Clog-free sample gas quartz capillary
- Corrosion protection by pump shutdown in case of a deviation in setpoint temperature of oven or pump heating system
- Response factors according to emission requirements
- Low combustion air consumption
- Low cross-sensitivity to interfering gases
- Low influence of oxygen on measured value

Specifications

Gas	Total hydrocarbons
Range	0–99.999 vpm
Resolution	0.1% value
Detection limit	50/100 ppb
Gas temp.	200°C max.

Substance	Mean Response Factor
Acetone	0.92
Acetylene	0.91
Benzene	1.01
Chlorobenzene	1.15
Chloroform	0.72
Cyclohexane	1.08
Dichloromethane	1.13
Ethane	0.99
Ethanoic acid	1.13
Ethanol	0.83
Ethyl acetate	0.76
Ethyl benzene	0.96
Isobutyl acetate	0.83
Iso-octane	1.04
Isopropanol	0.81
Methane	1.06
Methanol	0.87
Methyl acetate	0.67
n-Butane	1.00
n-Heptane	1.00
n-Hexane	1.01
n-Propane	1.00
Propene	0.84
P-Xylene	1.03
Tetrachlorethene	1.07
Toluene	1.06
Trichloroethene	1.01

Siemens FIDAMAT 6 flame ionization gas analyzers measure total hydrocarbons in gases from traces to high percentage measuring ranges. Typical applications include emissions monitoring for government regulation and compliance, exhaust monitoring from driers and paint shops, process measurement in the chemical and petrochemical industries, TLV measurement in workplaces, ambient air monitoring and measurement of impurities in gas production.

Thanks to its robust design, FIDAMAT is equally suited for measuring both total trace hydrocarbons and corrosive process gases.

The heart of the FIDAMAT is the flame ionization detector. The sample gas is mixed with hydrogen and a certain amount of air, and fed to nozzle in the combustion chamber. There, the mixture is ignited and the hydrocarbons are ionized. An electrode on top of the flame picks up the ions. The ionization current is directly proportional to the amount of hydrocarbon atoms in the sample gas.

FIDAMAT 6 features Siemens' backlit LCD analyzer display, with simultaneous display of measured value, status bar, and measuring ranges. It includes warning and fault messages for failure of combustion gas, extinguished flame, and to indicate pump and filter faults.

A standard RS-485 communication connection supports USB, Ethernet, and RS-232, and can be used to connect to Profibus DP/PA interface.

The system includes one analog output for each measured component, two programmable analog inputs, six configurable binary inputs, six configurable relay outputs for failure, maintenance request, maintenance switch, limit alarm, external solenoid valves, and measuring point switchover. Eight more binary inputs and eight relay outputs can be added for autocalibration to up to four calibration gases.

FIDAMAT operation includes automatic startup and shutdown by flow control, automatic zero and span calibration, automatic flame reignition, and safety shutoff of sample gases and back-purge of the gas path.



Siemens Process Analytics in Cryogenic Air Separation Plants

- Air separation process requires measurement of hydrocarbons, oxygen, and traces of carbon dioxide
- The FIDAMAT 6 (see product details above) can be used to remove the concentration of acetylene, which can lead to explosive mixtures
- High percent oxygen range can measured with the OXYMAT 61 (see page 30), which uses reference gas with selectable oxygen concentration

- OXYMAT 64 (see page 31) is suited for extracting low concentrations of oxygen from argon and nitrogen streams
- ULTRAMAT 6 (page 29) is used to remove traces of CO₂ from the final product to ensure product quality

Read the full case study at bit.ly/fidamat6

SIEMENS

LDS 6 In-Situ Multipoint Process Gas Analyzer



APPLICATION TOOLKIT

In-situ tunable diode laser system for multigas measurement, rack-mount analyzer with field-mount sensors.

I/O (per-channel): Two analog outputs three binary inputs and outputs. Ethernet communications.

LDS 19" rack-mount analyzer

Prices start at \$16070.00

LDS cross duct-mount sensors

Prices start at \$5129.00

Please issue all orders to Siemens Industry Inc, c/o Lesman.

Features

- In-situ measurement — no gas sampling required
- Rack-mount analyzer supports up to three measuring points
- Built-in auto-calibration, dynamic dust load compensation (up to 100 g/Nm³)
- High selectivity, no cross interferences
- Fast determination of gas concentration and temperature at the same time — no temperature influence from radiation of particles, no wall effect, no drift
- For applications in process control, DeNO_x optimization, combustion control, emissions monitoring, filter optimization

Specifications	
Gas (three max)	O ₂ , NH ₃ , HF, H ₂ O, CO ₂ , CO, HCl
Measuring range	0–5 ppm to 0–5% (gas-specific)
Resolution	0.1% value
Detection limit	From 0.1 ppm
Gas temp.	1500°C max.
Response time	1–3 seconds

LDS 6 is a high-performance process gas analyzer that operates directly in the process stream. No extractive sampling lines needed. The central unit is separated from the sensor using fiber optics. So, no matter how hostile the process environment, the analyzer can be installed outside the hazardous area.

The biggest benefit of in-situ gas analysis is that measurements are carried out in real time, so you have more proactive control of dynamic processes and can make cost-saving corrections quickly.

The very nature of laser light allows single-line spectroscopy free of interferences. Since the bandwidth of the laser light is extraordinarily small, only the gas component of interest will interact. Other influences, like dust and temperature, are eliminated by the inherent compensation capabilities of this measurement technology.

LDS 6 comes with all the features for easy-to-use and service-friendly operation. The compact analyzer unit installs easily into a standard 19" rack. A built-in calibration system allows a permanent hands-off self-calibration of the instrument. This, together with the intuitive user interface, makes it very easy to operate the LDS 6 with minimal training. In the unlikely case of service need, the modular design of the system allows for easy replacement of all components in the field, even the laser module.

Get full specifications and learn more about Siemens analyzers at bit.ly/gas-analyzers

SIEMENS

SITRANS SL Diode Laser In-Situ Oxygen Analyzer

Features

- In-situ measurement — no gas sampling required
- In-line reference cell — stable instrument operation with outstanding performance
- Low maintenance — easy to align and service
- Almost no cross interferences

Siemens SITRANS SL is a diode laser gas analyzer suitable for fast and non-contact measurement of gas concentrations in process or flue gases. The paired sensors (transmitter and receiver) are meant to be mounted directly on the process with no need of sampling systems. All hardware necessary for processing the measurement signal into a concentration value, monitoring, control and communications are integrated into these two main modules. The IP65-rated sensors are designed for operation under harsh environmental conditions.

Laser light is sent from the transmitter, passing through the process gas, arriving at the detector on the receiver side. The measurements are performed on-line with a very short response time. The laser characteristics allow single-line spectroscopy free of interferences. Since the laser light's bandwidth is extremely narrow, only the gas component of interest will interact with it.

Other process influences, like dust and temperature, are eliminated due to the inherent compensation capabilities of this technique. An in-line reference cell filled with a non-interfering reference gas minimizes the need for maintenance and recalibration.

Specifications	
Gas	Oxygen
Measuring range	0–100% (lower ranges selectable)
Resolution	0.02% volume
Detection limit	200 ppm
Gas temp.	600°C max.
Response time	1–3 seconds



APPLICATION TOOLKIT

*In-situ tunable diode laser system for oxygen measurement
0–100% O₂, 0.02%V resolution*

Two each: Analog inputs, analog outputs, binary inputs, and binary outputs, Profibus DP optional.

SITRANS SL
Prices start at \$19128.00

Please issue all orders to Siemens Industry Inc, c/o Lesman.

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a GE company


oxy.IQ Panametrics Digital Oxygen Transmitter

Features

- Two-wire, loop powered 4-20 mA transmitter
- Proven galvanic fuel cell O₂ sensor technology
- User selectable ranges from 0–10 ppm to 0–10000 ppm or 0–1% to 0–50% oxygen
- Display shows measured value, sensor lifetime indication, NAMUR error indication
- Front keypad for selectable and programmable ranges
- Sensor failure output error

The oxy.IQ is a highly reliable and cost-effective two-wire loop-powered transmitter with a linearized 4–20 mA output. It measures oxygen in ten different selectable ppm ranges and seven selectable percentage ranges, using proven sensor technology to accurately measure oxygen in a variety of gases. When equipped with optional zener barriers, the oxy.IQ can be mounted in hazardous (classified) locations.

The oxy.IQ's oxygen sensor is an advanced galvanic fuel cell that provides superior performance, accuracy, stability, and long life. Its innovative design eliminates the potential for negative signal output and reduces the sources of contamination. The cell is unaffected by other background gases or hydrocarbons, and is compatible with acid gases (OX-2 and OX-4 cells). Because the cell is self-contained, it requires minimal maintenance. There's no electrolyte to change or electrodes to clean.

Oxygen Sensor Interference Gases

Gas	OX-1, OX-5 ppm Cont	OX-2 ppm Cont	OX-3 %		OX-4 %	
			Cont	Int [1]	Cont	Int
H ₂ S	<5 ppm	<10 ppm	0.0005%	0.01%	0.001%	0.1%
SO ₃	<10 ppm	<10 ppm	0.01%	0.1%	0.01%	0.1%
SO ₂	<10 ppm	[3]	0.01%	0.1%	[3]	[3]
HCl, HCN	<1000 ppm	[3]	0.1%	1.0%	[3]	[3]
CO ₂	<1000 ppm	[3]	0.1%	20%	[3]	[3]
NO ₂ , CL ₂	[2]	[2]	[2]	[2]	[2]	[2]

Cont = Continuous, Int = Intermittent

[1] Recommended maximum exposure 30 minutes followed by flushing with ambient air for equal period

[2] Minimal effect on sensor performance, but produces signal interference of 1:2 ratio, ppm levels only (e.g., 100 ppm NO₂ looks like 200 ppm O₂)

[3] Minimal effect on sensor performance.

Applications

- Glove box purge and leak detection
- Natural gas
- Semiconductor wafer machines
- Coating process machines
- Membrane air separators
- Inert welding gases
- Pure gaseous hydrocarbon streams
- Process monitoring of gaseous monomers
- Heat treating and bright annealing

Condensed Specifications

User-Selectable Measurement Ranges: PPM Sensors: 0–100, 0–200, 0–500, 0–1000, 0–2000, 0–5000 or 0–10000 ppm_v O₂; OX-1 or OX-2 PPM Sensors: 0–10, 0–20 or 0–50 ppm_v O₂; Percent Sensors: 0–1%, 0–2%, 0–5%, 0–10%, 0–25%, or 0–50% O₂

Sample Flow Rate: 1.0 SCFH (500 cc/min) recommended

Construction: NEMA 4X/IP66 weatherproof, corrosion-resistant enclosure; *Wetted Materials:* 316 stainless steel, Viton o-ring, gold-plated sensor electrical contacts and glass; *Process Connection:* 1/8" NPT inlet and outlet; *Cable:* PN 704-1317: Black jacket, twisted pair with connector; 26 AWG, 2m or 10m length

Approvals (Pending): *General purpose:* Non-incendive without use of zener barrier or galvanic isolator, US/Canada Class I, Div 2, Groups A–D, T6; *Intrinsically safe:* With zener barrier, USA/Canada Class I, II, III, Div 1, Groups A–G, T6, AEx ia IIC T6; Ex ia IIC T6; Tamb –20° to 60°C

Installation: *Non-Incendive (Div 2) and General Purpose:* No zener barrier required, 9–28 VDC loop powered, 0.7 W max. *Intrinsically Safe:* Requires MTL7706 zener barrier, only IS cable, one non-IS cable, 24–28 VDC @ 50 mA power required

Operating Temperature: O₂ Sensor: 32° to 113° F (0° to 45°C)

Accuracy at Calibration Point: ±1% range standard; OX-1/OX-2 0–10 ppmv: ±2% range

Model Selection Guide

Description		Catalog	Price
oxy.IQ Oxygen transmitter, 4–20 mA output		OXYIQ-	\$2360.00
Sensor	None	0 _ _	0.00
	Standard PPM (0–10 to 0–1000 ppm)	1 _ _	445.00
	Acid ppm (0–10 to 0–1000 ppm)	2 _ _	360.00
	Standard Percent Sensor	3 _ _	255.00
	Acid Percent Sensor	4 _ _	340.00
Package	General Service	_ 1 _	0.00
	Intrinsically Safe	_ 2 _	Call
Cable	None	_ _ 0-	0.00
	2 Meter Cable	_ _ 1-	0.00
	10 Meter Cable	_ _ 2-	123.00
Barrier	None	0	0.00
	Intrinsically Safe Zener Barrier	1	Call



XMTC Thermal Conductivity Transmitter for Binary Gas Mixtures



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a GE company



Features

- Ultra-stable glass-coated thermistors
- Single or dual gas pushbutton calibration
- PC interface package for digital output
- Type 4X/7 construction, ATEX, FM, CSA certified for Class I, Div 1 hazardous areas
- Improved efficiency and increased process uptime
- Greater safety assurance
- Reduced installation cost for hazardous area locations and reduced total cost of ownership
- Remote monitoring capabilities

BHGE's Panametrics XMTC is a compact, rugged, field-mounted thermal conductivity transmitter that measures the concentration of two-gas mixtures that contain hydrogen, carbon dioxide, methane or helium.

The XMTC measuring cell is insensitive to flow variations and resists contamination. It has no moving parts, so it easily withstands the shock, vibration, and harsh environments of industrial applications. Its modular construction means any required maintenance is fast and

easy. Field-calibrating the XMTC transmitter and replacing the plug-in measuring cell with a pre-calibrated spare takes just a few minutes.

The XMTC requires use of a sample system to deliver a clean representative sample at a temperature, pressure, and flow rate that are within acceptable limits. The sample system's design will depend on the conditions of the sample gas and your application requirements.

The XMTC combines computer-enhanced signal measurement with fast-response software, real-time error detection and digital communication via an RS232 or RS485 interface. You can also add display and control functionality by connecting your XMTC to a GE TMO2D display and control module or a BHGE's XDP explosion-proof display, for local control in harsh environments.

Condensed Specifications

Accuracy	±2% of span
Linearity	±1% of span
Repeatability	±0.5% of span
Zero/ Span Stability	±0.5% of span per week
Response Time	20 seconds for 90% of step change
Required Flow Rate	Sample: 0.1 to 4.0 SCFH; 0.5 SCFH nominal; Optional Reference Gas: 0.01 to 4.0 SCFH; 0.5 SCFH nominal
Analog Output	4 to 20 mA isolated, 800Ω maximum field-programmable
Power	24 VDC ±2 VDC, 1.2 A maximum
Temperature	Standard: 131° F; Optional: 149° F
Sensor Wetted Materials	316 stainless steel, glass and Viton® O-rings; Hastelloy C276, titanium and Chemraz® O-rings optional
Connections	Electrical: 3/4" NPTF; Sample and reference inlet/outlet: 1/4" NPTF
Environmental	Weatherproof: Type 4X/IP66; Explosion-proof: Class I, Div 1, Groups A-D; Flameproof: II 2 GD EEx d IIC T6 or T5 ISSeP02ATEX022

XM02 Thermo Paramagnetic Smart Oxygen Transmitter/Analyzer



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a GE company



Features

- Measures oxygen from 0.01 to 100% in gases
- No moving parts; maintenance-free
- Corrosion-resistant design
- Automatic background-gas compensation
- Suitable for use in inerting/blanketing liquid storage tanks, reactor feed gases, centrifuge gases, catalyst regeneration, solvent recovery, landfill gas, sewage wastewater digester gas, and oxygen purity applications

BHGE's XM02 is a tough and compact thermo paramagnetic oxygen transmitter with a dual chamber and no moving parts. Due to the rugged design, the XM02 is weatherproof, explosion-proof, flameproof, resistant to contamination, and flow variation. It requires a 24 VDC power and gives a 4-20mA output with fully programmable zero and span settings. The XM02 has the computing power to provide online signal conditioning and digital communications via an RS232 interface. Integrated signal processing provides improved accuracy and automatic compensation for background gas variations and/or atmospheric pressure effects.

Condensed Specifications

Analog Output	4 to 20 mA, isolated, 800 Ω maximum load, field-programmable
Digital Output	RS232, three-wire
Power	24 VDC ±4 VDC, 1.2 A maximum
Cable	Standard: 10 ft (3 m), four-wire; Optional: Lengths up to 4000 ft available for current output
Temperature	Standard: 113° F; Optional: 140° F
Wetted Sensor Materials	Standard: 316 stainless steel, glass and Viton® O-rings; Optional: Hastelloy® C276 and Chemraz® O-rings
Approvals	Weatherproof: Type 4X/IP66; Explosion-proof: Class I, Div 1, Groups A-D, FM/CSA; Flameproof: II 2 GD EEx d IIC T6, ISSeP02ATEX022; Ex d IIC T6 IP66 Class I, Zone 1



dew.IQ Single Channel Moisture Analyzer with IQ.Probe

Features

- Rack, bench, panel, and wall mount configurations
- NEMA 4 weatherproof membrane front display and keypad
- Compatible with M series or IQ.probe moisture probes
- Displays moisture content in dew/frost point and ppmv
- Fail-safe fault alarm relay
- Two measurement alarm relays

The dew.IQ is an economical single-channel aluminum oxide hygrometer, ideal for industrial applications that require accurate, real-time moisture measurement.

Installing the dew.IQ is simple. As a field upgrade for its predecessors, the M series probe and cable mate to the dew.IQ in minutes, minimizing installation costs.

The dew.IQ accurately tracks fast-changing process conditions and displays the moisture content on an LCD as dew/frost point temperature in °F or °C or as ppmv with a constant pressure input. Measurement is also available as an analog output. The dew.IQ features two Form C alarm relays for high and low moisture limits.

The large display and six-button keypad combine to make selection of analog output zero and span, alarm setpoints fast and easy, and entering calibration data simple and straightforward.

Both the IQ.probe and the M series moisture probes are rugged and accurate true absolute humidity sensors, with calibration traceable to national standards.

The IQ.probe measures moisture concentration in gases from trace to ambient levels. It requires only twisted pair cabling, so it can be mounted up to 3000 feet away from the analyzer. The real power of the IQ.probe comes from an electronics module that's attached to the sensor probe. The 16-bit resolution lets it detect parts per billion changes in moisture concentration. The electronics are self-calibrating, ensuring long-term stability.

The IQ.probe sensor can withstand process temperature excursions up to 158° F and process pressures from vacuum to 5000 PSIG. No minimum flow rate is required. It works with gas flow ranges from static to 10,000 cm/s linear velocity at 1 atm, and liquid flow ranges from static to 10 cm/s linear velocity at a density of 1 g/cc.



Applications

- Industrial gas
- Furnace gas/heat treating
- Power generation
- Air dryer
- Pharmaceutical
- Aerospace

Easy field upgrade for the Panametrics MMS35, System 580, Model 600, 700 and older analyzers.

Specifications

Input: Moisture signal from an M series or IQ.probe thin film aluminum oxide sensor

Calibrated Accuracy (at 77°F): ±3.6° F from -85° to 50°F, ±5.4° F from -112° to 87° F

Dew/Frost Point Temperature: Overall range capability: -166° to 140°F; Standard: -112° to 68°F with data to -166° F; Ultra-low: -166° to -58° F; High range data: -112° to 140°F

Analog Output: Single recorder output, internally optically isolated, 10-bit, 0.1% resolution

Alarm Relays: One failsafe fault relay, two standard Form C SPDT relays, rated 3A @ 250 VAC/30 VDC; Set to any level within the range of the instrument, programmable from the front panel

Datalogger: 32 GB capacity with MicroSD card, 2 GB card included with unit

Display Functions: Dewpoint temperature in °F, °C, or ppmv with a constant pressure input; sensor signals for diagnostics

Power Requirements: Universal power, 100–240 VAC @ 50/60 Hz, or 24 VDC nominal

Operating Temperature: -4° to 140°F (-20° to 60°C)

Intrinsic Safety: External safety barrier for moisture input, optional on M series probe

Model Selection Guide

Description		Catalog	Price
dew.IQ moisture analyzer		DEWIQ-	\$3100.00
Package	Rack Mount	1 _ _	0.00
	Bench Top	2 _ _	0.00
	Panel Mount	3 _ _	0.00
	Wall Mount	4 _ _	510.00
Power & Power Cord Options	R/P 110 VAC right plug	_ 1 _	0.00
	R/P 220 VAC right plug	_ 2 _	0.00
	R/B/P 110 VAC straight plug	_ 3 _	0.00
	R/B/P 220 VAC straight plug	_ 4 _	0.00
	24 VDC, no power cord	_ 5 _	0.00
	No cord for AC wall mount	_ 6 _	0.00
Program	Standard Program	_ _ 1-	0.00
	Special Instrument Software	_ _ S-	0.00
Special	None	0	0.00
	Special	1	Call

Learn more about BHGE analyzers and probes at Lesman.com.



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BHGE Sample Systems for Gas and Moisture Analyzers

Sample systems provide sample gas to the analyzer at optimal pressure, temperature, flow rate, and cleanliness. They are used for isolation, filtration, and pressure/temperature/flow control of analyzer systems in petrochemical, natural gas, industrial gas, semiconductor, furnace gas and heat treating, power generation, air dryer, and pharmaceutical applications

Choose from standard systems for common applications, or order an engineered system per your specific requirements.

Benefits of using a sample system

- Higher accuracy and reliability of measurement
- Extends analyzer life
- Reduced analyzer maintenance and associated costs
- Facilitates field calibration

Call 800-953-7626 for pricing and customizations!



Thermoparamagnetic process oxygen analysis of a low pressure application with remote selection of sample, purge, and calibration gases.



Moisture analysis in high pressure natural gas. Dual coalescing filters with bypass flow to remove TEG from sample gas. It can be coalesced out of sample, providing reliable sensor performance.

Set BGA Complete Measuring System for Gas Analysis in Biogas Plants

Siemens Set BGA (Bio Gas Analyzer) is a fully configured and ready-to-run gas analysis system for use in biogas plants. The Set BGA combines a measuring system and an optional sample preparation system.

The measuring system with an integrated ULTRAMAT 23 industrial gas analyzer has four measuring channels for simultaneous detection of methane, carbon dioxide, hydrogen sulfide, and oxygen. The ULTRAMAT 23 features maximum performance and operational reliability proven by decades of operation in harsh industrial environments.

The sample preparation can process up to four sample streams for continuous analysis. In addition to a supplied suction pump, you can add a cabinet heater to avoid condensation moisture in outdoor installations.

Features

- Customize the Set BGA according to your application requirements
- Measures concentrations of up to four gas components: CO₂, CH₄, O₂, and H₂S
- Wall or rack mounting including flame arrestor
- Reduced calibration gas requirements thanks to AUTOCAL function with ambient air
- Doesn't require dilution of sample gas
- Up to four streams of sample preparation
- Open interface architecture, including fieldbus, allows for simple integration into process systems

SIEMENS

NEW



Measuring System



Sample Preparation



Fully Configured Set BGA

Custom Multipoint Gas Sampling Systems

Buying multiple gas analyzers to sample various points in your facility can get costly. We can help lower installation costs by building an application-specific multipoint gas sampling system.

Call us at 800-953-7626 to find out how we can help you with your next project.



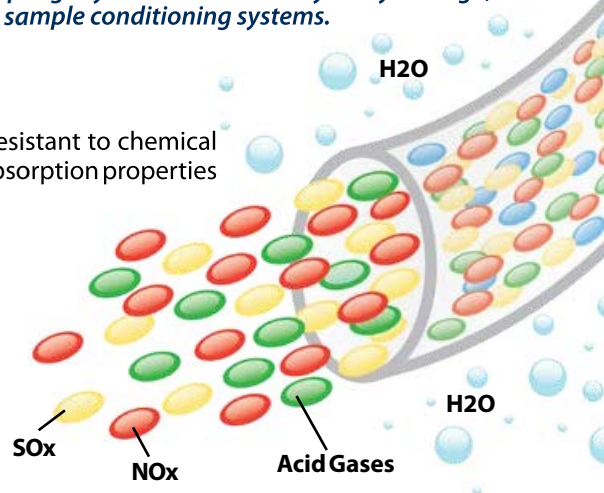
NEW



What is Nafion™ Membrane Drying Technology?

Nafion™ is a copolymer of Teflon® and sulfonic acid. Like Teflon, Nafion is highly resistant to chemical attack, so it can be used with highly corrosive gases. Nafion carries sulfonic acid water absorption properties and transfers water in a fraction of a second at a molecular level.

- Nafion tubing is very stable at high temperatures up to 329° F
- Doesn't undergo chemical changes unless exposed to water solutions containing salts
- Doesn't react with any of the usual gases and vapors present in monitoring applications
- Highly resistant to chemical attack (can dry or process samples containing high concentrations of very corrosive gases like hydrogen fluoride or hydrogen chloride)



Perma Pure PD Series Gas Dryers

- Continuous drying of gases to very low dew points; removes only water vapor
- Does not require electricity
- No moving parts — maintenance-free operation
- Excellent corrosion resistance
- Low pressure drop
- For high performance, high flow gas drying applications

PD-Series gas dryers are multi-tube gas sample dryers that use Nafion™ technology. They are designed for high flow, high performance gas drying applications. PD-Series dryers can be used to dry to -49° F without removing other compounds.

PD-Series gas dryers are suitable for gas sample conditioning for continuous emissions and process monitoring applications, where sample gases flowing through the Nafion tubing are dried without removing any of the sample analytes. PD-Series dryers are also used as moisture exchangers in fuel cell applications. Fuel cell exhaust gases transfer their moisture and heat to the dry inlet gases (primarily hydrogen). Finally, PD-Series gas dryers can be used in small scale process applications. Process applications take advantage of one or more of the unique properties of Nafion: highly efficient and selective moisture exchange, ion exchange capabilities, and extreme corrosion resistance.

Specifications

Models: PD-050T, PD-100T, and PD-200T

Number of Nafion tubes: PD-050T: 50 tubes; PD-100T: 100 tubes; PD-200T: 200 tubes

Available lengths: 12", 24", 48", or 72"

Housing materials: Polypropylene, fluorocarbon, or stainless steel

Sample gas flow rates: PD050T: 2–10 lpm; PD-100T: 4–20 lpm; PD-200T: 10–40 lpm

Get pricing and help choosing the right sample conditioning system for your application — call 800-953-7626.

SDS Supplemental Drying Systems

SDS™ Series drying systems provide a boost to an existing gas sample conditioning system. The SDS will reduce the dew point of the sample from 39° F to below 5° F, reducing the total moisture content by an additional 80%. Lowering the gas sample dew point is essential in order to eliminate the formation of acid mists. Rather than replace an existing cooler with a "super" cooler, the SDS is a cost effective way of extending the life and improving the performance of your existing sample conditioning system. The SDS can process one stream of up to 10 lpm, or two streams of up to 5 lpm each.

- Eliminates formation of acid mists
- Selective Nafion™ membrane technology
- Single or dual sample streams
- Improves chiller performance
- Corrosion resistant
- Improves sensitivity of IR measurements



Micro-GASS Heated Gas Sampling Systems for Electrochemical Sensors

Perma Pure's Micro-GASS systems prepare gas samples for analysis by electrochemical sensors (ECS) when the samples are hot and too humid for analysis, typically condensing at room temperature. The Micro-GASS system reduces sample humidity to the ideal range for ECS, typically 30 to 70% R.H., while also removing dust or dirt particles from the sample.

Micro-GASS units rely on Nafion dryer technology and offer full corrosion resistance and very high selectivity, so complex samples can be processed without loss of analyte gases.

The Micro-GASS operates as a self-contained unit. It reuses gas generated from the exhaust stream of the sensor as the purge gas. You can transport the system easily since it relies only a power source.

Typical applications for the Micro-GASS sample conditioning system include monitoring of boiler and burner efficiencies.

Features

- Heated sampling for electrochemical sensors
- Yields 30-70% RH samples
- Accepts flow rates up to 1 lpm
- Built-in pump draws sample to sensor
- 0.1 micron disposable filter
- NEMA-4X rated

Micro-GASS Analysis Sampling System

Description	Catalog No.	Price
Micro-GASS complete heated gas sampling system for electrochemical sensor analysis (specify 120 or 240 VAC voltage)	UG-1212-F1	\$4201.00
Spare Parts		
Nafion dryer, 0.070" O.D., 24" length, replacement element only	MD-070-24E-F	101.75
Dryer assembly (includes: dryer, heater, insulation, thermocouple, connectors)	UG-DA-070-24F	776.88
Micro-GASS filter assembly	UG-F	481.25
Micro-GASS filter element (package of 5 elements)	UG-FE	90.48
Vacuum pump for sample and purge, Teflon-coated (specify voltage)	UG-1212-PUMP	817.50
Flow meter, sample gas (0–1.5 LPM)	UG-FM	192.50



The system includes:

- 12"W x 12"H x 7"D fiberglass enclosure with transparent cover
- Teflon™ sample tubing and Kynar™ fittings, 1/4" compression inlet
- Heat-shrinkable conduit for heated sample line
- Teflon-coated vacuum pump for sample and purge
- Panel-mounted sample gas flowmeter and digital temperature controller
- Low temperature safety interlock issues alarm and shuts off sample
- Nafion™ gas dryer, model MD-070-24F-4, heated
- Corrosion-resistant Kynar filter body w/filter element of borosilicate glass fiber in Teflon binder, 1 μm absolute porosity, model UM-F

Baldwin™ Series Digital Thermo-Electric Gas Sample Coolers

Perma Pure's Baldwin Series digital thermo-electric coolers combine the proven track record of Baldwin™ classic coolers with a new digital control system. They feature reliable performance for high flow rate, high ambient temperature, and high water volume applications. All Baldwin series coolers use thermo-electric elements (Peltiers) to cool the sample gas to the desired dew point temperature. Condensate can be removed with a peristaltic pump as it forms.

Features

- Reliable dedicated digital control system keeps your system operating efficiently
- Advanced PID control algorithm increases temperature control precision to maintain analysis accuracy
- Continuous temperature display
- Alarm outputs provide alarm interface capability for your data acquisition system as well as direct control of sample pumps
- Configurable for simple control of multiple sample streams
- Individual water slip sensors and alarm outputs safeguard against upset conditions
- Gas stream temperature output allows direct monitoring, eliminating guess-work
- 115 or 230 VAC models



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See page 20 for details!

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See page 7 for details!

